

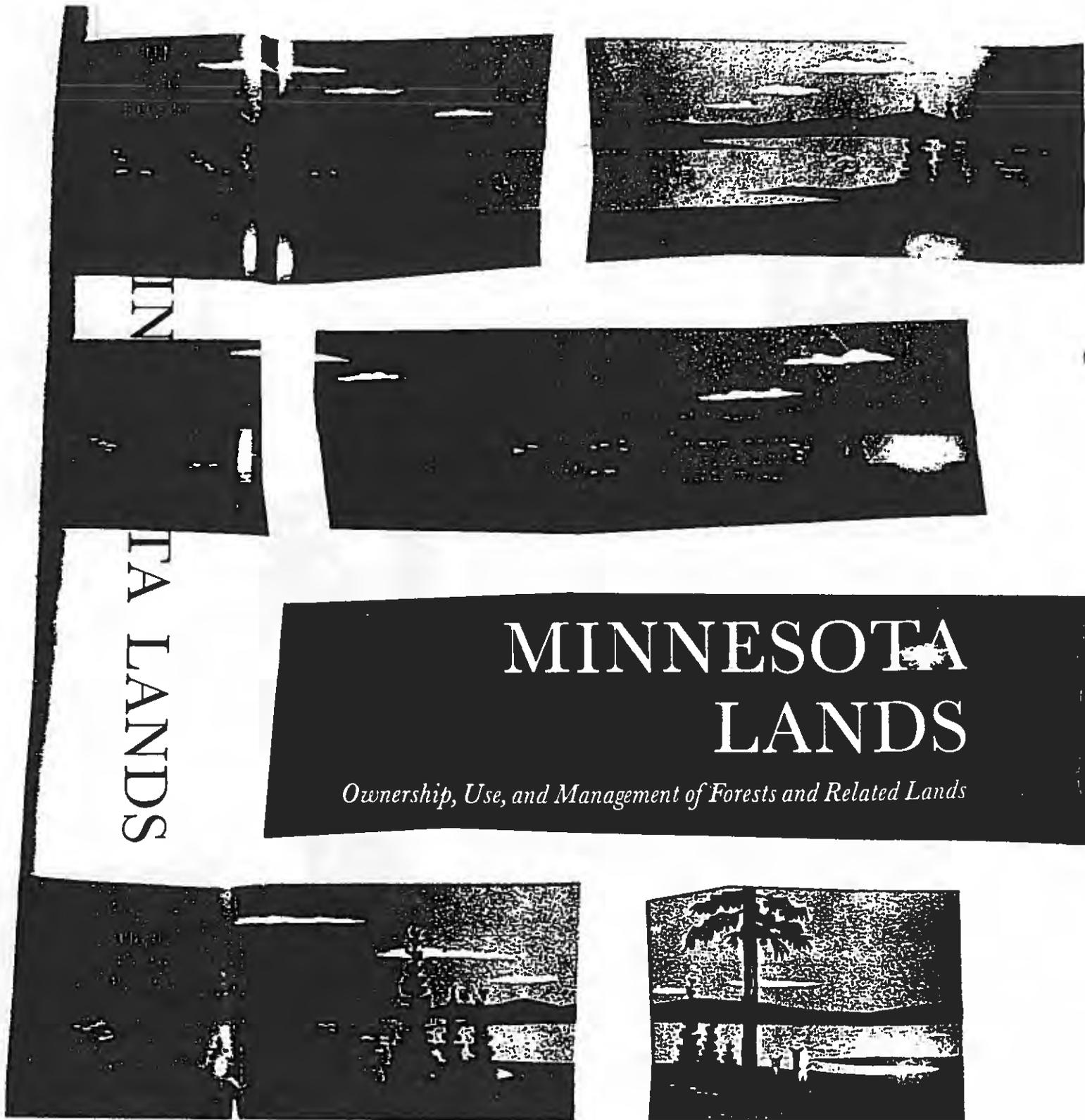
MINNESOTA LANDS

***Ownership, Use, and Management of
Forests and Related Lands***

The American Forestry Association

***This is available on the Land Department's Web-site
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MINNESOTA LANDS

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Ownership, Use, and Management of Forests and Related Lands

FOREST POLICY is largely determined by the pressure of people on land. This pressure has become more pronounced in recent decades, due to the shifting base of an exploding population.

To take cognizance of this situation became the number one plank of the program of The American Forestry Association, adopted in 1954. That program recommends concurrent national and state-by-state studies of forest land ownership patterns and problems, and recognizes that individual state conditions must be considered not only by themselves but as a part of the national picture. Since this approach to ownership influences represents something new in America, AFA's Board of Directors determined that three pilot exploratory studies by recognized experts were needed to serve as working models for others on how to obtain and organize information and interpret facts.

California was selected for the initial effort, and the study was directed by Dr. Samuel T. Dana and Dr. Myron Krueger. Their report *CALIFORNIA LANDS—Ownership, Use, and Management* was published by The American Forestry Association in 1958. According to DeWitt Nelson, Director of Natural Resources in California, the AFA study is the most complete ever made in his state; it paved the way for a number of innovations in resource programming, including the establishment of a Wildland Research Center at the University of California.

Publication of the present book concludes the Association's second landownership study — in Minnesota. The study was sponsored by the Louis W. and Maud Hill Family Foundation. Dr. George A. Selke, of the State Department of Conservation, served as chairman of a special landownership committee. The study was made by the authors of this book — Samuel T. Dana of Ann Arbor, Michigan, and Russell N. Cunningham and John H. Allison, both of Saint Paul, Minnesota. (Biographical sketches on back of jacket.) Although this study has just been completed, it has already resulted in the appointment of a special interim committee by the Minnesota Legislature, with Prof. Allison as consultant.

A third landownership study is now under way in North Carolina under the direction of Kenneth B. Pomeroy, Chief Forester of The American Forestry Association.

The American Forestry Association, publisher of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources—soil, water, forage, wildlife, and outdoor recreation. Its purpose is to create an enlightened public appreciation of the part these resources play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

JACKET DESIGN BY WILLIAM B. DOWDELL



SAMUEL T. DANA

Samuel T. Dana is generally regarded as "Mr. Forestry" in the United States. A Maine man, he came out of Bowdoin and Yale with a brilliant scholastic record and a love of the woods. He started with the Forest Service in 1907, only two years after it took over the management of the national forests. In 1927 he became director of the Northeastern Forest Experiment Station, where he helped lay the foundation for today's forest research program. For several years he served as State Forest Commissioner of Maine, and in 1927 he became dean of the School of Forestry and Conservation, University of Michigan. In 1950 he reorganized it as the first School of Natural Resources. Although he officially retired in 1953, Dr. Dana has been busier than ever. He directed the California landownership study of The American Forestry Association that preceded this Minnesota study, and he was appointed by the President as a member of the Outdoor Recreation Resources Review Commission.

JOHN H. ALLISON

John H. Allison is the top expert on forest taxation in Minnesota, and is serving as a consultant to the Minnesota Legislative Committee which was formed as a result of this study. Prof. Allison was born in East Granby, Connecticut, and graduated from the Yale School of Forestry in 1906. After a tour of duty with the Forest Service, he became professor of forestry at the School of Forestry, University of Minnesota, in 1912. As a teacher, he specialized in forest management and also handled work in economics and taxation. On several occasions he obtained leave of absence to do special work for the Forest Service, and in 1924 he was an exchange student in forestry in Sweden. He retired from the University in 1952.



RUSSELL N. CUNNINGHAM

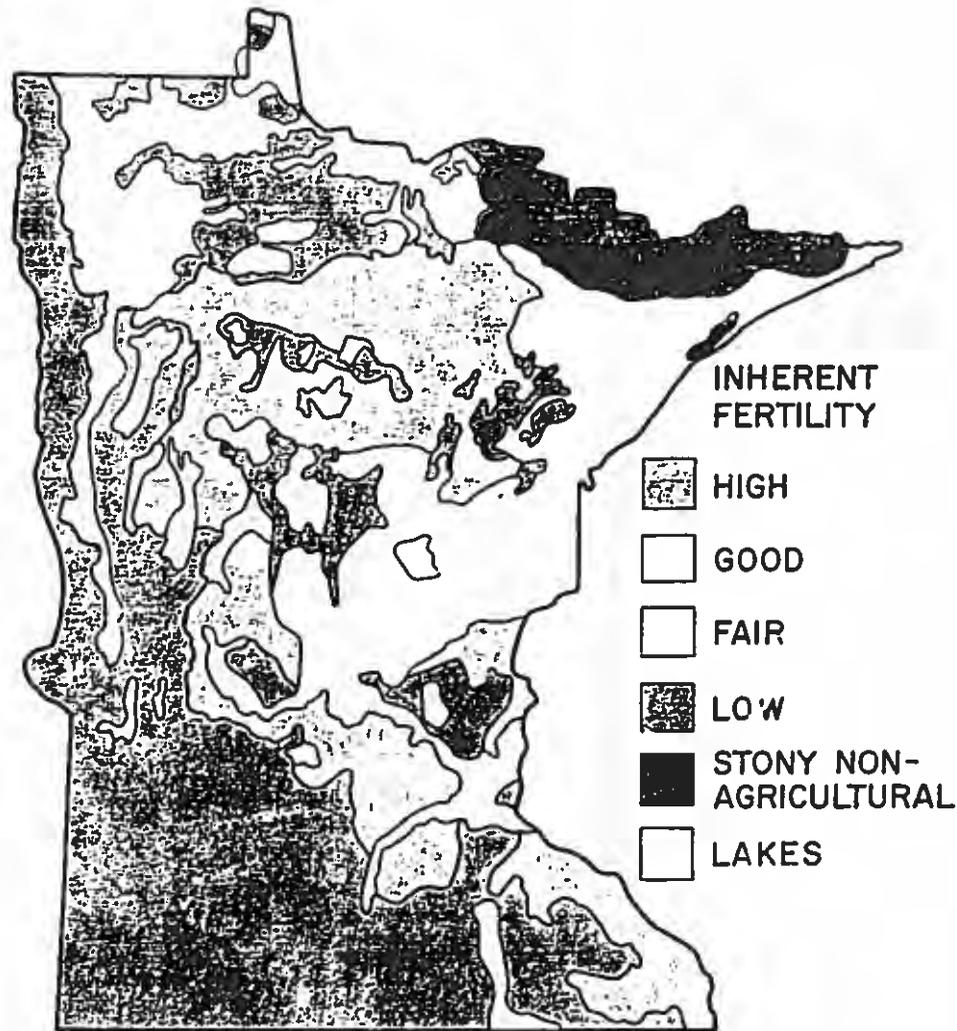
Russell N. Cunningham is an expert on land and land ownership in Minnesota and Wisconsin. He directed the forest surveys of the Forest Service in those states in the early 1930's, and at the time of his retirement in 1957 he was the Chief of the Division of Forest Economics at the Lake States Station. Starting as a forest ranger on the Nezperce Forest in Idaho, he moved to the regional office at Missoula, Montana, and then to the Lake States Forest Experiment Station in St. Paul, Minnesota. His tour of duty with the Forest Service totaled 40 years. He is the author of numerous publications in the fields of forest land ownership and resource inventories. His hobby is music, and he plays the bass viol in a symphony orchestra.



MINNESOTA LANDS

Minnesota Lands

OWNERSHIP, USE, AND MANAGEMENT
OF FOREST AND RELATED LANDS



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Figure 1. Distribution of soils of different inherent fertility for the production of agricultural crops. Based on a generalized map prepared by the Department of Soils, University of Minnesota, and used with its kind permission.

THE AMERICAN FORESTRY ASSOCIATION

919 17th Street, N. W., Washington 6, D. C.

1960

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R.I.

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MINNESOTA LANDS

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MINNESOTA HAS ONE of the most complex patterns of land ownership in the United States. It is unique in the large amount of forest and related lands in county ownership and decidedly unusual in the small amount in industrial ownership.

STATE, COUNTY, FEDERAL, INDUSTRIAL, AND OTHER PRIVATE LANDS are so intermingled as to greatly hamper effective administration and management. Boundary adjustments and consolidations of ownership are an urgent need.

TAXATION CONTINUES to be a major concern for both local communities and private landowners. The tree growth tax law deserves a thorough trial to determine its effectiveness as a means of obtaining from forest lands their fair share of tax revenue without discouraging their intensive management.

INCREASED PUBLIC CONTROL over potholes through purchases, leases, or subsidies is essential to provide adequate breeding grounds for waterfowl. Farmers cannot be expected to bear the cost of providing the land and water needed for this purpose.

HOW TO OBTAIN better management of small woodlands remains a pressing problem. Its solution requires intensified effort in the fields of research, education, and service.

JOINT, CONTINUOUS CONSIDERATION of the state's land ownership problems by all interested agencies is a prerequisite to their solution. A promising means of bringing this about is through a Natural Resources Council established by the legislature and appointed by the Governor to serve as an advisory and coordinating body.

FOREWORD

In 1954 The American Forestry Association adopted a Program for American Forestry, the first plank in which recommended national and state-by-state studies of forest land ownership. The Association then indicated its willingness to undertake pilot studies in a few representative states as a means of stimulating and setting a pattern for similar studies in other states.

The first study was made in California, and the results were published in 1958 in a book entitled "California Lands — Ownership, Use, and Management." The Association now takes pride in presenting the findings of the second study — made in Minnesota under a grant from the Louis W. and Maud Hill Family Foundation and published with the financial support of the Blain Paper Foundation, the Hill Family Foundation, the S. T. McKnight Foundation, the Minneapolis Clearing House Association, the Minnesota and Ontario Paper Company, the Northwest Paper Foundation, Mr. F. K. Weyerhaeuser, Mr. Wheelock Whitney, and the Wood Conversion Foundation. To both the Foundation and the other contributors the Association expresses its grateful appreciation.

We hope that the study will be of value to the people of Minnesota in analyzing and solving the land problems of the state, and that it will be of assistance to other states in the initiation and conduct of similar studies.



Don P. Johnston

President, The American Forestry Association

PREFACE

The present study brings together information concerning the broad pattern of land ownership in Minnesota, the evolution of that pattern, and the major problems which it presents, with suggestions as to steps that might facilitate their solution. It was undertaken in the hope that an analysis of this sort by an independent organization would be helpful to official agencies, to landowners of all classes, and to the general public in taking action that will assure an ever-increasing contribution by the state's natural resources to its permanent well-being.

The study has been confined primarily to non-urban lands not used for residences, roads, or agricultural crops. Within this coverage, the attempt has been made to bring together all of the available facts. Some of the material has never before been published and was assembled by the appropriate agency for the specific purposes of this study. Difficulty was sometimes encountered in obtaining identical figures on the same item from different organizations and even from different units within the same organization. It has not always been possible to reconcile these discrepancies, but they are for the most part minor, and in no case do they seriously affect the overall picture.

Although the figures are neither complete nor 100 per cent accurate, they are as nearly so as is possible without further intensive research which would not yield results commensurate with the cost. Many of them are new, others have not previously been published, and as a whole they present the most comprehensive information concerning the status and evolution of the present land ownership pattern yet brought together under one cover. This is believed to be true also of the federal and state legislation which has controlled that evolution and which now governs the administration of the lands in public ownership.

The study has been carried on under the general supervision of an Advisory Committee, appointed by the President of The American Forestry Association. The committee held meetings at St. Paul on April 29-30, 1958, October 3, 1958, and January 15-16, 1960, and at Grand Rapids on July 24, 1958. The public was invited to participate in all but one of these meetings in order to provide information concerning the study and to obtain suggestions regarding its scope, conduct, and tentative conclusions. Prior to the meeting on January 15-16, 1960, a preliminary draft of the report was submitted to a large number of individuals for their review. Both oral and written criticisms were invited and many were received. They proved most helpful and were given careful consideration in the preparation of the final draft of the report.

The Advisory Committee has consulted fully with the staff concerning the scope, content, and presentation of the report, but final decision with respect to all of these items was left to the authors. The proposals which they make deserve careful consideration. Many of them call for research, the importance of which cannot be overestimated. There is hardly a problem in which thorough study of the biological, economic, and social factors involved will not contribute materially to a sound solution. It is, however, essential that research be carefully planned to make sure that the major problems are studied by competent organizations under a coordinated program. Close cooperation between research and administrative agencies is also essential to make sure that findings are put into practice without unnecessary loss of time.

Grateful acknowledgment is made to the many individuals and organizations — far too numerous to mention by name — who have cooperated in the study. Special appreciation is due to the Louis W. and Maud Hill Family Foundation, whose generous grant made the study possible, and to the School of Forestry of the University of Minnesota, which provided office space. Like the Advisory Committee, neither the Foundation nor any of the other cooperators are in any way responsible for the content of the report, for the interpretation of the data, or for the views expressed.

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HIGHLIGHTS

As a result of treaties with Great Britain and France, ownership of all land in Minnesota was at one time vested in the United States. The land was also subject to a right of occupation by the Indians ("Indian title"), which had to be extinguished before it could be transferred to state or private ownership. This was done by a series of treaties and cessions which extended over a period of about half a century ending in 1889. Subsequent transfers between different classes of owners — federal, state, county, and private — have led to the present, often illogical pattern of ownership.

FEDERAL POLICY

The original policy of Congress was to transfer federal lands to private ownership, either directly or through the states as intermediaries, on the theory that this course would best promote the development of the country. In Minnesota, grants to the state amounted to about 16,400,000 acres, nearly half of which was to assist in railroad construction. Grants and sales to individuals and corporations amounted to about 32,700,000 acres, making a grand total of 49,100,000 acres, or 96 per cent of the land area of the state.

A basic change in policy occurred in 1902, when Congress authorized the permanent reservation of certain Indian lands as the Minnesota Forest Reserve (now the Chippewa National Forest). In 1909 the Superior National Forest was created by Presidential proclamation. The policy of adding to these reservations by purchase was adopted by the Weeks Law of 1911 and expanded by the Clarke-McNary Law of 1924. More than half of the present area of 2,782,000 acres of the two national forests and Superior Purchase Unit has been acquired under these laws.

Meanwhile the government continued to dispose of other lands, with the result that the residual public domain outside of the national forests now amounts to only 82,000 acres. Reservations were, however, established for the benefit of the Indians, with frequent changes in boundaries. Cession of a large part of the area to the federal government under the General Allotment Act of 1887, and the subsequent restoration to the Indians of a large part of the ceded area, resulted in the present area of 757,000 acres of Indian reservations, 99 per cent of which is in the northern part of the state.

Wildlife refuges date from 1924, when the Upper Mississippi River Wildlife and Fish Refuge was established. Three refuges in the western part of the state bring the total area to 138,600 acres. Present policy is to expand the refuges in this region, where their primary purpose is the

preservation of breeding grounds for waterfowl, by purchase with funds made available by the recent increase in the price of migratory bird hunting stamps.

In brief, the policy of the federal government has changed from one of practically complete disposal to one of practically complete retention of public lands, with substantial consolidation of the national forests by purchase and exchange.

STATE POLICY

The state followed the example of the federal government in first disposing of the liberal land grants which it received for education, internal improvements, swampland drainage, and railroad construction, and later changing to reservations and acquisitions. Reservation of mineral lands from sale was authorized in 1889 and required in 1901. The first state park (Itasca) was established in 1891 and the first state forest (Pillsbury) in 1900. Reservation has been supplemented by substantial purchases for parks and wildlife refuges.

At both the federal and the state level, the change in policy resulted from a growing conviction that private ownership has disadvantages as well as advantages, and that public ownership has certain advantages not recognized in the early days. No reversion to the former policy of wholesale disposal seems likely in the foreseeable future, but present boundaries and areas are by no means fixed.

PRIVATE POLICY

Lands transferred to private ownership provided the foundation for the development of agricultural, logging, and mining operations in the state. Nearly all of the land primarily valuable for farming is now in private ownership and almost certain to remain so. This is particularly true in the southern part of the state, where farm ownership comprises 94 per cent of the total land area. No figures are available as to the extent of mineral lands in private ownership, but the area is relatively small and highly valuable. They will unquestionably remain in private ownership until the mineral resources are exhausted, when they will largely become available for purchase, by either private or public agencies.

For the purposes of this report, interest centers on the forest and related lands, especially in the northern part of the state. The initial policy of their owners was to harvest the merchantable timber, to sell the cut-over lands if possible, and if not to let them go for taxes. Lumbermen and nearly every one else held the erroneous belief that the lands were potentially valuable for agricultural production and would soon be developed for that purpose.

For a while speculation ran rife; prospective settlers came and went with discouraging regularity. As the true character of the lands became

evident and the possibilities of resale diminished, tax delinquency increased at an alarming rate.

Some ten or fifteen years ago the policy of the larger timberland owners, particularly in the pulp and paper industry, underwent a radical change. Timber values were going up and timber supplies were going down. Forest management became recognized as a potentially profitable investment and as the only means of assuring an adequate and continuing supply of raw materials. Industrial owners generally decided not only to retain their current holdings but to attempt some expansion. The change in policy was logically accompanied by an intensification of forest management which puts the more progressive companies among the leaders in this field. These companies desire to increase their present holdings as a means of obtaining a larger share of their wood requirements from their own land.

With smaller forest owners, there has by and large been no such change in either policy or practice. In the case of farmers, particularly in the southern part of the state, the forest normally occupies a decidedly subordinate position in relation to cultivated crops and livestock and receives correspondingly less attention. With non-farm, non-industrial forest owners, the motives for ownership are often not clear and management usually is poor.

COUNTY POLICY

The counties are relative newcomers as owners of large areas of forest land. As tax delinquency mounted, repeated efforts were made to discourage their forfeiture and to encourage their redemption. This "bargain" legislation failed to have the desired effect, and the depression years of the 1930's saw county ownership built up to the extent of millions of acres.

This unexpected and unwanted development found the counties unprepared to meet the new responsibilities thus thrust upon them. Their first reaction was to get the lands back into private ownership, an attempt which met with little success. Cutover stump lands and abandoned farm lands were a drug on the market. As this fact became evident, county auditors and land commissioners turned to the sale of what timber remained on the land as an alternative to the sale of the land itself. More recently some of them have undertaken forest planting and other cultural measures on a modest scale.

Gradually county officials have come to recognize that county lands may be an asset rather than a liability. Receipts from them have proved a welcome addition to revenue from other sources. Permanent policy, however, is still in the formative stage. County commissioners hesitate both to make extensive sales of the lands and to underwrite the cost of their intensive management.

PRESENT PATTERN OF LAND OWNERSHIP

The evolution of land ownership in Minnesota has followed a tortuous course, in which the policies and practices of all classes of owners have been dictated largely by expediency. There has been an underlying optimism that economic forces would automatically place lands in the ownership of those most likely to handle them in the public interest. The essentially unplanned distribution of ownership which has resulted may be summarized as follows:

CLASS OF OWNERSHIP	ALL LAND		COMMERCIAL FOREST LAND	
	M ACRES	PER CENT	M ACRES	PER CENT
Federal	3,812	8	3,055	17
State	5,028	10	3,484	19
County	4,799	9	3,619	20
Private — Farm	32,883	64	4,881	27
Industrial	—	—	578	3
Other	4,684	9	2,481	14
	<u>51,206</u>	<u>100</u>	<u>18,098</u>	<u>100</u>

Opinions may well differ as to the desirability of the present distribution of ownership. There can, however, be no disagreement as to the administrative and managerial difficulties resulting from the frequent intermingling of ownerships in a way that no one would deliberately have planned. The crazy-quilt pattern is particularly pronounced in the northern and central parts of the state, where efforts at improvement should be concentrated.

ADJUSTMENT AND CONSOLIDATION OF HOLDINGS

The situation is well recognized, and there have been sporadic attempts to do something about it. What is needed is a concerted and cooperative attack on the problem. As a first step in this direction, the Commissioner of Conservation might well call a conference of all interested agencies and organizations to exchange views and to formulate plans for further action.

The objective would be to seek agreement as to adjustments of boundaries and consolidations of ownership that would be mutually acceptable, and to work out ways and means of effecting them. Among the many subjects which should be considered are the following:

Reduction of the present overlapping of state and federal forests, including the proposed revision of state forest boundaries and areas.

Changes in boundaries and areas of national forests in addition to those proposed by the National Forest Reservation Commission in the Kabetogama and Pigeon River Purchase Units.

Strengthening the exchange program by tightening up existing tax forfeiture legislation and by authorizing exchanges between the counties and the state.

Speeding up the acquisition of state parks to meet the zooming demand for recreational opportunities and facilities.

Speeding up the acquisition of both state and federal wildlife refuges, with particular reference to preserving essential breeding grounds for waterfowl.

Formulating and implementing more effective programs of county land management.

Providing greater stability for the wood-using industries by increased ownership of forest land.

Planning for studies of the efficiency of management by different classes of owners.

Such a conference, and succeeding conferences, would of course have no authority to impose their recommendations on any one. Every owner will naturally continue to make his own decisions as to what adjustments and consolidations of his holdings are desirable. It is nevertheless important that these decisions be reached with full knowledge of the views and plans of others, with the objective of effecting changes that will so far as possible constitute improvements from the standpoint of all concerned.

TAXATION

The crux of the problem of forest taxation is to reconcile the requirements of local taxing units with the tax-paying capacity of forest lands. Because of the long period required for trees to mature, the problem involves the time of payment as well as the amount of the tax. The auxiliary forest law and the tree growth tax law constitute attempts to find a substitute for the general property tax as applied to forest lands that will be satisfactory both to the owner and the community. Of the two approaches, the latter is the more promising. It should be given a fair trial both by forest owners and by the counties. The importance and the difficulty of finding a method of taxation of forest lands that will obtain from them their fair share of the community's financial needs, without discouraging their intensive management on a sustained-yield basis, should not be underestimated.

With reference to both federal and state lands, the problem of compensating local communities for loss of taxes needs further study. Three methods are now in use — payment to the counties of a specified percentage of receipts, payment of a specified percentage of the appraised value of the lands, and payment of a flat sum per acre. The relative merits of the three methods, both as a matter of principle and in their practical results as applied to different classes of land, are far from clear.

DRAINAGE OF WETLANDS

Drainage has been, and continues to be, an important factor in the development of agriculture in Minnesota. It also continues to reduce the breeding grounds for waterfowl. As a result, to drain or not to drain has become a burning issue in the pothole region of the state. So far as any given pothole is concerned, there is no compromise. It can produce either agricultural crops (if drained) or waterfowl (if not drained), but not both. The situation is of concern from the national as well as the state point of view, since the pothole regions of western Minnesota and the eastern Dakotas provide the breeding grounds for a large part of the waterfowl produced of the United States.

Most of the pothole country is now held by farmers, who will naturally manage it in whatever way they regard as in their own best interest. They cannot be expected to refrain from drainage merely as a public service, for which they pay the costs. Public control over whatever area of potholes and surrounding land is regarded as necessary and desirable will therefore have to be effected by purchase, lease, or subsidization of the owner to refrain from drainage.

The early drainage projects in the northern part of the state were for the most part such a dismal failure that drainage in that region has fallen into disrepute. Wisely planned, with adequate knowledge of soils, climate, and suitable crops, it still has limited but definite possibilities for making selected lands profitable for agricultural production. Study is needed of the biologic and economic practicability of drainage as a means of increasing forest growth and yields.

PUBLIC COOPERATION AND CONTROL

State and federal cooperation with private owners of forest and related lands has not been conspicuously successful in bringing about any widespread improvement in management. Education, service, and subsidies have alike failed to achieve the hoped-for result, particularly on the part of the small owner. How to make the cooperative approach more effective is a problem that deserves, and is receiving, intensive study. Success will be contingent on convincing the small forest owners, of whom Minnesota has more than 123,000 with holdings of less than 100 acres, that good forest management is worth while — either financially or in other ways.

Minnesota's law of 1943 attempting to exercise some control over cutting on private forest lands has become virtually a dead letter and might well be repealed or drastically amended. Consideration should be given to the advisability of providing a different type of regulation which would place control over cutting operations in the hands of a local board consisting of representatives of the county, the state, private

owners, and the general public. This "grass roots" approach would place responsibility on persons who represent all of the major interests involved and who have full knowledge of local conditions. In addition to its direct effect, it would exert a powerful educational influence by emphasizing the importance of sound forest management and by forcing owners to give thought to their own situations and problems.

NATURAL RESOURCES COUNCIL

An urgent need is the creation of machinery to assure continuous, co-ordinated consideration of Minnesota's problems in the broad field of landownership, use, and management. A promising means of achieving this objective would be the establishment by the legislature of a Natural Resources Council appointed by the Governor with the advice and consent of the Senate. Its membership would consist of representatives of appropriate state, county, federal, and private interests and of the general public, with staggered terms. Its chief functions would be:

1. To identify current problems and to stimulate and coordinate studies and action aimed at their solution.
2. To advise the legislature, the Governor, and the various agencies and interests represented in its membership with respect to natural resource policies, administration, and management.
3. To facilitate contacts and to promote cooperation among the various agencies and interests concerned with land problems.

The effectiveness of such a council would depend largely on the calibre of its membership and particularly of its chairman. It would have no administrative authority or responsibilities but would exercise a strong and constructive influence as an advisor and coordinator. Its possibilities for useful service are unlimited.

PART I

NATURAL RESOURCES AND PEOPLE

Minnesota's present patterns and problems of land ownership can be best understood after a brief survey of the state's natural resources, their economic development, current use, and the people dependent on them.

CHARACTER OF RESOURCES

Topographically the state is relatively flat, with elevations ranging only from about 600 feet to 2,250 feet. Locally, however, the terrain is often rough, with fairly steep slopes. From a low divide in the north central part of the state water flows into three great river systems — south through the Mississippi River into the Gulf of Mexico, east through the Great Lakes and the St. Lawrence River into the Atlantic Ocean, and north through the Red, Rainy, and Nelson rivers into Hudson Bay.

SOILS

Nearly all of the soils of the state are of glacial origin. Figure 1 indicates in several broad classes their inherent fertility for the production of agricultural crops. It is based on a map showing 24 soil associations prepared by the Department of Soils of the University of Minnesota (81)¹. Since soils often vary greatly in character even within short distances, a generalized map of this kind does not mean that the soils within any given block of land are uniform in quality. It can, however, be safely assumed that in any block, taken as a whole, well over half of the area consists of soil of the fertility indicated.

Well over half of the state is classified as having soils of good to high fertility, and only 5 per cent as inherently not suitable for agriculture. Other factors, however, such as climate, topography, accessibility, and economic conditions, influence its availability for such use. Drainage has often been necessary and has contributed greatly to the successful devel-

¹ Numbers in italics in parenthesis refer to items in the Annotated Bibliography (Appendix V).

opment of farming on soils of high inherent fertility in the southern and northwestern parts of the state.

On the basis of the area occupied by the different soil associations, the percentage of the state falling into each of the several fertility classes is as follows:

FERTILITY	PER CENT
High	33
Good	21
Fair	29
Low	12
Rough and stony, not agricultural	5
	100

In 1954, only 63 per cent of the total area of the state was in farms and only 48 per cent consisted of cropland harvested. In other words, there is a large area of soils with fair to high fertility which is not now used for agricultural purposes.

The concentration of soils with high fertility in the southern and western portions of the state is particularly striking. Soils of good, fair, and low fertility occur throughout the rest of the state in an irregular pattern controlled by the vagaries of the glaciers by which they were deposited and by the remains of previous generations of plants (peat). Handicaps to the extensive use of the large block of soil of good fertility in the north central part of the state are the rigorous climate and the water-logged condition of the land in much of the area. In a considerable part of the area immediately to the north of this block, the soil consists of a deep, fibrous peat of little value for crop production. Much of the large block classified as rough and stony nonagricultural land lies within the Boundary Waters Canoe Area of the Superior National Forest.

LAND-CAPABILITY CLASSES

Several years ago the Soil Conservation Service of the United States Department of Agriculture devised a land-capability classification which has received general acceptance and is now widely used. Its purpose is to show the uses for which particular pieces of land are best suited on the basis of their soil properties, topography, and environment. Eight classes of land are used, with the risks of soil damage or with limitations in use becoming progressively greater from Class I to Class VIII.

Classes I through IV are capable under good management of producing the common cultivated field plants and pasture plants, and also the adapted forest and range plants. Lands in Classes V through VII are suited to the growth of adapted forest and range plants. Lands in Class VIII are not suited for cultivation, grazing, or forestry, but may be used for wildlife, recreation, or protection of water supplies.

The Soil Conservation Service has compiled information on land capability and present land use for the entire state with the exception of urban and built-up land and federally owned land. The excepted lands constitute 10 per cent of the total area of the state. Two-thirds of them are in the northeastern region, where federal ownership is concentrated, and nearly a fourth is in the southern region, where urban and built-up lands are more prominent than elsewhere. For the 90 per cent of the state included in the classification, the information on land capability and present use was obtained from soil and land-use surveys of randomized sample areas selected according to standard statistical procedures, with the resulting data expanded to represent the unsurveyed land.

Tables 1 and 2 show the distribution of land-capability classes by regions. Tables 3 and 4 show the current use (1959) of the several land-capability classes. From this basic information the following conclusions can be drawn:

1. For the state as a whole, 73 per cent of the land is classified as suitable for cultivation. This figure is not likely to increase much, since most of the area suitable for cultivation has probably already been classified.

Table 1. Distribution of Each Land Capability Class by Regions, 1959.

CLASS	TOTAL AREA M ACRES	NORTH- EASTERN	NORTH- CENTRAL WESTERN SOUTHERN			STATE
			PER CENT OF EACH CLASS BY REGIONS			
I	1,750	4	5	2	89	100
II	17,366	12	11	15	62	100
III	10,666	29	14	20	37	100
IV	7,909	54	19	15	12	100
I-IV	37,691	26	13	16	45	100
V	3,300	75	11	8	6	100
VI	1,205	34	16	6	44	100
VII	3,094	61	11	1	27	100
VIII	839	59	21	1	19	100
V-VIII	8,438	62	13	5	20	100
I-VIII	46,129	32	13	14	41	100
Unclassified ¹	5,077	66	6	5	23	100
Total	51,206	36	12	13	39	100

¹ Includes 2,979 M acres of federally owned land (58 per cent), 1,767 M acres of urban and built-up land (35 per cent), 290 M acres in water areas of less than 40 acres (6 per cent), and 41 M acres the use of which was determined but which was not classified by land capability class (1 per cent).

Source: Soil Conservation Service, St. Paul Office (unpublished data).

Table 2. Distribution of Land Capability Classes Within Each Region, 1959.

CLASS	TOTAL AREA M ACRES	NORTH- EASTERN	NORTH- WESTERN SOUTHERN				STATE
			CENTRAL PER CENT OF REGION IN EACH CLASS	WESTERN	SOUTHERN	STATE	
I	1,750	*	1	*	8	3	
II	17,366	12	31	39	53	34	
III	10,666	17	23	33	19	21	
IV	7,909	24	23	18	5	15	
I-IV	37,691	53	78	90	85	73	
V	3,300	14	6	4	1	7	
VI	1,205	2	3	1	3	2	
VII	3,094	10	5	1	4	6	
VIII	839	3	3	*	1	2	
V-VIII	8,438	29	17	6	9	17	
I-VIII	46,129	82	95	96	94	90	
Unclassified ¹	5,077	18	5	4	6	10	
Total	51,206	100	100	100	100	100	

* Less than 0.5 per cent.

¹ See Table 1.

Source: Soil Conservation Service, St. Paul Office (unpublished data).

2. Nearly half of the area suitable for cultivation lies in the southern region. Of the two best land-capability classes (I and II), 64 per cent lies in that region.

3. Although Minnesota is regarded as a good agricultural state, only 3 per cent of its total area is rated as very good cultivable land (Class I), and 90 per cent of this class is in the southern region.

4. Of the land classified as unsuitable for cultivation (Classes V through VIII), 62 per cent is in the northeastern region. This figure would be still larger if the entire region had been classified, since most of the 2,839,413 acres of federally owned land in the region is in this category.

5. Only 2 per cent of the state has been classified as unsuitable for cultivation, grazing, or forestry, but as suitable for wildlife, recreation, or protection of water supplies (Class VIII). Here again, the figure will be increased with more complete classification of the northeastern region, where most of the land in this class is located.

6. Nearly half of the state is currently in cropland, with 98 per cent of the cropland area in Classes I to IV. By classes, the area in crops varies from 0 per cent in Class VIII and 2 per cent in Class V to 86 per cent in Class I.

Table 3. Distribution of Each Land Capability Class by Uses, 1959.

CLASS	TOTAL AREA M ACRES	CROP- LAND	PASTURE LAND	WOOD- LAND	OTHER LAND	TOTAL
I	1,750	86	4	5	5	100
II	17,366	74	7	15	4	100
III	10,666	50	11	31	8	100
IV	7,909	23	7	58	12	100
I-IV	37,691	57	8	28	7	100
V	3,300	2	9	77	12	100
VI	1,205	14	24	53	9	100
VII	3,094	7	9	80	4	100
VIII	839	-	*	4	96	100
V-VIII	8,438	6	10	67	17	100
I-VIII	46,129	48	8	35	9	100

Note. Table does not include 5,077 M acres of unclassified land.

* Less than 0.5 per cent.

Source: Soil Conservation Service, St. Paul Office (unpublished data).

Table 4. Distribution of Land Capability Classes Within Each Use, 1959.

CLASS	TOTAL AREA M ACRES	CROP- LAND	PASTURE LAND	WOOD- LAND	OTHER LAND	TOTAL
I	1,750	7	1	1	2	4
II	17,366	59	33	16	16	38
III	10,666	24	30	20	22	23
IV	7,909	8	14	28	23	17
I-IV	37,691	98	78	65	63	82
V	3,300	*	7	16	11	7
VI	1,205	1	8	4	3	2
VII	3,094	1	7	15	3	7
VIII	839	-	*	*	20	2
V-VIII	8,438	2	22	35	37	18
I-VIII	46,129	100	100	100	100	100

Note. Table does not include 5,077 M acres of unclassified land.

* Less than 0.5 per cent.

Source: Soil Conservation Service, St. Paul Office (unpublished data).

7. Only about 8 per cent of the state is classed as pasture land, which is about an equally characteristic use of land suitable and not suitable for cultivation.

8. Of the area classified, 35 per cent is in woodland. For the entire area of the state the figure would be higher because much of the 2,882,835 acres of unclassified federal land in the northeastern and central regions consists of woodlands. Two-thirds of the area classified as not suitable for cultivation is in woodland as against 28 per cent of the area classified as suitable for cultivation. In Classes IV to VII the percentage of woodland runs from 53 per cent to 80 per cent of the area in each class.

9. Other land — that not used for crops, pasture, or woods — constitutes 9 per cent of the area classified. This may be an underestimate for the state as a whole, since the unclassified area probably contains considerable land in this category. As would be expected, most of the land in Class VIII is devoted to "other uses."

10. On the whole, there seems to be a fairly close correspondence between the present use of the land and that which would be indicated as desirable by its land-capability class. Some expansion of cropland at the expense of woodland would apparently be feasible in Classes II, III, and IV if and when economic conditions warrant.

Tables 5 and 6 show the distribution of present land uses by regions. The concentration of cropland and pasture land in the southern region, and of woodland in the northeastern region, is particularly striking.

Table 5. Distribution of Regions by Land Uses, 1959.

Use	NORTHEASTERN	CENTRAL	NORTHWESTERN	SOUTHERN
	PER CENT			
Cropland	8	43	66	74
Pasture Land	2	13	5	13
Woodland	82	31	16	6
Other	8	13	13	7
	100	100	100	100

Source: Soil Conservation Service, St. Paul Office (unpublished data).

Table 6. Distribution of Land Uses by Regions, 1959.

REGION	CROPLAND	PASTURE LAND	WOODLAND	OTHER USES
	PER CENT			
Northeastern	5	8	75	30
Central	12	20	12	19
Northwestern	19	9	6	20
Southern	64	63	7	31
	100	100	100	100

Source: Soil Conservation Service, St. Paul Office (unpublished data).

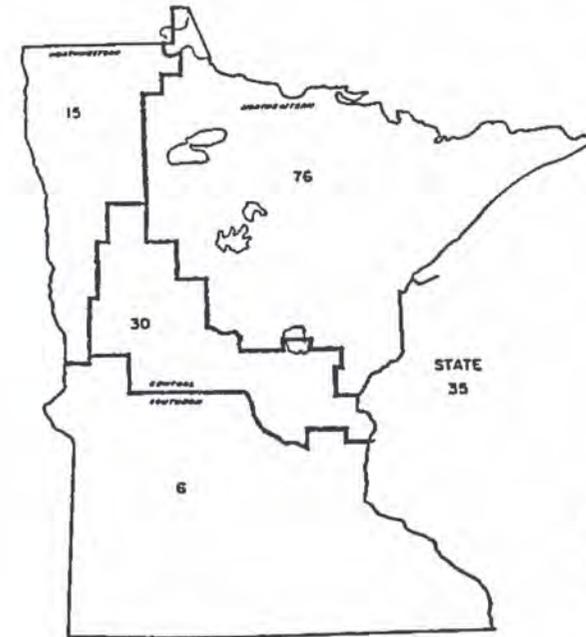


Figure 2. Percentage of total land area in each region classified as commercial forest land, 1953.



Figure 3. Percentage of commercial forest area of state by regions, 1953.

MINNESOTA LANDS

Nearly two-thirds of all the cropland in the state is in the southern region, where 74 per cent of the classified area of the region is devoted to crops. Figures for the northwestern region are similar but less striking. On the other hand, 75 per cent of the woodland in the area which has been classified is in the northeastern region, where 82 per cent of the region is in woods. The central region has a more balanced distribution of uses than the other regions, but croplands and woodlands are decidedly predominant.

FORESTS

Minnesota's original forests are estimated to have covered about 31.5 million acres, or 62 per cent of its land area. They occurred in an almost solid body except in the rolling prairies in the southwestern part of the state and in the flat, open country of the valley of the Red River. In the southeastern part of the state, the "Big Woods" consisted almost entirely of hardwoods with a wide variety of species. In the central and northeastern parts of the state, softwoods predominated, but later fires greatly increased the area of jack pine and so extended the area occupied by aspen as to make it the largest single forest type in Minnesota.

The area of commercial forest land is shown by regions and in part by counties in Table 7 and in Figures 2 and 3. Detailed figures are not

Table 7. Commercial Forest Lands by Regions and Counties, 1953.

REGION AND COUNTY	M ACRES	COMMERCIAL FOREST AREA	
		PER CENT OF TOTAL LAND AREA IN COUNTY	PER CENT OF TOTAL FOREST AREA IN STATE
Northeastern			
Aitkin	894	77	5
Beltrami	1,220	76	7
Carlton	369	67	2
Cass	1,018	78	6
Clearwater	380	59	2
Cook	723	80	4
Crow Wing	459	72	3
Hubbard	441	74	2
Itasca	1,458	86	8
Koochiching	1,522	76	8
Lake	1,138	83	6
Lake of the Woods	555	66	3
Pine	526	58	3
St. Louis	3,234	80	18
	13,937	76	77

Table 7 (continued)

	COMMERCIAL FOREST AREA		
	PER CENT OF TOTAL LAND AREA IN COUNTY	PER CENT OF TOTAL FOREST AREA IN STATE	
Central			
Becker	348	41	2
Benton	49	19	*
Chisago	68	25	*
Douglas	42	10	*
Isanti	65	23	*
Kanabec	166	49	1
Mahnomen	145	39	1
Mille Lacs	171	47	1
Morrison	243	33	1
Otter Tail	244	19	1
Sherburne	58	21	*
Todd	165	27	1
Wadena	141	41	1
	1,905	30	11
Northwestern			
Clay	19	3	*
Kittson	104	14	1
Marshall	226	20	1
Norman	41	7	*
Pennington	63	16	*
Polk	108	8	*
Red Lake	33	19	*
Roseau	370	34	2
Wilkin	3	1	*
	987	15	5
Southern	1,269	6	7
State	18,098	35	100

* Less than 0.5 per cent.

Source: Lake States Forest Experiment Station (unpublished data).

given by counties for the southern region because of the small area of commercial forest land in that region. In none of the southern counties does the forest area reach 0.7 per cent of the total forest area of the state. In 27 of these counties the forest area constitutes less than 5 per cent of the total land area; in 11 it runs between 5 and 10 per cent; in 12 between 10 and 20 per cent; in 1 (Winona County) between 20 and 30 per cent; and in only 1 (Houston County) does it exceed 30 per cent.

The concentration of the commercial forest area in the northeastern region, with 77 per cent of the total, is particularly striking. In no county

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Table 8. Net Volume of Live Sawtimber and Growing Stock on Commercial Forest Land by Species, 1953.

	SAWTIMBER		GROWING STOCK	
	MILLION BD. FT.	PER CENT	MILLION CU. FT.	PER CENT
Softwoods				
White and Norway pine	1,718	14	455	6
Jack pine	1,420	11	771	11
Spruce and fir	1,340	11	1,172	16
Other	561	4	431	6
	<u>5,039</u>	<u>40</u>	<u>2,829</u>	<u>39</u>
Hardwoods				
Oak	1,932	15	770	11
Aspen	1,716	14	1,812	25
Ash, basswood, and black walnut	1,308	11	607	8
Birch and maple	823	3	600	2
Other	1,720	17	617	15
	<u>7,499</u>	<u>60</u>	<u>4,405</u>	<u>61</u>
All species	<u>12,538</u>	<u>100</u>	<u>7,235</u>	<u>100</u>

Source: "Minnesota's Forest Resources" (39).

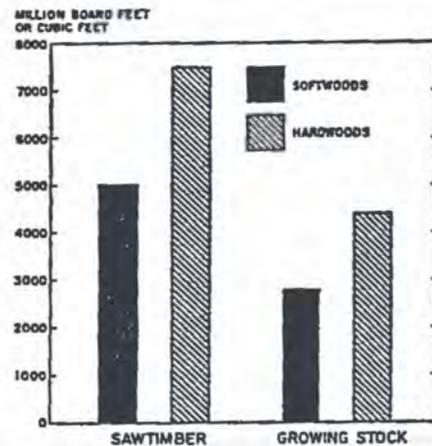


Figure 4. Net volume of live sawtimber and growing stock on commercial forest land by softwoods and hardwoods, 1953.

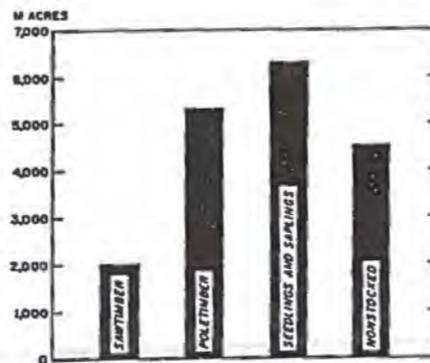


Figure 5. Distribution of commercial forest area by stand-size classes, 1953.

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in that region is the forest area less than half of the total land area, and in only two counties is it less than 60 per cent (Pine County with 58 per cent and Clearwater County with 59 per cent). On the other hand, in no county in the central region does the area of commercial forest land reach half of the total land area, and in the northwestern region the maximum is 34 per cent in Roseau County.

The total area of commercial forest land in the state is 18,097,600 acres, or 35 per cent of the land area. These figures compare with 19,492,600 acres and 38 per cent for cropland harvested in 1954.

The net volume of live sawtimber and of growing stock is shown by species in Table 8 and Figure 4. The preponderance of hardwoods is noticeable. With the exception of aspen, these occur largely in the southern part of the state, while the great bulk of the softwoods is in the northern part. In addition to the figures shown in the table, there was an estimated volume of 1,704 million cubic feet of salvable material in the form of cull trees, dead trees, and hardwood limbs.

The relative areas occupied by stands of different sizes are shown in Table 9 and Figure 5. Stands of saplings and seedlings comprise the largest area, with stands of poletimber next. Sawtimber stands occupy only about a tenth of the total area, and the trees of which they are composed are for the most part small and of rather poor quality. Nonstocked areas constitute a fourth of the total forest area.

Table 9. Distribution of Commercial Forest Area by Stand-Size Classes, 1953.

STAND-SIZE CLASS	M ACRES	PER CENT
Sawtimber	2,017	11
Poletimber	5,281	29
Saplings and seedlings	6,317	35
Nonstocked	4,483	25
	<u>18,098</u>	<u>100</u>

Source: "Minnesota's Forest Resources" (39).

"Allowable cut" is defined by the Forest Service as "the volume of merchantable live sawtimber and poletimber that can be cut during a given period while building up or maintaining sufficient growing stock to meet specified growth goals." In Minnesota it is considerably less than the annual growth because of the need to build up depleted stands (39). However, in the case of jack pine, which is characterized by many over-mature stands, it is nearly twice the annual growth. The great bulk both of the annual growth and of the estimated allowable cut, particularly of softwoods, is in the northern counties.

The extent to which the actual cut falls short of the allowable cut is striking. The largest discrepancy occurs with hardwood sawtimber, but

it is also pronounced with hardwood growing stock. This situation is due primarily to the influence of aspen, which has 55 per cent of the annual growth and 59 per cent of the allowable cut of all hardwood growing stock, with an actual cut equal to only 49 per cent of the allowable cut. Quite a different situation exists with the softwoods most in demand for pulpwood. For growing stock of these species the percentage of actual cut to estimated allowable cut runs as follows:

White and Norway pine	87 per cent
Jack pine	85 per cent
Spruce	94 per cent
Balsam fir	74 per cent

In many localities adjacent to the mills, the actual cut of softwood pulp species exceeds the annual growth.

The economic implications of the relationships between growth, allowable cut, and actual cut will be discussed more fully in Part IV, "Problems and Prospects," in connection with expansion of markets.

WATER

Minnesota is well blessed with water resources. Surface waters occupy 7 per cent of the total area of the state, and there are extensive underground supplies. An inventory of its many streams and lakes now in process shows that the number of lakes is actually much larger than the 10,000 claimed on the state's automobile license plates.

Surface and underground water supplies are generally regarded as adequate to meet indefinitely the vital needs for domestic and municipal supplies, for industrial uses, for agriculture, and for navigation, power, and recreation, including the production of waterfowl. Nevertheless, unless these resources are carefully managed, future shortages at some places and for some purposes are not unlikely. Precipitation is relatively low, varying from about 20 inches in the western part of the state to about 27 inches in the eastern part; soils for the most part are rather thin; underground storage capacity is not fully known; and lying as it does at the "top of the continent" Minnesota is 100 per cent an exporter of water.

Wise use of the state's water resources requires more knowledge than is now available, particularly of underground supplies, widespread application of that knowledge, and a sound policy of water appropriation and use. Such a policy is embodied in the following declaration by the legislature:

"In order to conserve and utilize the water resources of the state in the best interests of the people of the state, and for the purpose of promoting the public health, safety and welfare, it is hereby declared to be the policy of the state:

"(1) Subject to existing rights all waters in streams and lakes within the state which are capable of substantial beneficial public use are public

waters subject to the control of the state. The public character of water shall not be determined exclusively by the proprietorship of the underlying, overlying, or surrounding land or on whether it is a body or stream of water which was navigable in fact or susceptible of being used as a highway for commerce at the time this state was admitted to the union. This section is not intended to affect determination of the ownership of the beds of lakes or streams.

"(2) The state, to the extent provided by law from time to time, shall control the appropriation and use of surface and underground waters of the state.

"(3) The state shall control and supervise, so far as practicable, the construction, reconstruction, repair, removal, or abandonment of dams, reservoirs, and all control structures in any of the public waters of the state."

Minnesota is unique in having a water appropriation system which requires one to obtain a written permit from the Commissioner of Conservation before:

1. Performing any work in the beds of lakes or streams.
2. Appropriating water, surface or underground, except for domestic use serving at any time less than 25 persons.

A continuing program for the collection of basic data relating to both surface and underground water resources is carried on by the Division of Waters of the Minnesota Department of Conservation. Continuation of this program and completion of the topographic mapping of the state are of paramount importance.

Closely related to the wise use of the waters of the state is the application of measures on agricultural lands to control erosion by the adoption of soil-holding farm practices and structural methods.

Prevention and control of water pollution, regulation of streamflow, alleviation of floods, preservation of the natural beauty of lakes and streams, and maintenance of wildlife habitat are essential features of a broad program for assuring an increasingly prosperous future for the state on the basis of wise use of its natural resources.

WILDLIFE

Wildlife in the form of fur-bearing animals constituted Minnesota's first economic asset. Although trapping now occupies a minor place in its economy, the importance of wildlife as a whole has increased rather than decreased. Today the varied and abundant supplies of mammals, birds, and fish provide pleasure for innumerable hunters, fishermen, and nature lovers, and profit for those who cater to their needs. In many ways the state's wildlife resources add to its attractiveness as a mecca for the rapidly increasing numbers of people seeking outdoor recreation.

MINERALS

Although Minnesota contains a wide variety of minerals, iron ore overshadows all the rest. From 1884 when the first ore was shipped from the Vermilion Range, iron has occupied a prominent place in the economic life of the state, and particularly of the three counties with the largest deposits of ore — St. Louis, Itasca, and Crow Wing. In spite of the fact that 2.35 billion tons of ore had been shipped between 1884 and 1957, estimated reserves (including stockpiles) in 1957 were as follows (197):

	M GROSS TONS	PER CENT
Mesabi Range	724,991	92
Vermilion Range	9,944	1
Cuyuna Range	53,599	7
Fillmore County District	1,243	*
	<hr/> 789,777	<hr/> 100

* Less than 0.5 per cent.

These figures compare with estimated reserves for the same year in Michigan of 154,209 M tons and in Wisconsin of 8,000 M tons.

Assessed valuations of iron ore in the ground (excluding stockpiles) on May 1, 1957, totaled \$140,327,670, of which 96 per cent was in the Mesabi Range, 3 per cent in the Vermilion Range, 1 per cent in the Cuyuna Range, and 0.3 per cent in the Fillmore County District. Values per ton ranged from 39 cents in the Cuyuna Range to 38.5 cents in the Vermilion Range, with an average of 18.4 cents.

Among the other mineral resources of the state, taconite (a low-grade iron ore) is undoubtedly the most important. Reserves have been estimated at from 4 to 7 billion tons, depending on the estimator's evaluation of the economic cutoff grade. Sand, gravel, limestone, and granite are important locally, and a variety of other minerals are produced in small amounts.

RESOURCES AND THE DEVELOPMENT OF THE STATE

PRIOR TO STATEHOOD *

For nearly two centuries after the first white men visited what is now Minnesota, exploitation of its natural resources was limited to fur-bearing animals. These were the source of large profits for the Hudson's Bay Company and the Northwest Company, and after the War of 1812 for John Jacob Astor's American Fur Company. The French planted no colony on Minnesota soil, and no attempt at permanent settlement was made during British dominion.

Following the Revolution, the United States assumed military possession of the territory, but otherwise the American government took little interest in it. Until well into the nineteenth century trappers and traders continued to be practically its sole occupants. The region was inaccessible and not open for settlement until treaties with the Indians should liquidate their right of occupancy.

During the 1820's a few settlers established themselves at two widely separated sites — in the valley of the Red River near Pembina, and in the southeastern part of the state near the junction of the Minnesota and Mississippi rivers. Work on the construction of Fort Snelling was started in 1820 on a site which had been acquired from the Indians by Lieutenant Zebulon M. Pike in 1807. A sawmill to supply timber for the fort was erected and began operations in 1822. Then came a few settlers who squatted on and near the military reservation.

In 1837, the Chippewa and Sioux Indians for the first time ceded their right of occupancy to any considerable area and thus opened the land to settlement and other use by the white man. The cession included the triangle between the St. Croix and the Mississippi rivers. In addition to much potential farm land, it contained immense quantities of valuable timber.

Before the land could be legally settled, logged, or patented, it had to be surveyed. This took time, but the delay did not prevent its use. Settlers squatted, lumbermen harvested the timber, and the government did nothing to stop them. In 1839 the first sawmill on the St. Croix River was put into operation at Marine, some 20 miles below the Falls of the St. Croix. In 1844 lumber manufacture was begun at Stillwater, and in 1848 at the Falls of St. Anthony.

By the time the first sale of public land took place on August 14, 1848, at the government land office at St. Croix Falls, the population of the territory had increased from a few hundred to a few thousand people. At that sale, 3,326 acres of public land were sold at \$1.25 per acre, including the town sites of Stillwater, St. Paul, and St. Anthony. One enterprising purchaser, Franklin Steele, succeeded in acquiring title to all lands abutting on and adjacent to the Falls of St. Anthony — indeed a rich prize.

An influx of settlers followed (1) passage of the Organic Act of March 3, 1849, which provided for organization of the Territory of Minnesota, and (2) negotiation with the Sioux Indians of the treaties of Traverse des Sioux and of Mendota, which yielded their right of occupancy to the immense "Suland" in southern Minnesota. Squatting was also encouraged by passage in 1854 of an act permitting the entry of unsurveyed public land under the preemption act. During the 1850's agriculture, which had previously been of minor importance, expanded so rapidly that it became the dominant activity in the territory. The production of wheat,

for example, increased from 1,400 bushels in 1849 to 2,187,000 bushels in 1859. By the end of the first decade of territorial status, Minnesota, which for a while had been unable to meet its own needs for food, had become an exporter of agricultural products.

The expansion of agriculture was accompanied by wild speculation in town sites. According to Folwell, "It is safe to say that in the three years from 1855 to 1857, inclusive, at least seven hundred towns were platted into more than three hundred thousand lots — enough for one and a half million people. . . The boom . . . had its parallel in all our western states, but it may be doubted whether its violence and rate were elsewhere quite equaled. The whole urban population was more or less infected with the virus of speculation. Fortunes seemed to be dropping from the skies, and those who would not reach and gather them were but stupid and sluggards."

The boom came to an abrupt end with the panic which hit the entire country in the fall of 1857. "Everybody was in debt, and the territory was literally emptied of money. Business ceased, banks closed their doors, merchants suspended or assigned. . . City lots became virtually valueless. Thousands who had believed themselves wealthy soon found themselves in actual bodily need . . . The historian of St. Paul, J. Fletcher Williams, then resident, is authority for the statement that the population of that city fell off almost fifty per cent."

As a result of the panic, land values were put on a more solid foundation. This was particularly true of urban property, where speculation had reached far dizzier heights than with agricultural lands. Actually, the panic did little or nothing to slow down the expansion of agriculture and its net effect on the economy of the state was healthy, although temporarily decidedly painful. With Minnesota's admission to the Union on May 11, 1858, it was ready to enjoy a new period of prosperity in which its natural resources played a leading part.

FROM 1858 TO 1900

Occupation of the northern part of the state was made possible by a series of treaties with the Chippewa Indians running from 1854 to 1866. Although those of 1854 and 1855 were negotiated during the territorial period, they had little influence on the actual use of the land until after statehood. The lands involved were primarily valuable for forests and minerals.

Agriculture continued to expand at an accelerated pace. In 1859 only 5 per cent of the land area was in farms (Table 10). By 1879 this figure had risen to 26 per cent, and by 1899 to 51 per cent. Similar increases took place in the amount of improved land. In 1859 improved land constituted only 20 per cent of all land in farms, but by 1879 it had grown to 64 per cent and by 1899 to 70 per cent. Improved land per farm in these years was 30, 78, and 119 acres, respectively.

Table 10. Land in Farms, 1849 to 1954.

YEAR	NO. OF FARMS	LAND IN FARMS		IMPROVED LAND		AVERAGE VALUE	
		M ACRES	PER CENT	M ACRES	PER CENT	AVERAGE SIZE OF FARM—ACRES	OF LAND AND BUILDINGS PER ACRE
1849	157	29	*	5	17	184	\$ 5.61
1859	18,181	2,712	5	556	20	149	10.14
1869	46,500	6,484	12	2,322	36	139	12.07
1879	92,386	13,403	26	7,247	54	145	14.45
1889	116,851	18,664	36	11,128	60	160	18.22
1899	154,659	26,248	51	18,443	70	170	30.04
1909	156,137	27,676	54	19,644	71	177	53.35
1919	178,478	30,222	58	21,482	71	169	109.23
1929	185,255	30,913	60	21,740	70	167	68.74
1939	197,351	32,607	64	22,974	70	165	44.26
1949	179,101	32,883	64	22,461	68	184	84.46
1954	165,225	32,285	63	22,193	69	195	105.58

* Less than 0.5 per cent.

Source: Bureau of the Census.

During the first half of this period, settlement was confined largely to the southeastern portion of the state, and in 1880 the bulk of the population was still east and south of Stearns County (53). Immigrants had been hesitant to settle on the prairies because of lack of transportation, lack of fuel, and the common belief that a soil devoid of trees could not be fertile. However, the rapid expansion of railroad construction during the 1870's and the favorable experiences of the pioneers who had ventured to try their luck on the prairies changed this situation, and settlement of the prairies proceeded apace during the latter half of the period. Scattered settlement was also taking place in the northern part of the state, particularly in the Red River Valley.

Wheat production dominated farming during most of this period. The percentage of tilled land devoted to wheat rose from 53 per cent in 1860 to 60 per cent in 1868, to 66 per cent in 1874, and to 69 per cent in 1878, when it reached its final culmination (128). The change to more diversified farming was particularly prominent in the older agricultural areas in the southeast. The state as a whole, however, continued for many years to hold its preeminence as a wheat producer. In 1889 and 1899 it ranked first among the states in wheat production, and the total state production in the latter year was nearly three times what it had been twenty years earlier. More drastic changes came after the close of the century, when wheat ceased to be a major crop except in the Red River Valley.

Sheep raising increased markedly during the early 1860's to meet the demand for wool created by the War Between the States, but fell off markedly after the close of hostilities. The first cheese factory in the state was established in 1868, and the first creamery in 1876, but the dairy industry did not really hit its stride until the 1880's. The 63 creameries and 46 cheese factories in operation in 1885 foreshadowed later developments which were to make Minnesota one of the leading dairy states in the country.

Logging of the pine lands in the northern part of the state increased steadily during the latter half of the century. Treaties with the Chipewya Indians of 1854 and 1855 had liquidated the "Indian title" to an enormous area of land in northeastern Minnesota, including some of the best stands of pine at the headwaters of the Mississippi and Crow Wing rivers. Loggers were even less hesitant than farmers about helping themselves to the resources of federal lands (and later of state lands) to which they had no legal right. The timber was clearly "inexhaustible," it was urgently needed for the development of Minnesota and other states, and its harvesting would clear the way for agriculture. Some of the repercussions caused by these operations in later years when it became evident that the timber was not inexhaustible, when most of the cutover land proved to be unsuitable for agriculture, and when the ethics of the settlements caught up with the ethics of the frontier, are discussed in a subsequent chapter.

For present purposes the point to be emphasized is that the forests of Minnesota were one of the most potent factors in its economic development during the latter half of the last century. They provided a cheap and ample supply of a raw material that was essential for the construction of homes, factories, and other buildings; and they offered welcome opportunity for the useful employment of labor and capital. The phenomenal growth of the logging and milling industries during the period under consideration, when the production of lumber increased nearly ten times in thirty years from an already substantial base, is shown in Table 11 and Figure 6. The significance of the sharp reduction in lumber production after 1899, with respect both to the state as a whole and more particularly the northeastern counties, will be considered later.

One other point which should be noted is that there was no attempt at this time to make logging and sawmilling permanent industries. In other words, in Minnesota, as elsewhere in the country, there was no interest in practicing forestry on either private or public lands until well after the turn of the century. If there should be an end to the timber, as it became increasingly evident there would be, there was always more elsewhere — in the South and in the West. Even if management for continuous production were desirable, it would not pay. Moreover, according to prevailing opinion, the land was both suitable and needed

for agriculture, and fires in the slashings left after logging would help to clear it for that purpose. Again, the consequences which followed liquidation of a renewable resource with no attempt at its replacement will be considered later.

Table 11. Reported Production of Lumber, 1869 to 1954.

YEAR	MILLION BOARD FEET			PER CENT OF PRODUCTION IN	
	HARDWOODS	SOFTWOODS	TOTAL	LAKE STATES	UNITED STATES
1869	7	235	242	7	2
1879	25	539	564	9	3
1889	75	1,235	1,310	16	5
1899	63	2,280	2,342	27	7
1909	82	1,480	1,562	29	4
1919	62	637	700	26	2
1929	51	306	357	20	1
1939	42	69	111	14	*
1949	89	68	157	18	*
1954	73	104	177	18	*

* Less than 0.5 per cent.

Source: Bureau of the Census.

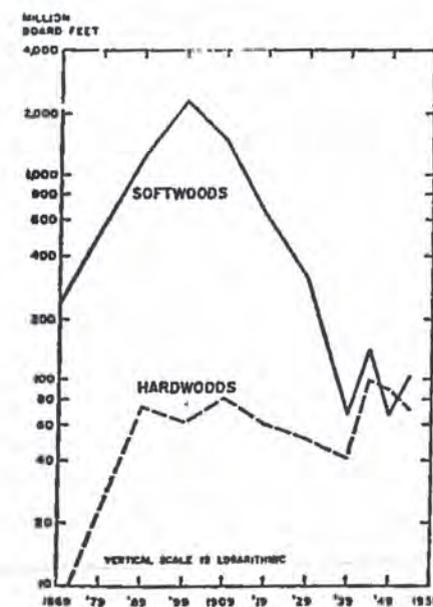


Figure 6. Reported production of lumber, 1869-1954.

Minnesota's fabulous wealth in iron ore lay long undiscovered and untapped. Its development was preceded by nearly twenty years by a minor gold rush to Vermilion Lake, where the precious metal had been discovered in 1865. The *Saint Paul Pioneer* reported "a flutter in our financial market second to no excitement ever witnessed in St. Paul." By May, 1866, there were about three hundred people at the lake and a sawmill and fourteen houses had been erected. Shafts were sunk into quartz veins, mining works were constructed, and three stamp mills were erected. Results were disappointing, the craze was short-lived, and "Winston" became a ghost town.

That iron ore existed in the Vermilion Range had been known since about the middle of the century. In 1865, George R. Stuntz while hunting for gold found a rich outcrop of hematite near Vermilion Lake. During the next decade explorations by various interested parties, including a survey in 1878 by the state geologist, Professor Newton H. Winchell, confirmed the existence of iron ore suitable for steel production.

The Duluth and Iron Range Railroad from Tower to Two Harbors was completed in 1884, and the first shipment of ore from the Vermilion Range was made in that same year — 62,124 tons from the Soudan Mine. The first shipment from the Ely district — 54,612 tons from the Chandler Mine — took place in 1888.

Another state geologist, Henry H. Eames, in 1866, was the first to mention the occurrence of iron ore on the Mesabi Range. There were subsequent sporadic explorations, in which the Merritt brothers (Paul De Kruij's "Seven Iron Men") took a prominent part from 1884 on. Not until 1890, however, did Captain J. A. Nichols, working under the direction of Lon and Alfred Merritt, come across the first extensive body of soft ore to be discovered on the range.

As in the case of the Vermilion Range, a railroad was necessary to get the ore to market. This was supplied by the Duluth, Missabe, and Northern Railway, which was built from the Mountain Iron Mine to Stony Brook (now Brookston) to connect with the Duluth and Winnipeg Railroad, which had its eastern terminal at Superior. The first shipment of ore from the Mesabi Range — 4,245 tons — was made from the Mountain Iron Mine on October 17, 1892.

From then on, shipments from both ranges increased rapidly. By the end of 1900 they totaled 46,581,167 tons — 15,191,279 from the Vermilion Range and 31,389,888 from the Mesabi Range. Minnesota had become the largest producer of iron ore in the country.

In the field of manufacturing, the lumber industry took an early lead. In 1870 the sawmills employed 2,952 persons and turned out a product worth \$4,299,162. Its nearest competitor, flour manufacture, employed 790 persons and turned out a product worth \$1,289,665. By 1880, as a result of the expansion of agriculture during the preceding decade, the

position of the two industries was reversed. The lumber industry put out a product valued at \$7,366,038, while that of the flour-milling industry was valued at \$41,519,004. Together, the two industries accounted for nearly two-thirds of the value of all products manufactured in that year.

During the next twenty years a large number of other industries became established, but flour and lumber continued to be the giants in the manufacturing field. Table 12 shows that in 1900, with only 8 per cent of the number of establishments engaged in manufacturing, they accounted for 46 per cent of the invested capital and 49 per cent of the value of the products turned out. Both industries had their center at the "Twin Cities," St. Paul and Minneapolis, which had developed into a metropolis of major importance. A secondary center of manufacturing existed at Duluth, with a scattering of relatively small manufacturing plants elsewhere in the state.

Table 12. Comparison of Major Manufacturing Industries in Minnesota, 1900.

INDUSTRY	ESTABLISHMENTS No.	CAPITAL INVESTED		WAGES AND SALARIES		VALUE OF PRODUCTS	
		PER CENT	MIL. DOL.	PER CENT	MIL. DOL.	PER CENT	MIL. DOL.
Flour	512	4	24.1	15	3.1	7	83.9
Lumber	438	4	52.1	31	7.9	19	43.6
Other	10,174	92	89.6	54	31.0	74	135.2
	11,114	100	165.8	100	42.0	100	262.7

Source: Bureau of the Census.

In summary, Minnesota during the first forty years of its existence as a state made conspicuous progress in utilizing its abundant natural resources for the benefit of a population which expanded from 172,023 persons to 1,751,391 persons — an increase of approximately 900 per cent. The total land in farms and the improved land in farms both constituted well over 80 per cent of their present areas. The lumber industry had reached a peak of production of 2,342 million board feet, which constituted 7 per cent of all the lumber produced in the United States in 1899. Mining was going forward at a rate which had already made Minnesota the leading state in the country in the production of iron ore. Manufacturing, still dominated by flour milling and sawmilling, was steadily increasing and becoming more diversified. The one major use of the state's natural resources which still lay in the future was recreation.

FROM 1900 TO 1932

During this (and the following) period, interest in the relation of natural resources to the development of the state centers in the fourteen

northeastern counties. Elsewhere progress continued to be steady and permanent but not spectacular.

Agricultural expansion slowed down but did not stop. Outside of the northeastern counties, the percentage of all land in farms increased from 76 per cent in 1899 to 88 per cent in 1935, since when it has remained practically constant. Virtually no change took place in the percentage of improved land in farms or in the size of the average farm. (Table 13.)

Sawmill products decreased rapidly and drastically. Lumber production fell off in 1909, 1919, and 1929 to 67 per cent, 30 per cent, and 15 per cent of the 1899 maximum. In 1932, at the bottom of the depression, it was down to 2.6 per cent. By 1917 Minneapolis had ceased to be an important lumber manufacturing center. The Duluth district reached its peak in 1903, only to have a decrease of two-thirds in its lumber cut within the next six years.

The loss of its sawmills was of course felt in Minneapolis, but the loss was soon offset by the establishment of additional flour mills, the advent of new industries, and the steady increase in the number of persons engaged in trade and service. In general, the decline of the lumber industry had little effect on the economy of the state outside of the heavily forested region. This was particularly true in the southern counties, where farming was the predominant activity.

On the other hand, the disappearance of the forests and of the sawmills which they supported had a serious impact on the economy of the northern counties. Duluth, Virginia, Grand Rapids, and other range towns had mining, which was expanding rapidly on the Mesabi Range during this period, to take up at least part of the slack. But other northern cities, villages, and rural areas felt the full force of decreased payrolls, shrinking markets for farm produce, and lower tax revenues.

One favorable development during this period was the increase in the manufacture of pulp and paper. A few small paper mills existed before 1900, notably at Minneapolis, Little Falls, and Fergus Falls, but these made small use of wood. By 1905, however, pulp mills were taking close to 30,000 cords a year, and by 1930 their annual consumption had reached 230,000 cords. Additional volumes of pulpwood were being logged near the north shore of Lake Superior for Wisconsin mills. This activity in the woods and in the few cities with pulp mills softened somewhat the shock of vanishing sawmills, but far from completely or universally. More important, it foreshadowed a more hopeful future for the region provided forest resources could be restored and put under management.

For many years it was vainly hoped that farming would replace logging and sawmilling. To this end, the cutting of the timber was followed by an aggressive campaign to get settlers on the cutover lands. For years, the landowners and the railroads engaged in an extensive

Table 13. Comparative Statistics on Land in Farms in Fourteen Northeastern Counties and Rest of State, 1899-1929.

	1899	1909	1919	1929
Per Cent of Number of Farms in State				
11 Forest Counties	4	6	8	9
3 Mineral Counties	1	3	4	5
—	—	—	—	—
14 Northeastern Counties	5	9	12	14
Rest of State	95	91	88	86
—	—	—	—	—
Entire State	100	100	100	100
Per Cent of Land in Farms				
11 Forest Counties	6	11	17	18
3 Mineral Counties	4	8	11	14
—	—	—	—	—
14 Northeastern Counties	5	10	15	16
Rest of State	76	78	83	84
—	—	—	—	—
Entire State	51	54	58	60
Per Cent of Farm Land Improved				
11 Forest Counties	19	23	28	34
3 Mineral Counties	20	19	26	31
—	—	—	—	—
14 Northeastern Counties	19	22	28	33
Rest of State	72	75	76	74
—	—	—	—	—
Entire State	70	71	71	70
Average Size of Farm, Acres				
11 Northeastern Counties	135	137	133	125
3 Mineral Counties	120	124	109	100
—	—	—	—	—
14 Northeastern Counties	130	133	125	117
Rest of State	172	182	176	175
—	—	—	—	—
Entire State	170	177	169	167
Average Value of Land and Buildings				
Per Acre				
11 Forest Counties	\$10.60	\$22.02	\$41.74	\$35.14
3 Mineral Counties	13.33	24.96	39.19	41.56
—	—	—	—	—
14 Northeastern Counties	11.31	22.88	41.04	37.02
Rest of State	30.77	56.58	116.20	72.19
—	—	—	—	—
Entire State	30.04	53.35	109.23	68.74

Source: Bureau of the Census.

advertising and selling campaign. The state itself set up a department to promote colonization.

These efforts met a good response from recent immigrants from Scandinavia and Finland, who found conditions reminiscent of the old country. They attracted also both farmers and city dwellers from other parts of the United States. Displaced lumberjacks sometimes tried their hand at farming.

In the twenty years between 1899 and 1919, population in the 14 northeastern counties increased 141 per cent as compared to 25 per cent in the rest of the state, while the number of farms increased 196 per cent as compared to 61 per cent. The area in farms increased from 5 to 15 per cent of the total land area in the northeastern counties, elsewhere from 76 to 83 per cent.

Apparently agriculture in the cutover counties was flourishing, but appearances were illusory. During the ten years from 1919 to 1929 the population virtually stood still, while the rate of increase fell off markedly in the number of farms and still more in the area in farms. Changes in these items during the period under consideration are compared in the following tabulation:

	PER CENT OF INCREASE DURING DECADE		
	1899-1909	1909-1919	1919-1929
Population	85	31	0.4
Number of Farms	89	57	16
Area in Farms	92	48	8

The situation was due in large part to the agricultural depression which prevailed during much of the 1920's. The slowing down in agricultural expansion was equally pronounced in the rest of the state. But another unfavorable factor was present in the north — the inherent unsuitability of much of the land for the production of farm crops. In spite of the fact that the growing season is short in northern Minnesota and that the soils are more often than not sandy, stony, or poorly drained, reasonably good conditions for farming exist in many locations. A fairly large proportion of the early settlers were directed or found their way to these better areas and established satisfactory homes. Many others, carried away by the glowing pictures painted by the advertisements, settled on land which had little or no prospect for commercial agriculture. Some picked out burned-over swampland. Others chose lands so stony or so covered with big pine stumps that they could be cleared only with excessive expenditure of effort and money.

Some of the most tragic failures were connected with attempts to drain and farm swamplands, of which there are more than six million acres in northeastern Minnesota and the adjoining counties in the Red River

valley. The largest single blocks are in the vicinity of Red Lake in Beltrami, Roseau, Lake of the Woods, and Koochiching counties, and in the Swan River valley of Aitkin and St. Louis counties. In 1887, as a result of pressure from residents of the Red River valley, the legislature enacted a law to provide for the organization of local drainage districts. This law had little, if any, effect in the timbered region during the next twenty years.

A marked change in the situation occurred with the decline of logging and the passage of new legislation. In 1909 the legislature was induced to authorize the payment of assessments on undeveloped, state-owned swamplands in the drainage districts. The year before, Congress, in the "Volstead Act," had permitted the establishment of liens on unperfected homesteads and other public lands in drainage districts. A share of the costs was even assessed against Indian lands. With this encouragement, vast areas of swampland were included in drainage districts and many miles of ditches were built, at a cost of millions of dollars.

Much of the drained land was never settled, other areas were abandoned after settlement because the land was too poor to bear the charges against it, and all land in the drainage districts was assessable for the payment of principal and interest on the drainage bonds. The combination of poor soil, severe climate, a kind of drainage not well adapted to local conditions, and distance from markets made farming a precarious venture which seldom resulted in success. By 1930, many districts were in extreme financial difficulty. To protect their own interest, counties attempted to take over the ditch bonds, but in a number of cases the burden was too great even for them to bear. Finally, in 1929, 1931, and 1933, the state took over several million acres of swampland and assumed the bonded indebtedness that went with it.

Another factor unfavorable to the economic recovery of the region was the prevalence of fires originating from logging and land clearing. Some of these were spectacular and resulted not only in deterioration of the cutover lands which they burned but in heavy loss of human life and in the destruction of homes, other improvements, and even entire settlements. Examples are the Hinckley fire in 1894, the Chisholm fire in 1908, the Baudette-Spooner fire in 1910, the Cloquet-Moose Lake fire in 1918, and the Grygla fire in 1931. Yet in the aggregate, destruction by the smaller fires to which nobody paid any attention was probably even greater.

Interest in the control of forest fires was slow to develop. The year following the Hinckley fire, the legislature created the position of chief fire warden but gave him virtually no funds with which to work. Appropriations continued to be low, and fires continued to burn. Few recognized the injury they were doing to the region. What little good they might have done in helping to clear for agriculture land which was

of little value for that purpose anyway was more than offset by the destruction of young forest growth, merchantable timber, and other property. Landowners had no enthusiasm for continuing to pay taxes, much less for attempting to improve lands which had already been burned or were almost certain to be burned, with no prospect of being able to reap a timber harvest from them for many decades if ever.

The one bright spot in an otherwise dismal picture was the development of mining. Shipments of iron ore from the several ranges are shown by decades for the entire period from 1884 to 1957 in Table 14 and Figure 7. The increase in average annual shipments from 4,336 M tons during the period from 1891 to 1900 to 20,863 M tons during the period from 1901 to 1910, and to 36,064 M tons during the period from 1911 to 1920, is striking and particularly significant because it coincided with the period of rapid decline of the lumber industry.

The expansion of mining was accompanied by an influx of population and by an unprecedented increase in tax receipts and expenditures for community improvements in the three range counties, and particularly in St. Louis County. Population in that county rose from 4,504 in 1880 to 206,391 in 1920 — an average increase of approximately 50,000 every ten years for the 40-year period, with a jump of 80,882 between 1900 and 1920. Chisholm, which had no population in 1900, numbered 9,039 in 1920. Hibbing increased in the the same period from 2,481 to 15,089, and Virginia from 2,962 to 14,022.

Iron-ore products in 1920 were valued at \$128,377,174 — a higher

Table 14. Average Annual Shipments of Iron Ore by Periods and Ranges, 1884-1957.

PERIOD	RANGE				TOTAL
	MESABI	VERMILION	CUYUNA	FILLMORE	
	M GROSS TONS				
1884-1890	—	460	—	—	460
1891-1900	3,588	1,197	—	—	4,336
1901-1910	19,349	1,514	—	—	20,863
1911-1920	33,293	1,386	1,385	—	36,064
1921-1930	33,195	1,434	1,788	—	36,417
1931-1940	23,088	1,015	976	—	25,079
1941-1950	59,812	1,581	2,841	120	64,354
1951-1957	63,112	1,504	3,064	330	68,010
Entire period*	32,736	1,284	1,944	207	31,762

* This line gives the average annual shipment for each range for the entire period since the first shipment was made: 1884 for the Vermilion Range, 1892 for the Mesabi Range, 1911 for the Cuyuna Range, 1941 for the Fillmore District, and 1884 for the state.

Source: "Mining Directory of Minnesota" (197).

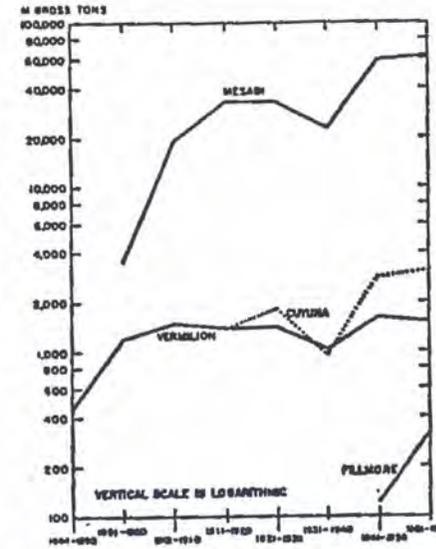


Figure 7. Average annual shipments of iron ore by periods and ranges, 1884-1957.

figure than that for any other state. Taxes amounted to \$26,013,086, and royalties and rents to \$17,532,030. Range towns supplied themselves with schools, community houses, waterworks, sewers, fire-protection apparatus, electric lighting, intercity street railroads and omnibus lines, paved streets, parks, and libraries. Expenditures for schools of all grades were lavish beyond comparison; Hibbing alone spent more than \$4,000,000 for schools. As a result of these lavish expenditures, the legislature in 1921 limited the general tax levy in cities and villages to \$100 per capita (later reduced to \$70) and the school tax levy to \$60 per capita.

Even in the range counties, however, the favorable financial situation created by mining operations did not extend to the entire county. Outside of the mining districts, organized townships and school districts found themselves with a meager tax base to provide funds for the building of township roads, the maintenance of county roads, the operation of schools, and in some cases the administration of poor relief and health services. Their plight is illustrated by the following comparison made by Professor William Anderson in 1931 between townships in twenty northern counties (excluding St. Louis and Itasca) and twenty southern counties:

	SOUTH	NORTH
Average population	623.03	268.44
Average assessed valuation, million dollars	702.01	132.07
Average valuation per capita, dollars	1,126.72	402.01
Average tax rate, mills	7.44	19.75
Average debt per town, dollars	915.22	2,715.13

Practically none of the distinctively rural townships in the northern counties were able to maintain governmental organizations and provide community services on the basis of their own resources. In one extreme case, the residents of three townships in northern St. Louis County in 1932 paid \$658 to the county and the state in the form of taxes and received more than \$25,000 in the form of county and state aid.

In summary, there was a marked contrast during the period from 1900 to 1932 in the economic position of the southern and the northern parts of the state. In the south, agricultural expansion slowed down but farmers in general continued to prosper, although with some setback during the agricultural depression of the 1920's. Industrial development proceeded at an accelerated pace in spite of the virtual disappearance of the large sawmills at Minneapolis. In the north, the economic crisis created by the rapid decline of logging and sawmilling was eased only in part by the development of agriculture and mining. Much new land was cleared for farms, but climatic and soil conditions were commonly unfavorable; attempts at extensive drainage proved a dismal failure; speculators made more money than farmers. Mining created prosperity for the towns on the ranges but not for the back country. Tax delinquency increased at an alarming rate.

FROM 1932 TO 1958

In the northeastern counties, this entire period was one of readjustment — of recognition of bankruptcy, reorganization, and gradual recovery. The readjustment involved the permanent transfer of large areas of privately owned land to public ownership. During the 1920's much land had theoretically become the property of the state (to be held in trust for the local taxing districts), but the state was reluctant to believe that title would not be reclaimed by the previous owners or other purchasers. Numerous "bargain counter," "repurchase," and "confession of judgment" laws were passed in an attempt to encourage such redemption.

Technicalities also made it easy to break the state's title to tax-forfeited lands. In 1927 the legislature enacted a law which it thought would remedy this situation, but which was largely nullified by the attitude of the courts. Not until 1935 was legislation passed (effective in 1936) that was almost, but not completely, successful in plugging the loopholes. Ensuing events have been summarized by a land economist as follows (12):

"Between 1936 and 1938 the forfeiture of lands delinquent on the 1927-30 tax rolls brought approximately 4.2 million acres into state ownership and by June 30, 1944, the state had taken title to 4,518,320 acres delinquent on the 1927-36 tax rolls. The addition of this acreage to the 3,627,640 acres of unplatted lands reported forfeited for delinquencies in the years prior to and including 1926 brought the total tax-forfeited acreage in Minnesota up to more than 8.1 million acres. The

removal of this large acreage from the tax rolls naturally brought a considerable reduction in the percentage of tax delinquency. Still, at the beginning of 1944, an estimated 2,008,077 acres were still delinquent on the 1942 tax and 4,793,958 acres delinquent for all years. Much of this delinquent tax burden was paid up after the war; but even so, a total of almost 9.4 million acres had reverted to the taxing districts by June 30, 1950. Not all of this area was off the tax rolls at the same time. By the time the last lands had reverted, many of the earlier forfeited areas had been sold or repurchased and in a few cases, even reverted for a second time."

During the 1930's heavy purchases of land were also made by the federal government for addition to the Superior and Chippewa national forests. Much of the acquired lands was tax-delinquent or tax-forfeited and repurchased. Where this was the case, government purchase did not remove from the tax rolls any land which was likely to be an important and continuing source of tax revenue, but did result in receipt by the counties of substantial sums in the form of back taxes which the owners had to pay in order to establish a valid title.

The net decrease in rural land on the tax rolls in different parts of the state is shown in Table 15 and Figures 8 and 9. Particularly striking are the sharp decrease in the northeastern region after 1935, the moderate decrease in the central and the northwestern regions, and the very slight decrease in the southern region. The shrinkages in area of rural land on the tax rolls from the year when this figure was at its maximum to 1957 are as follows:

REGION	PER CENT
Northeastern	54.3
Central, northern counties	8.4
Central, southern counties	10.7
Northwestern	9.4
Southern	2.9
State	20.6

The permanent disappearance of large areas from the tax rolls did little to alleviate but much to aggravate the main causes of tax delinquency and tax forfeiture — overassessments, particularly of cutover lands, and high tax rates. Table 16 illustrates the way in which tax rates went up in seven northeastern counties during the period from 1931 to 1939, and compares these rates with those prevailing in two southern agricultural counties. Two extraordinary cases were reported by the Minnesota Department of Taxation in its biennial report for 1942:

"Observers were startled to note in 1938 tax rates in certain districts of Pine County as high as 628.56 mills; but when it was discovered in 1941 that a mill rate had been reached in one school district in Aitkin

MINNESOTA LANDS

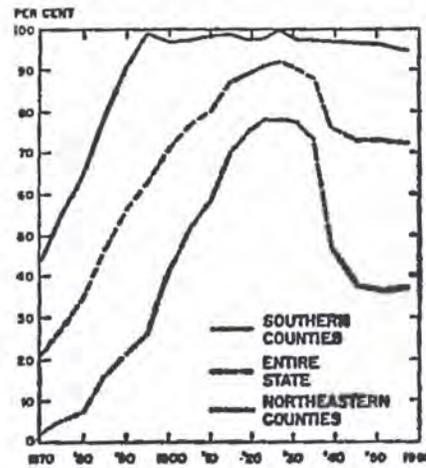


Figure 8. Relation of rural land area on the tax rolls to total land area, 1879-1957.

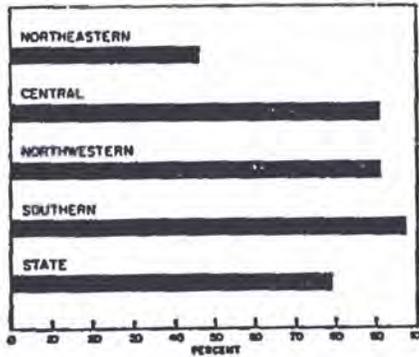


Figure 9. Area of rural land on the tax rolls in 1957, by regions, as a percentage of the maximum area once upon the tax rolls.

Table 15. Relation of Rural Land Area on the Tax Rolls to Total Land Area by Regions, 1870 to 1957.

YEAR	NORTH-EASTERN	CENTRAL, NORTHERN COUNTIES	CENTRAL, SOUTHERN COUNTIES	NORTH-WESTERN	SOUTHERN	STATE	PER CENT					
1870	2.1	8.7	43.3	—	43.8	20.6						
1880	6.9	39.0	59.0	8.4	65.1	34.8						
1890	21.5	57.8	72.7	39.4	91.1	56.2						
1900	40.6	75.8	94.3	65.3	97.2	71.1						
1910	58.4	93.0	97.8	83.9	98.4	80.2						
1915	69.9	93.4	98.5	91.6	98.6	87.1						
1919	75.2	95.9	98.6	95.1	97.6	89.2						
1923	78.3	97.4	98.5	96.5	97.9	90.7						
1927	78.0	97.3	98.6	96.4	98.4	97.9						
1931	77.5	97.2	98.5	96.1	97.5	90.3						
1935	73.2	95.6	97.3	92.8	97.3	88.0						
1939	47.4	87.7	88.8	81.2	96.9	76.1						
1945	37.7	89.9	86.5	83.9	96.9	73.2						
1951	36.4	89.8	89.3	86.3	96.4	72.9						
1957	37.0	89.2	88.1	87.5	94.6	72.4						

Note. Percentages are italicized for the years in which the amount of rural land on the tax rolls was at its maximum in each region.

Source: Minnesota Department of Taxation, Biennial Reports.

NATURAL RESOURCES AND PEOPLE

Table 16. Average Tax Levies on Real and Personal Property (Exclusive of Tax on Money and Credit) in the Townships in Selected Counties, 1931-1939.

	TAX RATE IN MILLS				
	1931	1933	1935	1937	1939
Northeastern Counties					
Aitkin	103.92	137.27	165.97	159.18	174.55
Beltrami	112.59	118.49	140.94	144.58	148.22
Cass	123.24	116.58	118.65	129.48	153.82
Cook	161.42	191.34	295.68	234.51	166.65
Koochiching	180.63	179.79	184.58	202.39	209.30
Lake	107.22	111.29	117.24	130.45	154.05
Lake of the Woods	82.88	98.86	129.41	138.89	148.88
Southern Counties					
Murray	33.32	36.43	42.98	41.20	46.58
Nobles	31.23	34.33	42.70	43.74	44.06
State Average	45.21	47.55	55.21	57.41	60.61

Source: Minnesota Department of Taxation, Biennial Reports.

County of 14,911.88 mills, it seemed inconceivable. However, the 1942 tax rate exceeded 300 mills in 43 school districts in Pine County, and in the Aitkin County district referred to above, the rate was reduced to 1792.49 mills."

A situation which was already bad was made worse by the Great Depression. Lumber production in the state, as has been noted, fell off to 2.6 per cent of its 1899 maximum. Shipments of iron ore decreased by 31 per cent during the 1930's as compared with the previous decade.

The critical economic situation which had developed in the northern counties led to numerous studies of possible ways and means of effecting improvements. Some of the more important of these may be summarized as follows:

FOREST TAXATION INQUIRY. During the late 1920's and early 1930's, under authority of the Clarke-McNary Act of 1924, the Forest Service made an intensive analysis of taxation in representative townships and counties in the state. This study documented the well-known facts that assessed values of cutover lands were excessive in comparison with assessed values of farm land and timberland, that tax rates were very high in the northern counties both intrinsically and in comparison with those in the southern counties, and that tax delinquency tended to snowball.

The discouraging effect of these factors on forest management was emphasized. However, the final report (51) did not recommend the replacement of the general property tax as applied to forest lands by a combined land and yield tax or any other substitute. Instead, it stressed the need for reducing expenditures by increased efficiency and economy in governmental operations, for placing the assessment of all property

to competition with other states." Although the report (92), submitted to the Governor in December, 1956, does not deal specifically with the relation of taxation to the utilization of natural resources except in the field of mining, it contains a great deal of basic information of value in that connection. Of particular value is the material concerning the property tax and the wealth of statistical data on the expenditures and revenues of state and local governments. With respect to the property tax, which "lies at the very heart of independent and responsible self-government at the local level," the committee recommends reforming the assessment system and providing for more effective taxpayer redress and assessment equalization.

SOCIETY OF AMERICAN FORESTERS. Forestry programs for Minnesota were formulated in 1950 and 1956 by the Upper Mississippi Valley Section of the Society of American Foresters. The 1956 program (137) stated that "Minnesota is faced with two major forestry problems:

"1. The need for more intensive management in order to get the maximum benefits in timber yield, recreational use and water supplies.

"2. An increase in timber utilization to take care of the species presently in surplus supply and those which may become surplus with an increase in timber yields."

Multiple land use, timber surveys, land classification, and adjustments in land ownership were among the many measures recommended as essential steps in the solution of these problems. The section favored placing more land in private ownership, "with the understanding that this should be encouraged only where the owner has demonstrated an interest in managing lands for continuous production."

COUNTY SURVEYS. The 1929 legislature directed the Department of Conservation, in cooperation with the College of Agriculture of the University of Minnesota, to make a land economic survey of all lands in the state. Hubbard County was selected for the first study. The final report (193), published in 1935, contained detailed soil and forest maps, together with much information on physical and economic conditions in the county. It made recommendations on use of state lands, county zoning, settler relocation, taxation, forestry, recreation, and reorganization of local government.

Because of the time and expense involved in land economic studies of the Hubbard County type, subsequent studies were made in a much simplified form. Specialists from the Extension Service of the University of Minnesota, in cooperation with the Bureau of Agricultural Economics of the U. S. Department of Agriculture, assembled available data on farming and other land uses, together with pertinent economic information, for twelve northeastern counties and a few elsewhere in the state. The resulting reports, issued in mimeographed form, were used as a first step in a program of county land planning which was in effect from 1938 to 1943.

A more recent study, along somewhat different lines, has been made under the direction of the State Land Management Committee appointed by the Commissioner of Conservation in 1956 and composed of representatives from each division of the department. Mahnomon County was used as a pilot area. The report (84), published in mimeographed form in July, 1959, contains a comprehensive inventory of the natural resources of the area, together with pertinent information concerning social and economic conditions, and offers numerous suggestions for improving the present situation. Perhaps its major conclusion is that "classification of land including zoning, public forests, wildlife areas, recreational areas, and complete utilization of all of the natural assets of the county can do a great deal toward lessening the immediate economic problems." There are, however, many specific suggestions as to actions which the county might advantageously take.

NATIONAL SURVEYS. Beginning with 1934, the National Resources Board and its successors submitted a large number of reports dealing with national planning and public works in relation to natural resources. Reports by several regional and state committees of the board helped to fit the Minnesota situation into the national picture. The most applicable of these was the report (150) of the Northern Lake States Regional Committee, published in 1939, which discussed at length the origin, importance, and solution of the serious social and economic problems confronting the people in the cutover area of northern Michigan, Wisconsin, and Minnesota.

Several surveys of the forest resources of the nation and the state have been made by the Forest Service. The most comprehensive of these surveys resulted in reports published in 1933, 1945-1946, and 1958. Popularly known as the "Copeland Report" (157), "Reappraisal Report" (160), and "Timber Resource Review" (162), they have provided much specific information on condition and ownership of forest lands in the state, current and prospective volume of timber and timber growth, and forest industries and their requirements. The latest of these surveys, in which the state and the forest industries participated in a large way, provided the basic material for the important bulletin entitled "Minnesota's Forest Resources," which was prepared by the Lake States Forest Experiment Station and published in October, 1958.

SOME RESULTS. Some of the results of all this activity may be listed as follows. Except for the constitutional amendment authorizing land exchanges, all of the actions indicated were taken by the legislature.

1933. Created a state land-use committee, and authorized the creation of county land-classification committees.

1933, 1935, 1943. Established numerous state forests.

1935, 1957. Provided a procedure of tax forfeiture intended to prevent the breaking of the state's title to tax-forfeited lands.

(and particularly of forest property) on a sound basis, and for installing improved tax-collection procedures. It also suggested three possible modifications of the general property tax as applied to forest properties which would lessen the burden on properties not yielding a current income.

UNIVERSITY OF MINNESOTA STUDY OF TAXATION. In 1932 the University of Minnesota Press published a comprehensive study of all phases of taxation in the state (17). Among many other topics, it discussed delinquency and the cutover land problem, taxation of forest property, and iron ore and mining taxes. It was by far the most complete analysis of the tax situation up to that time and contained many suggestions for improvement.

GOVERNOR'S LAND USE COMMITTEE. Also in 1932, Governor Olson appointed a Committee on Land Utilization, under the chairmanship of President Coffman of the University of Minnesota, to take note of "the imminent reversion to the State of millions of acres of tax-delinquent, cutover land," and to present "constructive suggestions for the economic and social reconstruction of the region." Its final report (35), published by the University of Minnesota Press in 1934, recommended the establishment of state and county land-use committees, initiation of land classification and zoning, acquisition of lands for state forests and other state purposes, effectuation of land exchanges, concentration of settlement, simplification of local government, codification of state land laws, and expansion of research in all aspects of land use, public finance, and government. The study constituted the first intensive, coordinated effort to analyze and solve the critical problems which had developed in the northern part of the state.

PROGRAM FOR LAND USE. Research on these problems was continued by the University of Minnesota, and the results were published in 1935 in a book entitled "A Program for Land Use in Northern Minnesota: A Type Study in Land Utilization" (71). It carried the analysis of some problems further than the report of the Governor's committee and included considerable new material. The scope of the programs proposed by the authors is indicated by the following quotation from the book:

"The application of land classification and zoning to the area is developed in considerable detail. The private and public utilization of land for forestry is reviewed. Specific suggestions for improved utilization of agricultural land are offered. The movement of settlers from lands or localities not well suited to agricultural development is considered. Estimates of the possibilities of lowering the tax burden through suggested changes in government reorganizations and settler relocation are presented."

The report perhaps contained the first frank public recognition by persons intimately connected with agriculture (both authors were agri-

cultural economists) that the agricultural prospects of the northern counties were not as bright as had been generally believed. "Past developments suggest what are the limits on agricultural expansion. The land now in farm use are clearly adequate to supply present needs abundantly and there is no reason to believe that the market will expand greatly. Population is no longer increasing rapidly. Competition with other agricultural regions is keen. Foreign outlets have decreased. In short, it is not merely a question of whether a region has soil and climate suited to farming but whether such economic factors as markets, transportation, competing areas, and costs of development are favorable."

The authors pointed out that "settlement calls for more extensive public services than are needed where the land is employed for forestry or similar purposes," and added: "The public finance problem is aggravated by extensive indebtedness arising from expenditures previously incurred in anticipation of development that has often failed to materialize. The tax problem is an important consideration in a land use program. Conversely, the type of use to which land is devoted is an important factor in the tax burden. The questions of public finance and land use are therefore essentially parts of the same problem."

LEGISLATIVE FORESTRY COMMISSIONS. In 1953 the legislature appointed an interim commission "to study the forestry situation in all of its various aspects." The commission submitted a comprehensive report (96) covering the current forest situation in the state, forestry programs of state agencies, county management of tax-forfeited lands, private forestry, federal-state relations, forest research, and forest taxation. Land ownership and management, zoning, and land-use planning received considerable attention. Of the sixty-three recommendations, more than half dealt with administrative and fiscal matters.

An identical resolution adopted by the 1955 legislature in effect continued the interim forestry study commission, but with a considerable change in membership and a smaller appropriation. This group concentrated its attention on timber sales, tax forfeiture, and auxiliary forests in the northeastern counties, on the possibilities of forest management in the southeastern counties, and on the marketing and utilization of forest products. Its recommendations were decidedly limited in scope and did not deal with the larger problems in the fields of land ownership and management (97).

The 1959 legislature created an Interim Commission on Forest Resources and Forest Land Ownership to consider all matters in these and related fields, and to report to the 1961 legislature.

GOVERNOR'S TAX STUDY COMMITTEE. In 1955 Governor Freeman appointed a Minnesota Tax Study Committee to "examine the tax structure to determine the impact of various taxes on the creation of wealth with particular emphasis in the area of manufacturing where we are subject

1935. Required the counties to classify all tax-forfeited lands as "conservation" or "non-conservation" lands, and authorized them to appoint land commissioners.

1937. Created a state planning board.

1938. Authorized the exchange of state and county lands with private owners and the federal government.

1939. Authorized the counties to establish zones of restricted and unrestricted settlement.

1945. Authorized the counties to establish memorial forests.

Progress in these various directions has not been uniform. A comprehensive state-forest system has been established and an effective organization for its administration developed. Tax-forfeiture procedure has been greatly strengthened, partly as a result of a 1957 law amending the 1935 act, with increasing (but perhaps not yet complete) assurance of the validity of the state's title.

With these exceptions, progress has on the whole been disappointing. Land exchanges have not gone forward on any considerable scale, although the process now seems to be speeding up somewhat. A relatively small area has been included in memorial forests. There has been no consistent advance in land-use planning at either the state or the county level. Only nine counties have appointed land commissioners, and only nine counties (not entirely the same) have established memorial forests.

By the end of 1942, ten of the fourteen northeastern counties had classified their lands with respect to their suitability for agriculture, and two others were in process of classification. The program was given a setback by World War II and curtailment in the cooperation of the Bureau of Agricultural Economics in the Department of Agriculture. It has not progressed far since that time.

A major weakness in the classification program was that it included no means of forcing the private owner to abide by the classification approved by the county. To remedy this defect the legislature passed the 1939 zoning law authorizing the counties, in conjunction with town boards, to prevent the future use of land for purposes for which it was classified as unsuitable. Carlton, Koochiching, and Lake of the Woods counties passed zoning ordinances in 1940. Beltrami County followed in 1941. By the summer of 1946, Itasca, St. Louis, Aitkin, and Clearwater counties had brought the total to eight. No county has been zoned since 1946.

This is not a particularly impressive showing, and some flaws exist in the zoning ordinances that have been adopted. In some cases they do not cover the entire county, and in Lake County the board decided not to adopt a proposed ordinance because two of the townships failed to concur. Administration is sometimes lax. Nevertheless, the program has

so clearly proved its usefulness that its extension to other counties would seem to be distinctly advantageous.

Another subject which should be mentioned in this connection is the relocation of settlers from unfavorable to more favorable situations, to the distinct advantage of all concerned. Although the practice has perhaps been used most widely in Wisconsin, it has also been used effectively in Minnesota. A small-scale example is afforded by St. Louis County, which, in combination with its zoning program, relocated four families at a cost of \$10,000. The move permitted a modification of the county's road construction program, with an initial saving of \$50,000 on construction costs and a subsequent annual saving of \$1,500 in maintenance costs.

The most ambitious relocation undertaking in the state involved Beltrami Island in Lake of the Woods and Roseau counties (115). This project, started in 1934 under the land retirement program of the federal Agricultural Adjustment Administration, was the first in the United States to result in the actual removal of settlers. The land was a typical cutover area, with too poor a soil to yield an adequate income when used for agriculture. It was generally swampy, and local government was heavily burdened with ditch bonds. When the timber was depleted, income was not sufficient to pay the ditch liens, and tax delinquency mounted. By 1931 nearly 90 per cent of the land assessed for ditches was delinquent. The action of the state in 1929 in taking over the tax-forfeited lands to establish the Red Lake Game Preserve and assuming the bonded indebtedness on them relieved this situation, but it did not increase the productivity of the lands. It was still impossible to make a satisfactory living out of them. Relocation of some 300 families on a near-by area of better soils seemed to be the only answer.

To start the relocation work, the Agricultural Adjustment Administration set aside an initial \$300,000 for land acquisition, and the Minnesota Rural Rehabilitation Corporation set aside \$385,000 for loans to aid in resettling families. Many difficulties were encountered, including the reluctance of the settlers to go into debt again for buildings and equipment, but in 1936 the move was virtually completed. The people had been placed on better soil, their financial position had been definitely improved, and they were now able to obtain the public services which they could not previously afford. The financial position of the counties was also improved, with a larger and more stable tax base for this particular group and with reduced costs for schools and for road construction and maintenance.

OTHER DEVELOPMENTS. Congress in 1930 recognized the unique scenic and recreational values of the lake country of northeastern Minnesota by withdrawing from entry a large area of public land north of the "Shipstead-Nolan" line, by requiring the Forest Service to conserve for

recreational use the natural beauty of all lakes and streams therein, and by providing that there should be no further alteration of the natural water level of any lake or stream in the region without further act of Congress. An important further step toward protection of the area came in 1948 when Congress authorized the first of several appropriations for the purchase of lands, the development or exploitation of which might impair the unique qualities and natural features of the remaining wilderness canoe country.

Numerous state parks have been created since 1930 and have attracted steadily increasing numbers of visitors. The rapidly expanding recreational use of Minnesota's natural resources has been one of the outstanding features of the period and has done much to bolster the economy of the northern counties.

Other favorable factors were the sharp rise in shipments of iron ore and in the manufacture of pulp and paper during the 1940's. Average annual shipments of iron ore much more than doubled during the ten years from 1941 to 1950 as compared with the previous decade, and were still on the upgrade from 1951 to 1957. Another encouraging item is the current development of the state's taconite resources. During and following World War II the annual cut of pulpwood and the production of pulp and paper went up substantially and are continuing at the higher levels. Present policies of public agencies and of the larger owners of forest land give assurance that there will never again be an era of "boom and bust" in the harvesting of the state's timber resources.

All in all, the state has fared well since the trying years of the Great Depression. Problems of course still exist, particularly in the northeastern region, but continuing study and resultant action are gradually leading to their solution. Among the more urgent problems in the field of natural resources are those relating to the ownership and management of forest and related lands.

RESOURCES AND TODAY'S ECONOMY

The major classes of land in Minnesota, as estimated by the 1950 Census and the 1953 Timber Resource Review of the Forest Service, are shown in Table 17 and Figure 10. Cropland and forest land predominate, with 77 per cent of the latter in the northeastern region.

AGRICULTURE

The 1954 Census of Agriculture found that there were 165,225 farms with an average area of 195.4 acres, which occupied 32,284,539 acres, or 63 per cent of the land area of the state. The use made of this area for crops, pasture, and woods is shown in Table 18. About 60 per cent consisted of crops actually harvested, excluding fallow land and crops used for pasture; 22 per cent was pastured; 14 per cent was in woods; and 9 per cent was unused for any of these purposes. The duplication among

some of these categories is evident from the table. Two-thirds of the area in woods was pastured. Only 347 farms practiced irrigation — on a total of 9,207 acres.

Table 17. Major Classes of Land in Minnesota, 1950 and 1953.

CLASS OF LAND	M ACRES	PER CENT
Crop	20,901	41
Pasture ¹	4,178	8
Forest ²	19,344	38
Other ³	6,783	13
	<u>51,206</u>	<u>100</u>

¹ Excluding pastured woodland.

² Includes 18,098 M acres of commercial forest land and 1,246 M acres of non-commercial forest land.

³ Farmsteads, roads, power lines, urban, etc.

Source: Bureau of the Census and Forest Service (162).

Table 18. Uses of Farm Land, 1954.

Use	ACRES
Cropland actually harvested	19,492,565
Cropland used only for pasture	1,536,166
Cropland not harvested and not pastured	1,164,231
	<u>22,192,962</u>
Cropland pastured	1,536,166
Woodland pastured	2,982,961
Other pasture	2,599,458
	<u>7,118,585</u>
Woodland pastured	2,982,961
Woodland not pastured	1,537,458
	<u>4,520,419</u>

Source: Census of Agriculture, 1954.

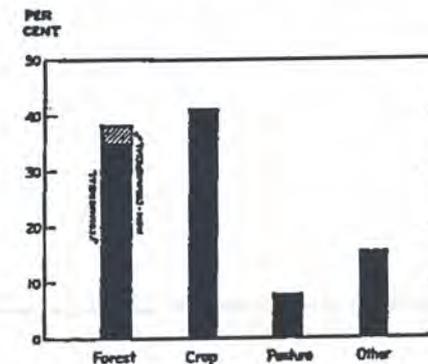


Figure 10. Major classes of land in Minnesota.

MINNESOTA LANDS

The chief crops harvested in 1954 are shown in Table 19. The large production of corn and hay reflects the importance of livestock in the economy of the state. Wheat, which occupied 69 per cent of the tilled area in 1878, thereafter declined rapidly in favor and for many years has been a minor crop except in the Red River Valley. Recent increases in the production of soy beans to their present prominent position are striking.

Table 19. Chief Crops Harvested, 1954.

CROP	ACRES	PER CENT OF AREA HARVESTED
Corn	5,405,793	28
Oats	4,926,560	25
Hay (land from which hay was harvested)	3,847,495	20
Soy Beans	1,917,400	10
Barley	1,073,382	6
Flaxseed	974,689	5
Wheat	685,910	4
Vegetables for home use and sale (excluding Irish and sweet potatoes)	158,040	1
Rye	98,120	1

Note. No other crop constituted as much as 0.5 per cent of the area harvested.
Source: Census of Agriculture, 1954.

Table 20 compares the value of farm products sold in Minnesota and the United States in 1954. The much larger proportion of the total value arising from livestock and poultry and their products in Minnesota is striking. Forest products constituted an insignificant part of the total value in both cases. In Minnesota, the value of these products by regions is shown in Table 21.

Table 20. Value of Farm Products Sold in Minnesota and the United States, 1954.

	MINNESOTA		UNITED STATES	
	VALUE	PER CENT	VALUE	PER CENT
Crops	\$348,126,316	35.4	\$12,221,625,069	49.6
Livestock and poultry and their products	633,975,914	64.4	12,292,424,309	49.9
Forest products	1,893,206	0.2	130,427,709	0.5
	\$983,995,436	100.0	\$24,644,477,087	100.0

Source: Census of Agriculture, 1954.

Table 21. Value of Forest Products Sold from Farms by Regions, 1954.

REGION	VALUE	PER CENT
Northeastern	\$1,225,803	65
Central	387,124	20
Northwestern	52,288	3
Southern	227,991	12
	\$1,893,206	100

Source: Census of Agriculture; 1954.

Not only was the value of forest products sold from farms heavily concentrated in the northeastern region, but in certain counties in that region. Thus, 14 per cent of the total came from St. Louis County alone, and 41 per cent from St. Louis, Koochiching, Beltrami, Clearwater, and Itasca counties. In no other county did the value of forest products cut from farms in 1954 reach \$100,000 (Fig. 11).



Figure 11. Counties in which the sale of forest products from farms exceeded \$100,000 in 1954.

Some other characteristics of farms in the fourteen northeastern counties and the rest of the state are compared in Table 22. The northeastern counties, with 36 per cent of the land area of the state, have only 11 per cent of the number of farms and only 10 per cent of the total area in farms. The land in farms in this area constitutes only 17.5 per cent of the land area as compared with 88.0 in the rest of the state, while the improved land in farms constitutes only 37.2 per cent of all land in farms as compared with 72.2 per cent in the rest of the state. Farms in the north average somewhat smaller than those in the rest of the state, and the average value of land and buildings per acre is only 38.7 per cent of that for the entire state.

Preliminary figures from the 1960 Census of Agriculture show a substantial decrease in the number of farms and the area in farms in the fourteen northeastern counties, and a somewhat smaller decrease in the area cropland.

Table 22. Characteristics of Farms in the Northeastern Region and in the Rest of the State, 1954.

REGION AND COUNTY	NO. OF FARMS	PER CENT OF LAND IN FARMS	PER CENT OF FARM LAND IMPROVED	AVERAGE	AVERAGE
				SIZE OF FARM ACRES	VALUE OF LAND AND BLDGS. PER ACRE
Northeastern					
Aitkin	1,805	23.9	34.2	155	\$40
Beltrami	1,676	20.1	39.2	193	30
Carlton	1,630	40.9	36.4	138	51
Cass	1,489	21.8	34.3	193	31
Clearwater	1,305	42.2	40.1	208	35
Cook	34	0.6	30.0	164	24
Crow Wing	1,283	32.4	35.7	161	45
Hubbard	1,095	36.1	42.0	197	35
Itasca	1,714	13.2	30.4	132	48
Koochiching	903	7.8	37.6	174	34
Lake	152	1.4	24.8	122	78
Lake of the Woods	632	20.3	46.5	268	40
Pine	2,452	43.5	37.8	160	44
St. Louis	3,568	10.5	36.5	118	56
	19,738	17.5	37.2	162	41 ¹
Rest of State	145,487	88.2	72.2	200	*
Entire State	165,225	63.0	68.7	195	106

¹ Excluding Pine County.

* Not available.

Source: Census of Agriculture, 1954.

In general, Minnesota ranks well as an agricultural state. It accounts for 3 per cent of the number of farms in the United States, 4 per cent of the value of all farm products sold, and 5 per cent of the livestock and poultry and their products. The value of its product per farm (\$5,955) is 16 per cent above the average for the United States and is exceeded only by Illinois, Iowa, Texas, and California.

MANUFACTURES

Manufacturing now outranks agriculture and mining in the value of its products. Table 23 compares the five groups of industries recognized by the Bureau of the Census in which the value added by manufacture exceeds 100 million dollars.

Table 23. Industries with a Value Added by Manufacture of More than \$100,000,000, 1954.

INDUSTRY	ESTABLISHMENTS		EMPLOYEES		PAYROLL		VALUE ADDED BY MANUFACTURE	
	No.	PER CENT	No.	PER CENT	M DOLLARS	PER CENT	M DOLLARS	PER CENT
Food and Food Products	1,183	23	49,470	24	198,587	24	398,774	25
Machinery (excluding electrical)	454	9	23,492	11	59,930	12	178,174	11
Pulp, paper, and products	81	2	15,428	8	71,226	8	173,960	11
Printing and publishing	804	16	19,450	10	85,808	10	136,625	9
Chemical products	182	4	5,268	3	21,999	3	102,484	6
All others	2,323	46	89,894	44	357,338	43	604,488	38
	5,027	100	203,022	100	834,888	100	1,594,505	100

Source: Census of Manufactures, 1954.

Among food and food products, meat products with only 6 per cent of the number of establishments contributed 41 per cent of the value added by manufacture, while dairy products with 54 per cent of the number of establishments contributed only 18 per cent of the value added by manufacture. Grain-mill products included 10 per cent of the number of establishments and 11 per cent of the value added by manufacture.

Concentration of the pulp and paper industry in a relatively small number of plants is striking. These plants comprise only 2 per cent of the total number of manufacturing plants in the state but account for 11 per cent of the value added by manufacture.

39 per cent of net receipts at the mills. Similar data for 1956 are shown graphically in Figure 13.¹

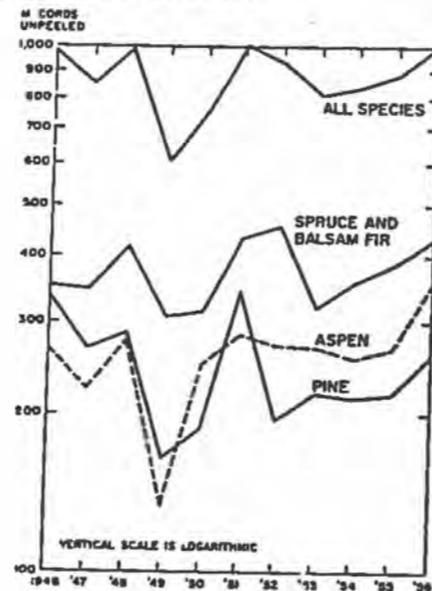


Figure 12. Annual cut of pulpwood by species, 1946-1956.

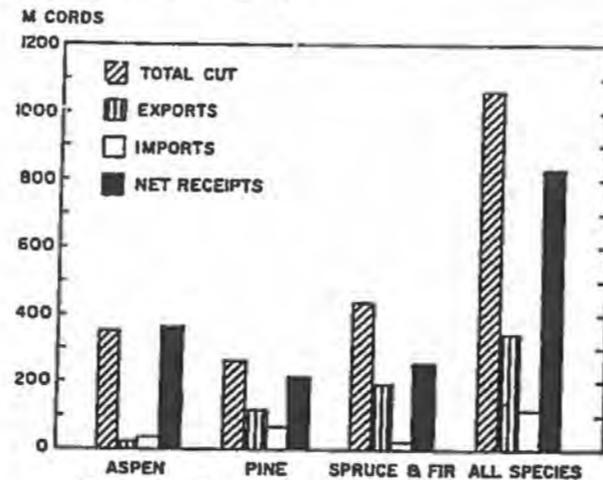


Figure 13. Total cut, exports, imports, and net receipts of pulpwood in Minnesota, 1956.

¹In 1959, receipts at Minnesota mills were 813 M cords — an increase of 8 per cent over 1957. The increase in net receipts in the face of a decrease in total cut was due primarily to a substantial reduction in exports to Wisconsin. The reduction was chiefly in spruce and balsam fir, exports of which to Wisconsin were 41 per cent less than in 1957.

Table 26. Total Cut, Exports, Imports, and Net Receipts of Pulpwood in Minnesota, 1957.

SPECIES	TOTAL CUT	EXPORTED TO			IMPORTED FROM		NET RECEIPTS	
		WIS-CONSIN	MICH-IGAN	WIS-CONSIN	CANADA	M CORDS	PER CENT	
		M CORDS, UNPEELED						
Aspen	277	16	—	16	15	292	39	
Balsam Fir	173	96	2	—	—	75	10	
Pine	224	104	—	1	35	156	21	
Spruce	345	140	7	—	13	211	28	
Others ¹	30	11	—	—	1	20	2	
	1,049	367	9	17	64	754	100	

¹Tamarack, birch, and balsam poplar.

Source: Lake States Forest Experiment Station, Technical Note No. 529.

The sharp decline of the lumber industry after the turn of the century has been noted earlier in this chapter. Within twenty years lumber production fell off 70 per cent, and in 1954 it was less than 8 per cent what it had been in 1899. The contrast between the courses followed by the lumber industry and the pulp and paper industry is forcefully illustrated in Figure 14.

In 1953 there were 1,815 sawmills in the state, but only three of these produced as much as 5 million board feet a year. Other primary wood-using plants included 9 veneer plants, 1 cooperage plant, 1 match factory, 1 clothespin factory, and 23 lath-shingle mills. Production of veneer logs in 1958 totaled only 9 million board feet, 78 per cent of which was exported to Wisconsin. Most of the production was in the southern part of the state, with basswood and cottonwood comprising more than half of the cut.

The cut of poles and posts has been increasing somewhat in recent years, while that of mine timbers has been declining. In 1954 it included 130,000 poles, 7,700,000 posts, and 1.6 million cubic feet of round and split mine timbers.¹

The consumption of fuelwood has been dropping steadily, and in 1954 was less than half of that in 1936. Of the 995,000 cords estimated to have been used in 1954, 40 per cent was attributed to the northeastern region.

In addition to the primary wood-using industries, there are many secondary wood-using industries, mostly small, which manufacture lumber both from Minnesota and other states. In the aggregate, the

¹In 1958, the cut of poles increased to 176,000, of which 53 per cent were pine and 47 per cent cedar, while the cut of mine timbers decreased drastically to 827 million cubic feet.

industries classified by the Census of Manufacturers as "lumber and wood products," which do not include the pulp and paper industry, rank well up among the manufacturing industries in the state. In 1954 the 800 establishments in this group employed 8,585 persons, had a payroll of \$27,974,000, and turned out products with a value added by manufacture of \$46,818,000.

MINING AND MINERAL INDUSTRIES

Ever since 1884, when the first shipment was made from the Vermilion Range, iron ore has been one of the major economic mainstays of Minnesota. Total shipments from each of the ranges by periods are shown in Table 27. By 1901-1910 these shipments had risen to 65 per cent of all shipments from the Lake Superior District, including Canada, and in 1956 they were 81 per cent. During the entire period the Mesabi Range has contributed 92 per cent of all shipments. Of the 1957 shipments, 94 per cent came from the Mesabi Range, 2 per cent from the Vermilion Range, 4 per cent from the Cuyuna Range, and less than 1 per cent from the Fillmore County District, where production started during World War II. Although there are many small mines, about

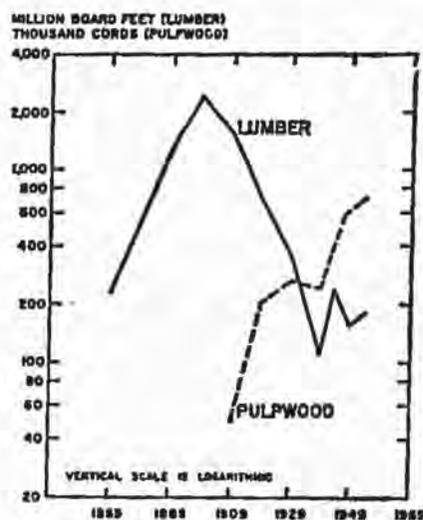


Figure 14. Lumber production and pulpwood consumption, 1869-1954.

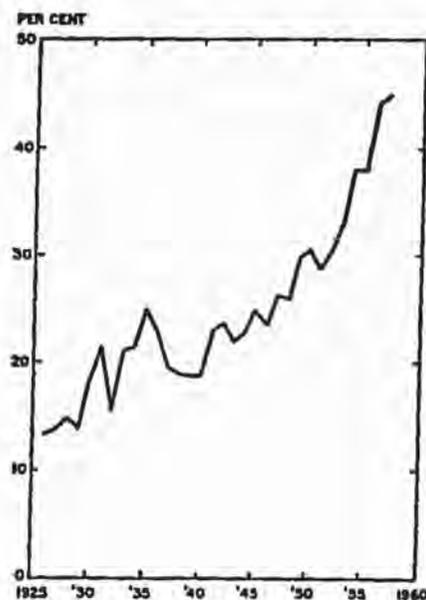


Figure 15. Relation of shipments of concentrated iron ore to total shipments, 1926-1957.

two-thirds of all shipments have come from some 60 mines with a total production apiece of 10 million tons or more.

Minnesota holds a commanding position in the shipment of iron ore not only in the Lake Superior District but in the United States. In 1956, for example, its shipments were valued at \$461,904,000, or 62 per cent of the value of all shipments. Michigan was its closest competitor, with shipments valued at \$98,111,000, or 13 per cent of the total. In the same year, it produced 65 per cent of the total usable iron ore (that produced from both mines and beneficiating plants measured in the form shipped to the consumer), 60 per cent of the direct shipping ore, 82 per cent of the iron-ore concentrate, and 51 per cent of the iron-ore sinter. The per cent of concentrates in total shipments increased from 13 to 45 per cent in the thirty-two years from 1926 to 1957 (Fig. 15).

Iron-ore reserves in the ground are changing constantly as ores are mined and as new deposits are found. Mining companies try to keep reserves approximately static, but in recent years have been unable to do so in Minnesota because the current mining limit of known deposits, excluding taconite deposits, was apparently reached in 1944. Estimated reserves from 1930 to 1957 are shown in Table 28 and Figure 16. There was an apparent decrease of 36 per cent during this period. On the favorable side of the ledger, is the existence of enormous deposits of taconite, from which commercial production started in 1956.

Table 27. Iron Ore Shipments by Ranges and Periods, 1884-1957.

PERIOD	RANGE				TOTAL
	MESABI	VERMILION	CUYUNA	FILLMORE COUNTY	
1884-1890	—	3,223	—	—	3,223
1891-1900	31,390	11,968	—	—	43,358
1901-1910	193,496	15,138	—	—	208,634
1911-1920	332,928	13,860	13,850	—	360,638
1921-1930	331,953	14,339	17,877	—	364,169
1931-1940	230,882	10,152	9,757	—	250,791
1941-1950	598,117	15,807	28,415	1,204	643,543
1951-1957	441,781	10,526	21,452	2,313	476,072
	2,160,547	95,013	91,351	3,517	2,350,428
Per Cent	92	4	4	*	100

* Less than 0.5 per cent.

Source: "Mining Directory of Minnesota" (197).

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Table 28. Estimated Iron Ore Reserves by Ranges, 1930-1957.

YEAR	STATE TOTAL M GROSS TONS	PER CENT OF STATE TOTAL			
		MESABI RANGE	VERMILION RANGE	CUYUNA RANGE	FILLMORE COUNTY DISTRICT
1930	1,235,228	94	1	5	—
1940	1,218,587	94	1	5	—
1945	1,045,633	93	1	6	—
1950	980,958	94	1	4	1
1955	878,652	91	1	7	1
1956	826,562	92	1	7	*
1957	787,148	92	1	7	*

* Less than 0.5 per cent.

Note. Figures include stock piles but exclude ore on state lands that were not under lease as of May 1 of each year. The estimated tonnage in this category on May 1, 1957, was 2,689 M tons, all on the Mesabi Range.

Source: "Mining Directory of Minnesota" (197).

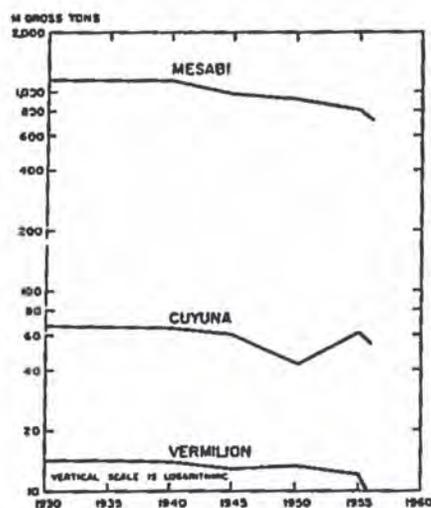


Figure 16. Estimated iron-ore reserves by ranges, including stock piles, 1930-1957.

What iron means to the economy of the state is indicated in part by the assessed valuation of iron ore in the ground, and in part by the taxes paid by the industry. The former is shown as of May 1, 1957, in Table 29, while taxes from 1936 to 1957 are shown in Figure 17.

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Table 29. Assessed Valuation of Iron Ore in the Ground, May 1, 1957.

RANGE	ASSESSED VALUATION		
	TOTAL	PER CENT	PER TON
Mesabi	\$134,177,243	96	\$0.192
Vermilion	3,716,065	3	0.385
Cuyuna	2,091,548	1	0.039
Fillmore County	342,814	*	0.276
	<u>\$140,327,670</u>	<u>100</u>	<u>\$0.814</u>

* Less than 0.5 per cent.

Source: "Mining Directory of Minnesota" (197).

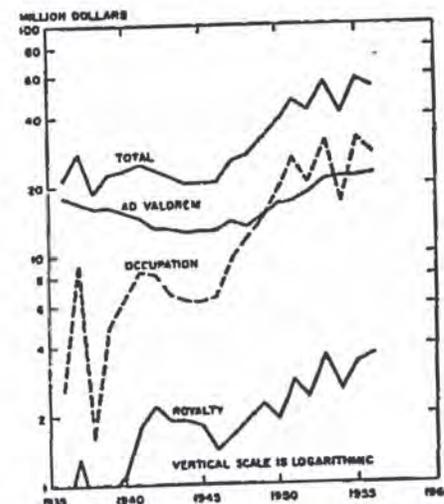


Figure 17. Ad valorem, occupation, and royalty taxes on iron ore, 1936-1956. Beginning in 1949, occupation and royalty taxes include the levy for the Veterans' Compensation Fund. The royalty tax for the years not shown on the chart was \$547,048 in 1936, \$607,988 in 1938, and \$865,926 in 1939.

Other mineral industries are of minor importance. In 1956, as shown in Table 30, they contributed only 8 per cent of the total value of mineral production, and of this amount 5 per cent consisted of sand, gravel, and stone. Four counties each produced more than a million dollars' worth of these latter materials — Hennepin, Stearns, Washington, and LeSueur.

RECREATION

Minnesota, "the vacation state since 1858," has a major asset in the recreational opportunities offered by its waters, woods, and wildlife. These are attracting rapidly increasing numbers of visitors, particularly

Table 30. Value of Production of Various Minerals, 1956.

MINERAL	VALUE	PER CENT
Iron Ore (Usable)	\$461,904,029	92
Sand and Gravel	18,524,301	4
Stone	7,551,538	1
Others	13,047,132	3
	<hr/>	<hr/>
	\$501,027,000	100

Note. Values are measured by shipments, sales, or marketable production, including consumption by producers.

Source: Minerals Yearbook, Bureau of Mines, 1956.

to the national forests and state parks, which have grown so popular that they are already becoming overcrowded. No one has ever brought together figures for the "recreation industry" comparable to those which are available for agriculture, manufacturing, and mining, but that the recreationist plays an important and growing part in the economic life of the state is beyond question.

An illustration of this fact is afforded by a vacation-travel survey conducted in 1958 under the sponsorship of the Office of Iron Range Resources and Rehabilitation and the Minnesota Arrowhead Association, which estimated that travelers in nineteen northern counties spent \$82,268,087 between May 11 and September 13. Another illustration, brought out in the appendix on Hubbard County, is the expansion of the tax base resulting from the use of lake shore property for summer homes. To an increasing extent, recreation is proving an economic boom to many a community.

Recreation should play a prominent part in the development of plans for multiple-use management on both public and private lands. That it may pay dividends to the owner in the form of cash or good will is reasonably clear; that it will benefit the community is still more so. In the competition for the tourist's dollar that is developing among the states, Minnesota has more than an even chance to hold its own.

POPULATION

ORIGINS

Minnesota's population, aside from the native Indians who were its first inhabitants, is made up entirely of immigrants from other states and other countries and their descendants. The bulk of the early settlers came from New England, New York, and the Middle West, but by 1860 nearly 60,000 newcomers from other countries constituted more than a third of the total population. Of this number, 76 per cent were from Germany, the British Isles, and Norway.

This situation continued for many years. Census figures show that the percentage of foreign-born to total number of inhabitants has run as follows:

YEAR	PER CENT	YEAR	PER CENT
1860	34	1910	26
1870	37	1920	20
1880	34	1930	15
1890	36	1940	11
1900	29	1950	7

People from other countries were more than made welcome; they were urgently sought. In 1865 the state gave a prize for the best essay on "Minnesota As A Home For Immigrants." Two years later the legislature created a Board of Immigration "to do everything which may enhance and encourage immigration to the state." The Board published pamphlets advertising Minnesota not only in English but in German, Norwegian, Swedish, and even Welsh. It sent agents to New York and other eastern seaports and to Europe to make known the attractions of the state. It asked the railroads to give immigrants low rates for traveling from East to West, and even built houses and hotels where the newcomers could stay until they decided where to settle.

All of this activity was, of course, for the purpose of attracting farmers, laborers, mechanics, business men, and professional men who would contribute to the rapid development of the young state and hence to its prosperity. The prevailing friendly attitude toward immigrants was expressed in the popular ballad:

"We have room for all creation
 "And our banner is unfurled,
 "Here's a general invitation
 "To the people of the world."

By 1870 the number of foreign-born residents in the state had increased to 37 per cent of the total population, after which it decreased gradually to 20 per cent in 1920 and to 7 per cent in 1950. In actual numbers, the maximum was reached in 1900, when the Census recorded 505,318 persons who had come to the state from other countries.

Table 31 shows in percentages the country of origin of the foreign-born population in decennial census years from 1860 to 1950. The prominent position consistently occupied by former citizens of Germany, Norway, and Sweden throughout the last hundred years bears witness to the appeal of Minnesota to persons of their descent and to their influence on the development of the state. Since the turn of the century the number of immigrants coming from other countries than those shown in the table has increased substantially. Denmark, Poland, Russia, Yugoslavia, Czechoslovakia, and Austria play an important part in the changing picture; but many other countries are also represented, such, for ex-

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ample, as The Netherlands, Belgium, Switzerland, Hungary, Lithuania, Rumania, Italy, Greece, Iceland, and Mexico.

Table 31. Percentage of Foreign-born Residents by Country of Origin, 1860-1950.

COUNTRY	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
	PER CENT									
Canada	14	10	11	9	9	8	7	7	7	8
Finland	*	*	*	*	2	5	6	6	7	7
Germany	31	26	25	25	23	20	15	16	14	13
Great Britain and Ireland	31	20	15	11	8	6	5	5	4	3
Norway	14	22	23	22	21	19	19	19	18	16
Sweden	5	13	15	21	23	22	23	23	23	21
Other	5	9	11	12	14	20	25	24	27 ¹	32 ¹
	100	100	100	100	100	100	100	100	100	100

* Less than 0.5 per cent.

¹ Poland and Russia each contributed 4 per cent of the total.

Note. No country not listed reached as much as 7 per cent of the total foreign-born population.

Source: Bureau of the Census.

Organized Norwegian immigration to the United States began in 1825. It gradually spread west from New York until by 1860 approximately half of all the Norwegians in the country were in Wisconsin. During the previous decade they had begun to swarm into Minnesota, where they first settled in Houston and Fillmore counties. Then they turned west and later poured into the Red River Valley, so that by 1890 half of all the Norwegians in the state were in the western counties. What they thought of their new home is expressed in a letter from a resident of Faribault written to a friend in Norway in 1866:

"Minnesota, which is still a young state can undoubtedly look ahead to a great future. By the end of the century it will probably be one of the richest and mightiest states in the whole Union. . . Its fertility is unmatched by that of any other country in the world. . . Miles of vast prairies alternate with extensive oak forests here [the Big Woods]."

The Swedes, who did not arrive in force until the latter part of the 1800's, pioneered in Chisago, Meeker, and Kandiyohi counties and then spread to many other parts of the state. By 1900, 115,476 Swedes, 104,895 Norwegians, and 16,299 Danes comprised nearly half of the foreign-born population in Minnesota and made it the most Scandinavian state in the country. An exclamation by a Swedish author (Frederika Bremer) in 1855 — "What a glorious new Scandinavia might not Minnesota become!" — began to sound almost prophetic.

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The Germans helped to build up the Minnesota River Valley and were also strong in central Minnesota, especially in the vicinity of St. Cloud. The Irish, who constituted the great bulk of the immigrants from the British Isles, were numerous in the cities of the state and were also found in scattered colonies in southern Minnesota. The Finns largely moved to the northeastern part of the state, and today about half of them are in St. Louis, Carlton, and Otter Tail counties, where they have settled on farms and work in the iron mines and in the woods.

After 1890, the percentage of foreign-born inhabitants in the state decreased — at first slowly and then more rapidly. At the same time, as shown in Table 32, the percentage of native-born inhabitants one or both of whose parents were of foreign origin remained high. Not until 1920 did the percentage of the population which was foreign-born or of foreign parentage fall below 65 per cent of the total population; and in 1930 (the last year for which figures are available) less than half of the population was still native born and of native parentage.

Minnesota has been peopled by immigrants from the northeastern, central, and mid-western United States and from northern Europe, with a liberal sprinkling from other parts of this country and of the world. It has thus become a cosmopolitan state deeply influenced in its culture and in its economic and social life by the traditions and backgrounds of the many diverse groups which have contributed to its development.

Table 32. Percentage of Native-born and Foreign-born Residents, 1890-1930.

ORIGIN	1890	1900	1910	1920	1930
	PER CENT				
Native born					
Native parentage	24	25	28	35	44
Foreign parentage	31	34	33	30	26
Mixed parentage	9	12	13	15	15
Foreign born	36	29	26	20	15
	100	100	100	100	100

Note. Comparable figures are not available for other years.

Source: Bureau of the Census.

GROWTH

Prior to its formal organization as a Territory in 1849, Minnesota had only a handful of white inhabitants. By 1860 the number had increased to 172,023 — a gain of 2,723 per cent over the official census for 1850.

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Increases during the remainder of the century were as follows:

	NUMBER	PER CENT
1860-1870	267,683	156
1870-1880	341,067	77
1880-1890	529,510	68
1890-1900	441,111	34

Up to 1900, the population of the state increased at a much faster rate than that of the United States (Table 33 and Figures 18 and 19). Then it slowed down, both actually and relatively. Between 1900 and 1950, Minnesota's population increased at an average rate of 246,218 per decade, or 41 per cent for the entire period, as compared with 49 per cent for the United States.

Census projections give an estimated increase in population of 13.4 per cent between 1950 and 1960, and of 11.2 per cent between 1960 and 1970. They indicate a population in the latter year of 3,761,000. Although these figures show a substantial growth, the rate of increase is less than that for the United States. The increases are due to an excess of births over deaths and not to immigration, since Census estimates foresee a net migration out of the state.

Table 33. Population of the United States, Minnesota, and Fourteen Northeastern Counties, 1850-1970.

YEAR	UNITED STATES		MINNESOTA		14 COUNTIES	
	NUMBER	PER CENT INCREASE ¹	NUMBER	PER CENT INCREASE ¹	NUMBER	PER CENT INCREASE ¹
1850	23,191,876	—	6,077	—	•	—
1860	31,443,321	36	172,023	2,723	•	—
1870	38,558,371	23	439,706	156	•	—
1880	50,155,783	30	780,773	77	•	—
1890	62,622,250	25	1,310,283	68	•	—
1900	76,303,387	22	1,751,394	34	163,910	—
1910	91,972,266	21	2,075,708	18	302,587	85
1920	105,710,620	15	2,387,125	15	395,677	31
1930	122,775,046	16	2,563,953	7.4	397,166	0.4
1940	131,669,275	7.2	2,792,300	8.9	435,576	9.7
1950	150,697,361	14.4	2,982,483	6.8	425,657	-2.3
1960 ²	176,954,000	17.4	3,382,000	13.4	•	—
1970 ²	202,790,000	14.6	3,761,000	11.2	•	—

* Figures not available.

¹ Per cent of increase during preceding decade.

² Projected.

Source: Bureau of the Census.

NATURAL RESOURCES AND PEOPLE

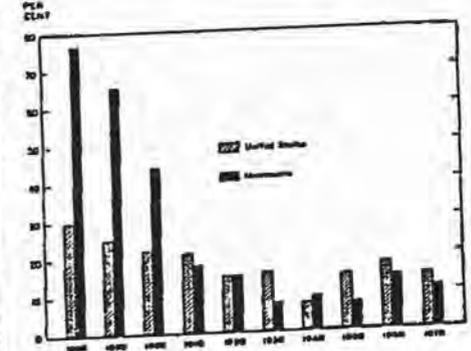
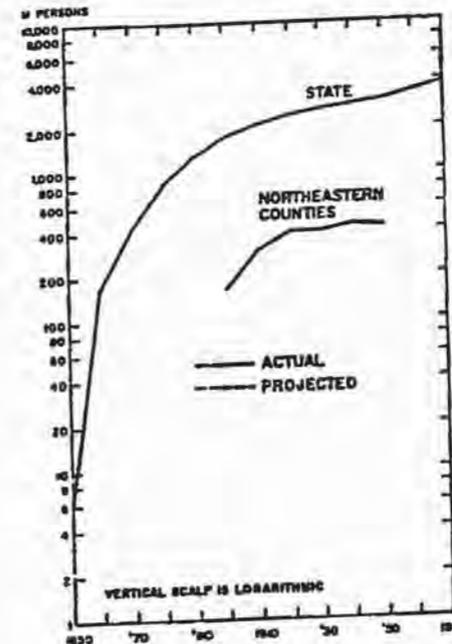


Figure 19. Actual and projected in population in the United States and Minnesota, 1880-1970. Figures show the percentage of increase during the preceding decade.

← Figure 18. Population of Minnesota, 1850-1970, and of fourteen northeastern counties, 1900-1950.

In the fourteen northeastern counties, population increased at a remarkable rate between 1900 and 1910. Not only did the population within the region itself increase by 85 per cent, but this increase represented 43 per cent of the increase in the entire state. During the next decade the increase was only 31 per cent, but this still represented 30 per cent of the increase in the state. Then the population remained static during the 1920's, when farming of much of the cutover land proved unprofitable and tax delinquency mounted.

During the 1930's population in this region increased at a slightly higher rate than in the state as a whole as a result of the "back-to-the-land" movement generated by the depression. Then came an actual decrease between 1940 and 1950, with an estimated increase since the latter date. Since 1910, the population of the northeastern counties has remained consistently at about 15 per cent of the population of the entire state, with nearly two-thirds in the three mining counties of St. Louis, Itasca, and Crow Wing.

The urban population of the state increased from zero in 1850 to 34 per cent in 1900 and to 54.5 per cent in 1950 (under the new and more inclusive definition of "urban"). Movement from the country to the

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cities has, however, been less pronounced than in many other states. Minnesota still has a rural population of 45.5 per cent as against only 36 per cent for the United States as a whole. There are two metropolitan centers — areas with a population of 50,000 or more. These are the Minneapolis-Saint Paul area, with a population in 1950 of 1,116,509, and the Duluth area, with a population of 252,777.

Because of the heavy concentration of the urban and the farming population in the southern part of the state, that region in 1950 had 2.8 times as many people as the other three regions put together (Fig. 20). Density of population, in terms of people per square mile, was

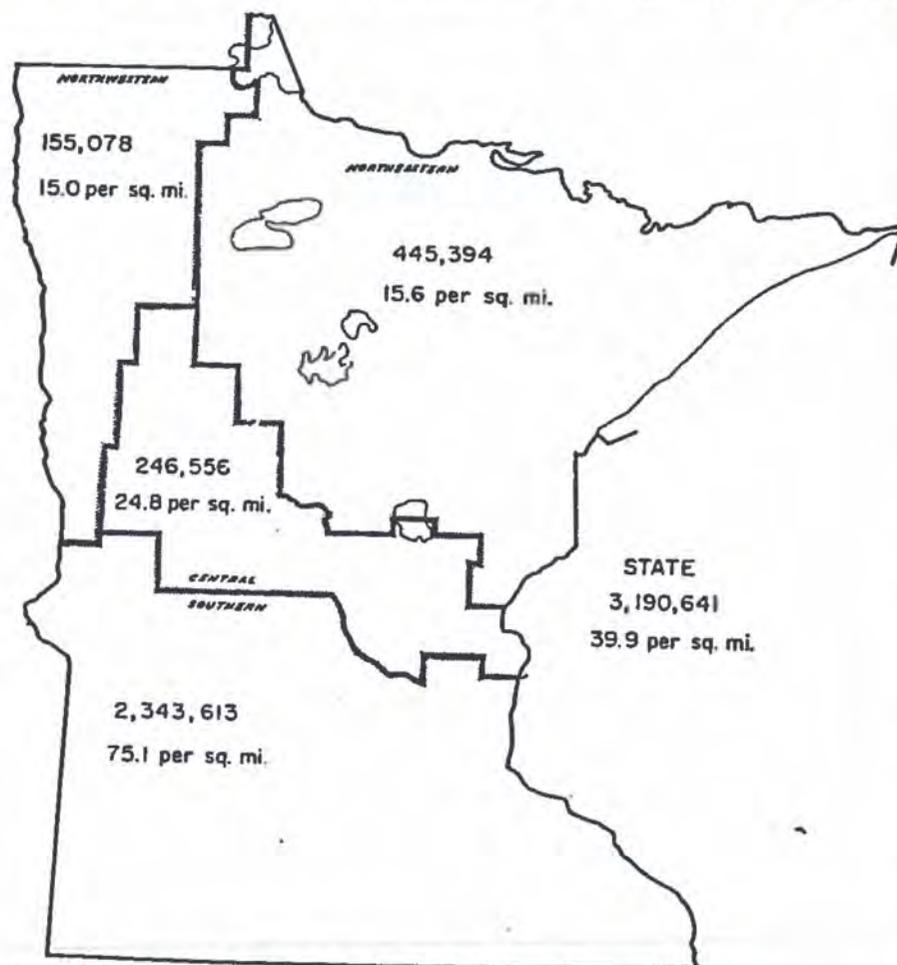


Figure 20. Total population and population per square mile by regions, 1955.

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about three times that of the central region and about five times that of the northwestern region and the northeastern region.

With a continuing increase in population in sight, Minnesota has the opportunity to maintain the economic progress which has marked its previous history. With more and more people to serve in the dual capacity of producers and consumers, its future prosperity will be governed largely by the extent to which it takes full advantage of technological advances, develops profitable markets for its products, and makes wise use of its natural resources.

FINANCES

The Governor's Minnesota Tax Study Committee, in its 1956 report (92), made the following comments on the state's tax structure:

"The present tax system in Minnesota is the product of almost one hundred years of piecemeal governmental efforts to meet the demands imposed by constantly rising levels of public expenditure. Tax revenues have increased enormously from less than one million dollars, about \$4 per capita, in 1860 to \$472 million in 1954, or \$152 per capita. Among the factors contributing to this expansion in the need for governmental funds have been rising prices, wages, and population; industrialization of the State's economy and the accompanying urbanization of its population; technological changes, particularly in the field of transportation; rising standards of living; and the assumption by government of a steadily increasing share of the responsibility for health, welfare, and education of the citizens of the State and residents of local communities.

"In 1858, when Minnesota gained statehood, the general property tax was relied upon by all units of state and local government for almost all of their revenues. At the time it was reasonably well adapted to local administration. Property assumed comparatively few forms in a frontier agricultural economy and the task of assessment was entrusted to part-time elected local officials. Moreover, with most wealth held in the form of tangible property, and income from services and securities of comparatively minor importance, the ownership of such property was readily acceptable as evidence of ability to contribute to the simple and rather frugal demands on the public purse."

This situation gradually changed, and as it did, reliance on the general property tax as the main source of revenue for the support of government decreased. This is particularly true so far as the state is concerned. Among the important new sources of revenue are the iron-ore occupation tax (1922), the income tax (1933), various excise taxes, licenses and fees, and federal aid. The general property tax has, however, continued to be the chief source of revenue for local governments.

Table 35. Taxable Valuation, Tax Rate, and Tax Levy under the General Property Tax in Fourteen Northeastern Counties, 1957.

COUNTY	TAXABLE VALUATION M DOLLARS	TAX RATE MILLS PER DOLLAR	TAX LEVY M DOLLARS	PER CENT TO				
				STATE	COUNTY	TOWNS AND VILLAGES	TOWNSHIPS	SCHOOL DISTRICTS
Aitkin	2,167	293	644	3	48	6	7	36
Beltrami	6,297	207	1,354	5	42	15	3	35
Carlton	12,894	230	2,982	5	23	20	4	48
Cass	3,925	261	1,042	4	45	5	6	40
Clearwater	2,808	228	656	5	42	6	8	39
Cook	1,684	181	304	6	44	2	—	48
Crow Wing	12,431	219	2,730	5	39	13	5	38
Hubbard	4,032	198	817	5	43	8	4	40
Itasca	27,399	255	7,042	5	23	15	4	53
Koochiching	6,080	311	1,915	4	27	21	1	47
Lake	3,217	195	629	5	29	14	6	46
Lake of the Woods	1,190	281	340	4	52	4	3	37
Pine	4,392	226	1,003	4	45	10	9	32
St. Louis	214,337	183	39,438	6	24	24	3	43
	302,853	201	60,904	5	27	20	4	44
State	2,041,277	175	372,158	5	26	27	4	38

Source: State Auditor's Report, 1958.

MINNESOTA LANDS

Table 34 shows the source of revenue for various levels of government in 1955. Particularly striking are the very slight dependence of the state on the general property tax, and the very heavy dependence of the townships. Taxes on income and gross earnings now yield the state about seven times as much as the property tax, the iron-ore occupation tax about twice as much, and federal aids about five times as much. Noteworthy also is the state aid received by the counties and the school districts.

Table 34. Source of Revenue for State and Local Governments, 1955.

	PROPERTY TAX	GRANTS AND AIDS PER CENT	OTHER PER CENT	TOTAL
State	4.9	16.0	79.1	100
Counties	50.8	44.8	4.4	100
Cities and Villages	58.6	5.7	35.7	100
Townships	89.2	10.8	—	100
School Districts	49.5	43.5	7.0	100

Source: State Examiner's Report, 1957.

In spite of the decreasing dependence placed on the property tax, especially at the state level, the total levy increased from \$124 million in 1930 to \$372 million in 1957 — a jump of 300 per cent. The increase was due to rising tax rates, and not to increased valuations, which surprisingly enough rose only 7.5 per cent during the period. Tax rates, on the other hand, rose steadily from 64 mills to 175 mills.

The tax situation in 1957 in the fourteen northeastern counties is shown in Table 35. In that year the tax rate varied from 181 mills in Cook County to 311 mills in Koochiching County, with an average of 201 mills. In no county was it as low as the state average of 175 mills. St. Louis County had 71 per cent of the taxable valuation and 65 per cent of the tax levied. St. Louis, Itasca, and Crow Wing counties together had 84 per cent of the valuation and 81 per cent of the tax levy. By far the largest amount of the tax goes for the support of school districts, of which there were 6,227 in 1957¹. These districts also receive state aid to the extent of about two-fifths of their total expenditures. (The figure was 43 per cent in 1955.) State and federal aid in 1955 in the handling of welfare ran from 54.1 per cent of the total cost in St. Louis County to 82.1 per cent in Aitkin County. State highway aids to the region in 1956 amounted to \$2,725,761.

¹ Bureau of the Census: "Local Government Structure in the United States," Special Studies No. 34.

Of total expenditures by all levels of government in 1954, about 39 per cent went for schools, 24 per cent for general government, public safety, etc., 21 per cent for highways, and 16 per cent for charities and hospitals.

The general picture, so far as the northeastern counties are concerned, is one of almost complete dependence on the general property tax for the raising of local revenues, of relatively high assessments of real property in relation to market values, of tax rates that are substantially higher than in the rest of the state, and of heavy dependence on state aid. The situation is clearly one that calls for the effectuation of feasible economies in public administration and for the building up of the resources of the region. The relation of the ownership and management of forest and related lands to these problems, which exist throughout the state in less acute form, is the subject of the remainder of this report.

PART II

EVOLUTION OF LAND OWNERSHIP

Land ownership in Minnesota has had a colorful and complex history, in which several nations, the state, its counties, many corporations, and innumerable individuals have played a part.

PRIOR TO THE REVOLUTION

Sieur des Grosseilliers and Sieur de Radisson, in 1660, were probably the first white men to visit what is now Minnesota. They and the handful of explorers, missionaries, and trappers who followed them during the latter part of the seventeenth century found the land occupied by Indians. These natives were recognized by the French and other European nations as having a right of occupancy but not of ownership. Chief Justice Marshall of the United States Supreme Court in 1823 (*Johnson v. McIntosh*) explained both the distinction and the reason for it as follows:

" . . . discovery gave title to the government by whose subjects, or by whose authority, it was made, against all other European governments, which title might be consummated by possession. The exclusion of all other Europeans, necessarily gave to the nation making the discovery the sole right of acquiring the soil from the natives, and establishing settlements upon it . . . the rights of the original inhabitants were, in no instance, entirely disregarded; but were, necessarily, to a considerable extent, impaired. They were admitted to be the rightful occupants of the soil, with a legal as well as a just claim to retain possession of it, and to use it according to their own discretion, but their rights to complete sovereignty, as independent nations, were necessarily diminished, and their power to dispose of the soil, at their own will, to whomsoever they pleased, was denied by the original fundamental principle, that discovery gave exclusive title to those who made it. While the different nations of Europe respected the right of the natives, as occupants, they asserted the ultimate dominion to be in themselves; and claimed and exercised, as a consequence of this ultimate dominion, a power to grant the soil, while yet in the possession of the natives. These grants have

been understood by all, to convey a title to the grantees, subject only to the Indian right of occupancy."

Under this doctrine of the rights of European nations in newly discovered lands, Sieur de la Salle on April 9, 1682, near the mouth of the Mississippi River, took possession of the whole valley of the Mississippi in behalf of Louis the Great, including all the land washed by all its tributaries, under the name of "Louisiana." The King of France thus became the first legal owner, under the law of nations accepted by European countries, of that part of Minnesota drained by the Mississippi River. Although De Soto, as early as 1541, had been on the river between Helena and Memphis, the Spaniards had never undertaken to colonize the valley, and the claim of France to dominion by right of discovery confirmed by occupancy was never successfully disputed.

On May 8, 1689, Nicolas Perrot, trader and explorer, at Lake Pepin, proclaimed the French king's sovereignty over the surrounding region. On the basis of explorations, discoveries, and proclamations, French dominion over Minnesota was by this time pretty well established; but in spite of this fact, and the continuation of trapping and the establishment of trading posts, the French planted no colony in the future state. Private ownership stemming from grants by the king was still in the future.

Following the French and Indian War in America and the Seven Years' War in Europe, the French by the Treaty of Paris (February 10, 1763) ceded to the English all their possessions on the continent of North America east of the Mississippi River except the island on which New Orleans is situated. The lands west of the Mississippi were not included, since France had conveyed this area, together with New Orleans, to Spain by a secret treaty with that country only a few months earlier (November 3, 1762).

During the twenty years that the English held the territory ceded by France no real attempt at settlement was made, and little if any land passed into private ownership. In October, 1763, George III established the government of Quebec but did not include the Northwest within its boundaries. That indeterminate region was reserved for the time being for the use of the Indians under the sovereignty and protection of the king. Purchase of lands from the Indians was forbidden, and all squatters were ordered to remove forthwith. The Quebec Act of 1774 extended the bounds of the province westward to the Mississippi River and gave to Minnesota East a political constitution, which in practice, however, never operated west of Lake Michigan.

UNITED STATES TAKES POSSESSION

The Treaty of September 3, 1783, which ended the Revolutionary War, transferred Minnesota East from England to the United States.

The international boundary from the source of the St. Mary's River (between Michigan and Ontario) was described as follows: "Thence through Lake Superior northward of the isles Royal and Phelippeaux, to the Long Lake; thence through the middle of said Long Lake, and the water communication between it and the Lake of the Woods, to the said Lake of the Woods; thence through the said Lake to the most northwestern point thereof, and from thence on a due west course to the river Mississippi." This line was based on the assumptions that the Lake of the Woods drained into Lake Superior and that the source of the Mississippi is much farther north than is actually the case.

Years passed before the exact location of Minnesota's northern boundary was finally settled. At the close of the War of 1812, the Treaty of Ghent (December 24, 1814) left the international boundary where the treaty of 1783 had placed it and provided for a joint commission to survey and definitely locate it. Before the commission got around to considering the part of the line which affected Minnesota, the Treaty of October 20, 1818, with Great Britain fixed the northern boundary of the Louisiana Purchase and changed the international boundary west of the Lake of the Woods to run as follows: "From the most northwestern part of the Lake of the Woods, along the forty-ninth parallel of north latitude, or, if said point shall not be in the forty-ninth parallel of north latitude, then that a line be drawn from said point due north or south as the case may be, until the said line shall intersect the said parallel of north latitude, and from the point of such intersection due west along and with the said parallel . . . from the Lake of the Woods to the Stony Mountains."

Between 1822 and 1827 the commissioners appointed by the Treaty of 1814 considered three possible locations of the international boundary from Lake Superior to the most northwestern point of the Lake of the Woods, but were unable to reach an agreement. The boundary consequently remained undetermined until 1842, when the Webster-Ashburton Treaty accepted the present Pigeon River line, which had been surveyed in 1826, with the understanding that Grand Portage and all the usual portages should be open and free to both countries.

The line from the Lake of the Woods to the forty-ninth parallel was not actually surveyed until the fall of 1872. The "most northwestern point" of the lake was found to be in a marsh under several feet of water. The due south line ran through continuous swamp for sixteen miles and then for ten miles across the open lake. The surveyors located the forty-ninth parallel on the ice over thirty feet of water, turned west, and marked the first station on solid ground on the west shore of the Lake of the Woods in November. Thus, nearly ninety years after the Revolution, were the exact locations of Minnesota's northwestern boundary and its "Northwest Angle" finally determined.

The history of governmental control of Minnesota West is somewhat simpler than that of Minnesota East. France's possessions west of the Mississippi River were ceded to Spain in 1762. Spain re-ceded them to France by the secret Treaty of San Ildefonso (October 1, 1800). The United States acquired them by the Louisiana Purchase (April 30, 1803), and the dividing line between Canada and the United States was placed at the forty-ninth parallel by the treaty of 1818.

Minnesota's southern and eastern boundaries were determined in 1846 and 1848, when Iowa and Wisconsin, respectively, were admitted to the Union. Its western boundary was determined by the Enabling Act of February 26, 1857, which ran the line from the northwest corner of the state, where the forty-ninth parallel of north latitude crosses the center of the main channel of the Red River of the North, up the main channel of that river and of the Bois des Sioux, through Lakes Traverse and Big Stone to the outlet of the latter, and thence due south to the north line of the state of Iowa. Whether to accept this line was the subject of heated debate in the constitutional convention which met the following July. Opponents favored a northern boundary which would run west along approximately the forty-sixth parallel of north latitude to the Missouri River. This line would have given Minnesota a "square and compact" area of fertile land, including a large part of the rich Missouri Valley and excluding a vast region of forest land which its advocates claimed would never be permanently settled but would be roamed over by trappers, miners, hunters, and lumbermen from whom no taxes could be exacted. Their arguments did not prevail, however, and the convention voted its approval of the boundaries proposed by Congress.

Although the treaty of 1783 ceded political control over Minnesota East to the United States, title to the land did not immediately vest in the central government. Virginia had long claimed this area on the basis of her charter of 1609, which granted her a territory having four hundred miles of frontage on the Atlantic Ocean and extending "from the Sea Coast . . . up into the Land throughout from Sea to Sea, West and Northwest." In 1778 a Virginian, not a Colonial, army under the command of General George Rogers Clark (better known as one of the leaders of the Lewis and Clark expedition) established military control over the area west of Pennsylvania, north of the Ohio River, and east of the Mississippi River. In the same year Virginia created the County of Illinois, with a county seat at Vincennes, Indiana, and the next year it established a land office near Harrodsburg, Kentucky. Considerable land was sold in "Illinois County," but none of it was located in what is now Minnesota. In 1784 Virginia ceded its claims to this territory to the United States for the reservation of certain "military lands," chiefly in southern Ohio, to meet the bounty claims of Virginia soldiers of the

Revolution. Similar cessions by six other states with western claims gave the federal government undisputed control over nearly all of the land outside of the recognized boundaries of the thirteen original states.

For many years, however, that control was more nominal than real so far as Minnesota was concerned. Trappers and traders connected with the Hudson's Bay Company and the Northwest Company, and after 1808 with the American Fur Company, were practically the only inhabitants of the region, which was too remote to command much attention from the American government. Although the treaty of 1783 obligated the British government to withdraw its garrisons from all military posts south of the Canadian boundary, this withdrawal was long postponed. The situation was remedied by "Jay's Treaty" of 1794, which provided for withdrawal of the British garrisons by June 1, 1796. Soon after this date the forts along the border were occupied by American forces, but the Northwest Company kept the British colors over its trading posts in Minnesota for another twenty years.

LIQUIDATION OF INDIAN RIGHTS

By 1804 — following the withdrawal of the British, the cession by Virginia, and the consummation of the Louisiana Purchase — the United States was in full control of all of Minnesota and in a position to dispose of the land as Congress saw fit. Before clear title to the land could be conveyed, however, it was necessary to liquidate the Indian right of occupancy.

For many years the method followed in obtaining cession by the Indians of their possessory rights was through treaties negotiated by the President and ratified by the Senate. The logic back of this procedure was expounded by Chief Justice Marshall in 1831 in a case in which the Cherokee Indians in Georgia claimed to be an independent nation (*Cherokee Nation v. State of Georgia*):

"The condition of the Indians in relation to the United States is, perhaps, unlike that of any other two people in existence. In general, nations not owing a common allegiance, are foreign to each other. The term *foreign* nation is, with strict propriety, applicable by either to the other. But the relation of the Indians to the United States is marked by peculiar and cardinal distinctions that exist nowhere else. The Indian territory is admitted to compose a part of the United States. . .

"Though the Indians are acknowledged an unquestionable, and heretofore unquestioned, right to the lands they occupy, until that right shall be extinguished by a voluntary cession to our government; yet it may well be doubted, whether those tribes which reside within the acknowledged boundaries of the United States can, with strict accuracy, be denominated foreign nations. They may, more correctly, perhaps, be

denominated domestic dependent nations. They occupy a territory to which we assert a title independent of their will, which must take effect in point of possession, when their right of possession ceases. Meanwhile, they are in a state of pupillage; their relation to the United States resembles that of a ward to his guardian. They look to the government for protection; rely upon its kindness and its power; appeal to it for relief to their wants; and address the president as their great father. . . Considerable aid is furnished by that clause in the eighth section of the third article [of the Constitution], which empowers Congress to 'regulate commerce with foreign nations, and among the several states, and with the Indian tribes.' In this clause, they are clearly contradistinguished, by a name appropriate to themselves, from foreign nations, as from the several states composing the Union."

The next year (1832), in the case of *Samuel A. Worcester, Plaintiff in Error v. State of Georgia*, Chief Justice Marshall emphasized the right of the Indians as independent communities to handle their own affairs, subject only to the exclusive control of the United States. Worcester had been convicted of settling on lands of the Cherokee Nation with their permission but without complying with the laws of the State of Georgia, and had been sentenced to four years at hard labor in the penitentiary. After pointing out that the charters granted by the British Crown conveyed title to the soil but did not affect the possessory rights of its current occupants, the Chief Justice continued:

"Certain it is that our history furnishes no example, from the first settlement of our country, of any attempt on the part of the crown, to interfere with the internal affairs of the Indians, further than to keep out the agents of foreign powers, who, as traders or otherwise, might seduce them into foreign alliances. The king purchased their lands, when they were willing to sell, at a price they were willing to take, but never coerced a surrender of them. He also purchased their alliance and dependence by subsidies, but never intruded into the interior of their affairs, nor interfered with their self-government, so far as respected themselves only. . .

"The Indian nations had always been considered as distinct, independent, political communities, retaining their original natural rights, with the single exception of that imposed by irresistible power, which excluded them from intercourse with any other European potentate than the first discoverer of the coast of the particular region claimed; and this was a restriction which the European potentates imposed on themselves, as well as on the Indians. The very term 'nation,' so generally applied to them, means 'a people distinct from others.' The constitution, by declaring treaties already made, as well as those to be made, to be the supreme law of the land, has adopted and sanctified the previous treaties

with the Indian nations, and consequently, admits their rank among those powers who are capable of making treaties. . .

"The settled doctrine of the law of nations is, that a weaker power does not surrender its independence — its right to self-government — by associating with a stronger, and taking its protection. . .

"The Cherokee nation, then, is a distinct community, occupying its own territory, with boundaries accurately described, in which the laws of Georgia can have no force, and which the citizens of Georgia have no right to enter, but with the assent of the Cherokees themselves, or in conformity with treaties, and with the acts of Congress. . . The act of the state of Georgia, under which the plaintiff in error was prosecuted, is, consequently void, and the judgment a nullity."

It is of this case that President Jackson is reported to have said: "John Marshall has made his decision; now let him enforce it." However that may be, the successful plaintiff, whose release had been ordered by the supreme court of the land, continued to languish in a Georgia prison under a law which the court had declared unconstitutional. Time marches on, but the problem of enforcing unpopular decisions is with us still.

Recognition of Indian tribes as independent (but not foreign) nations, capable of entering into solemn treaties with the United States, has sometimes been called a "legal fiction." As a Commissioner of Indian Affairs expressed it in 1869, "The Indian tribes of the United States are not foreign nations, capable of making treaties, as none of them have an organized government of such inherent strength as would secure a faithful obedience of its people in the observance of compacts of this character. . . But, because these treaties have been made with them . . . they have become falsely impressed with the notion of national independence. It is time that this idea should be dispelled, and the government cease the cruel farce of thus dealing with its helpless and ignorant wards."

The fiction was finally discarded in 1871, when Congress provided that thereafter treaties should be replaced by agreements negotiated by the President and approved by Congress. The change in psychology was perhaps important, but the main practical effect of the act was to give the House of Representatives as well as the Senate a voice in the handling of Indian affairs. There was no change in the basic policy toward the Indians as expressed in 1787 in the ordinance for the government of the Northwest Territory: "The utmost good faith shall always be observed toward the Indians; their lands and property shall never be taken from them without their consent, and in their property, rights and liberty, they shall never be invaded or disturbed, unless in just and lawful wars, authorized by Congress; but laws, founded in justice and humanity shall from time to time, be made, for preventing wrongs being done to them,

and for preserving peace and friendship with them." Whatever one may think of the justice and humanity of some of the Government's dealings with the Indians, it carefully observed the formality of obtaining a cession of the Indians' right of occupancy of the soil before disposing of the fee. In 1890 the Commissioner of Indian Affairs was able to say that "except only in the case of the Sioux Indians in Minnesota, after the outbreak of 1862, the Government has never extinguished an Indian title as by right of conquest; and in this case the Indians were provided with another reservation, and subsequently were paid the net proceeds arising from the sale of the land vacated."

INDIAN CESSIONS AND RESERVATIONS

No land grants were made and no colonies were established by France, Spain, or Great Britain in the present state of Minnesota. Consequently the only private land claim with which the United States had to deal was one based on a grant alleged to have been made by the Sioux Indians to Jonathan Carver, one of the earliest of the English explorers in the Northwest Territory. A deed dated "at the great cave" May 1, 1767, purporting to convey to him an estimated 200,000 square miles east of the Mississippi River in Minnesota and Wisconsin, was presented to Congress in 1806 by Carver's heirs and assigns, with a request for confirmation of the grant. Nearly twenty years later the request was finally denied by both the Senate and the House on the grounds that the alleged deed was probably spurious; that even if genuine it was invalid because of the British proclamation of 1763 forbidding the acquisition of land from the Indians; and that any Indian deed was necessarily void since Congress had never recognized any Indian right to the soil.

The right of occupancy possessed by the Indians was gradually extinguished by a series of treaties, agreements, and acts of Congress. Prior to 1880, most of the cessions provided for an outright and final conveyance of the land to the United States, in return for which the Indians received cash payments, annuities, substitute lands, or other things of value. In later years, as in the Chippewa cessions in Minnesota in 1889, the Indians often retained an equitable interest in the ceded lands. When reservations were set aside, they were to be the permanent property of the Indians, to be held in trust for them and managed for their benefit by the United States.

The history of Indian cessions and reservations in Minnesota is summarized in Tables 36 and 37, and is shown graphically in Figures 21 and 22 (131). On the whole, it has been a turbulent history in which the stronger of two alien races has frequently, perhaps inevitably, treated the weaker race in ways which in retrospect can hardly be viewed with pride. As Jenks Cameron has put it (23), the westward march of the white man "was bound in the course of its glacially, irresistible progress

to ride down certain things which lay in its path. The Indian was one, the buffalo another, timber, a third — to mention but a few of them."

PRIOR TO 1849

The first treaty was signed by Lieutenant Zebulon M. Pike (for whom Pike's Peak in Colorado is named) and the Sioux on September 23, 1805.

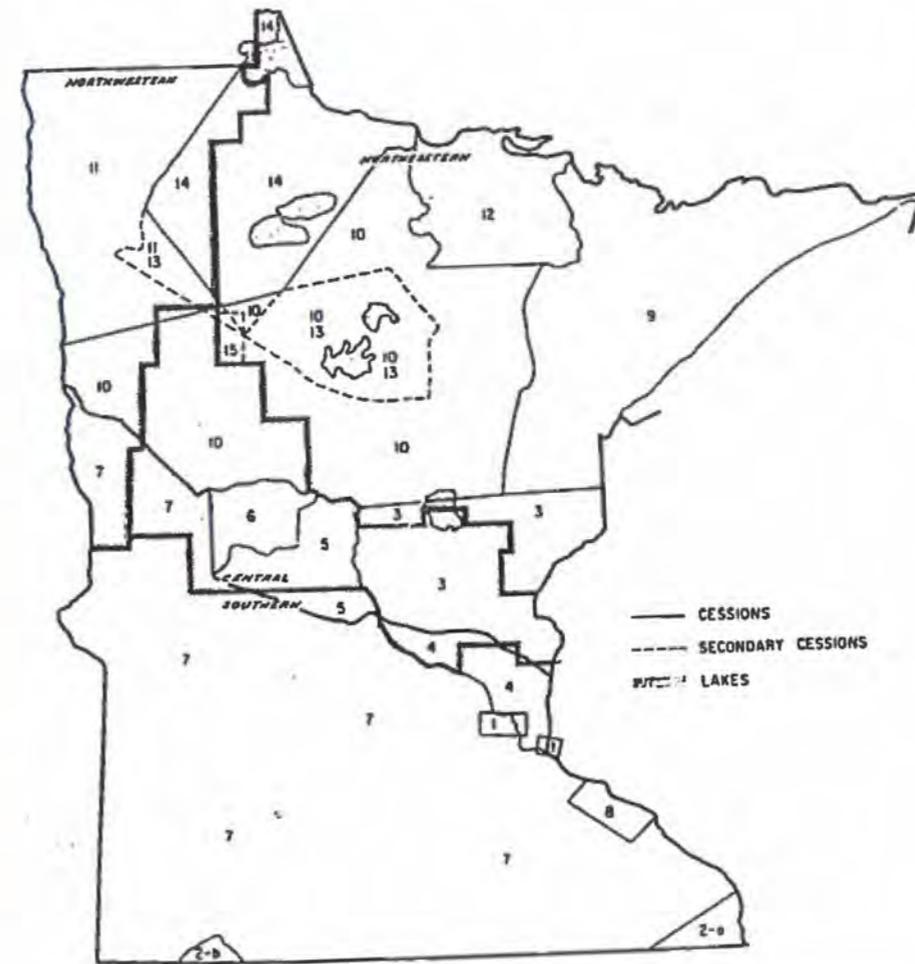


Figure 21. Chief Cessions of Land by Indians.

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It provided for the cession "forever," for the establishment of military posts, of two relatively small tracts at the mouth of the St. Croix River and between the confluence of Saint Peter's River with the Mississippi River and the Falls of St. Anthony (No. 1, Fig. 21). The consideration, which had been left blank in the original document, was placed by the Senate at \$2,000 when it ratified the treaty on April 16, 1808. Lieutenant Pike described the transaction as "100,000 for a song," while the Senate figured that 155,520 acres had been obtained for 1.28 cents per acre.

In 1826, by the treaty of Fond du Lac, the Chippewas ceded their right to search for, and to carry away, any metals or minerals from any part of their country, but there was no cession of the right of occupancy. Northern Minnesota's incredible wealth of iron ore was unsuspected at the time, but large deposits of copper were believed to be present.

Extensive cessions by the Sioux in 1830, mostly in Iowa, also included two small triangles in southeastern and southwestern Minnesota (Nos. 2-a and 2-b, Fig. 21). Two years later, in connection with a large cession by the Winnebagoes in Iowa and Wisconsin, the tract in the southeast corner of the state (2-a) was reserved for them, together with a much larger area in northeastern Iowa. They parted with the right of occupancy in 1837, and relinquished all claim to the tract in 1846.

The treaty of 1830 also set aside the so-called Wabasha Reservation just west of Lake Pepin (No. 1, Fig. 22) for Sioux half-breeds. The reservation was, however, never used by the half-breeds, who in 1854 relinquished it for scrip which entitled them to select an equal area of unoccupied public land either in the reservation or elsewhere in the United States. The subsequent history of this generous grant is told later in the present chapter.

The first cessions of any considerable size in Minnesota were made by the Chippewas and Sioux in 1837 as a part of much larger cessions in Wisconsin. They comprised the triangle between the St. Croix and the Mississippi Rivers (Nos. 3 and 4, Fig. 21). The line between the two cessions constituted a part of the boundary between the Chippewas and the Sioux which had been established in 1825 by the treaty of Prairie du Chien, and which is shown by the heavy black line in Figure 21. Comparatively little of the area was of top quality for agriculture, but the northern part contained much valuable timber which the lumber industry, just beginning to get under way, was eager to exploit.

Two relatively small, but still sizable, cessions were made by the Chippewas in 1847 (Nos. 5 and 6, Fig. 21). Both tracts served for a short time as reservations. The southern tract (Long Prairie Reservation) replaced the reservation in the southeastern corner of the state (No. 2, Fig. 22) formerly assigned to the Winnebagoes. They ceded it to the United States in 1855 in return for the Blue Earth Reservation in the south central part of the state (Nos. 9-a and 9-b, Fig. 22). The Blue

EVOLUTION OF LAND OWNERSHIP

Earth Reservation, in turn, was ceded by treaties in 1859 and 1863, the later of which provided for the removal of the Winnebagoes to a new reserve to be set apart for them in Dakota.

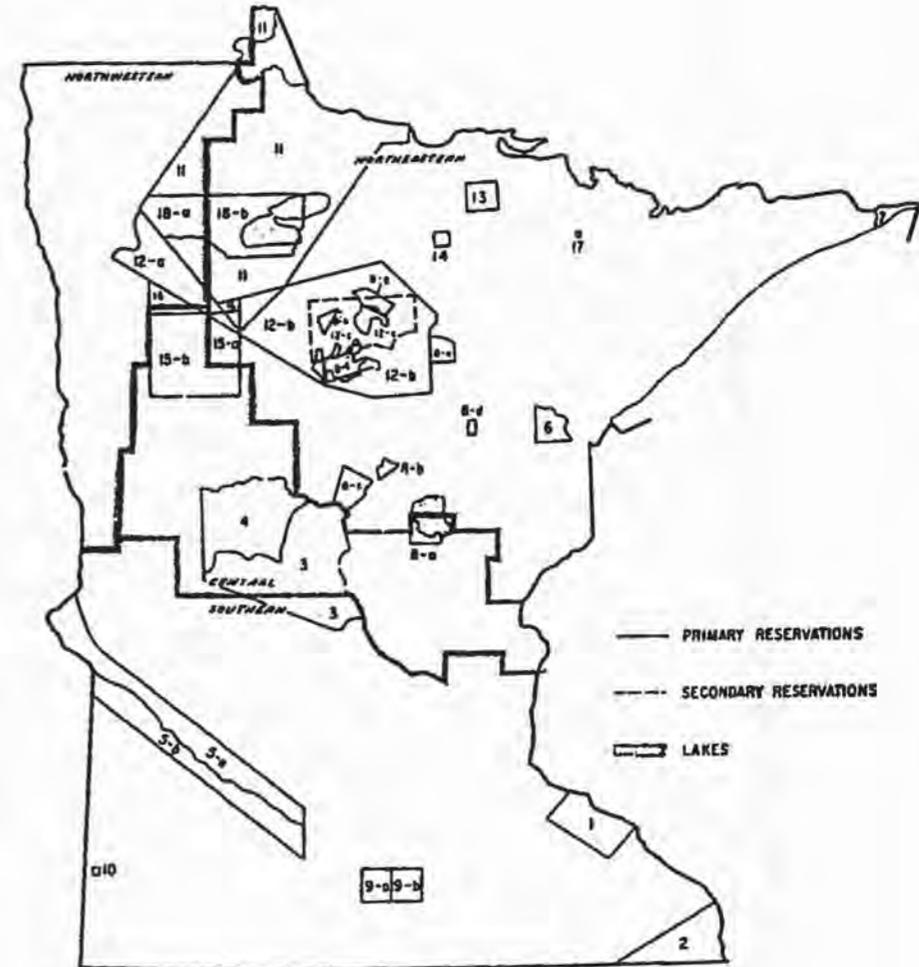


Figure 22. Chief Reservations of Land for Indians.

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Table 36. Chief Cessions of Land in Minnesota by Indians.

No. ON FIG. 21	YEAR	DESCRIPTION
1	1805	Ceded by the Sioux (September 23) to enable the United States to establish military posts.
—	1826	Chippewas (August 5) ceded their right to search for, and carry away, any metals or minerals from any part of their country.
2	1830	Ceded by several bands of Sioux and other Indian tribes by the treaty of Prairie du Chien (July 15) as part of a much larger cession in Iowa and Missouri. (a) Reserved on September 15, 1832, for the Winnebagoes, by whom the right of occupancy was ceded on November 1, 1837, and the right of hunting on October 13, 1846. (b) Sac and Fox Indians on October 21, 1837, ceded all right or interest in this tract which they might claim under the phraseology in the treaty of July 15, 1830. A cession of the same tract, for the same reason, was made by the Iowa Indians on November 23, 1837.
3	1837	Ceded by the Chippewas (July 29), together with a much larger cession in Wisconsin.
4	1837	Ceded by the Sioux (September 29), together with a much larger cession in Wisconsin.
5	1847	Ceded by the Chippewas of the Mississippi and Lake Superior (August 2). This tract was reserved for the Winnebagoes, by whom it was ceded to the United States on February 27, 1855, in return for the Blue Earth Reservation (Nos. 9-a and 9-b, Fig. 22).
6	1847	Ceded by the Pillager band of Chippewas (August 21). This tract was granted on October 18, 1848, to the Menominees, who refused to occupy it and on May 21, 1854, relinquished all right to it in return for a reservation on the Wolf River in Wisconsin, plus a payment of \$242,686.
7	1851	Ceded by the Sisseton and Wahpeton bands of Sioux by the treaty of Traverse des Sioux (July 23) and by the Mde-wakanton and Wahkeputa bands of Sioux by the treaty of Mendota (August 5). A tract not less than 10 miles wide on each side of the upper Minnesota River was reserved for their use. For the history of this reservation see No. 5, Table 37.
8	1854	Act of July 17, 1854, provided for the issuance of scrip to Sioux half-breeds in return for their relinquishment of all claim to this tract, which in 1830 had been reserved for their use.
9	1854	Ceded by the Chippewas of Lake Superior (September 30), with reservations for the Fond du Lac and Grand Portage bands.
10	1855	Ceded by the Chippewas of the Mississippi (February 22), together with "all interest they may have in any other lands

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11	1863	Ceded by the Red Lake and Pembina bands of Chippewas on October 2, with reservation of the area east of the ceded tract (No. 14, Fig. 21, and No. 11, Fig. 22).
12	1866	Bois Fort band of Chippewas on April 7 ceded all claim to land everywhere, and especially to the reserve held by them at Vermilion Lake, but provision was made for the establishment of the Nett Lake and Deer Creek reservations (Nos. 13 and 14, Fig. 22).
13	1867	These two tracts had been included in the cessions of February 22, 1855, and October 2, 1863. On May 7, 1864, they had been reserved for certain bands of Chippewas (Nos. 12-a and 12-b, Fig. 22). By the treaty of March 19, 1867, they were again ceded to the United States, with a sizable reservation in the eastern tract (No. 12-c, Fig. 22).
14	1889	Ceded by the Red Lake and Pembina bands of Chippewas (July 8 and July 29), with the exception of the Red Lake Reservation (Nos. 18-a and 18-b, Fig. 22).
15	1889	This part of the original White Earth Reservation was ceded to the United States on July 29. It is the same tract as No. 15-a, Fig. 22.
—	1889	Other bands of Chippewas, in agreements negotiated under the act of January 14, ceded the Grand Portage, Fond du Lac, Bois Fort (Nett Lake), Deer Creek, Mille Lacs, Leech Lake, Lake Winnibigoshish, and Cass Lake reservations. These cessions were made with the understanding that the Chippewas in northern Minnesota would be concentrated on the White Earth and Red Lake reservations, but many of the Indians refused to move, and the cessions never actually materialized.

Table 37. Chief Reservations of Land in Minnesota for Indians.

No. ON FIG. 22	YEAR	DESCRIPTION
1	1830	Wabasha Reservation was set apart for Sioux half-breeds by the treaty of Prairie du Chien (July 15). They refused to occupy the tract, and provision for its purchase for \$150,000 was included in the treaty of August 5, 1851, which the Senate refused to ratify. Instead, an act of July 7, 1854, liquidated all claims of the half-breeds to the tract by the issuance to them of scrip, which could be located on either surveyed or unsurveyed public lands open to entry anywhere in the United States.
2	1832	Reserved by the treaty of September 15 for the Winnebago Indians. They relinquished the right of occupancy on

- November 1, 1837, and the right of hunting on October 13, 1846.
- 3 1846 By treaty of October 13, the United States agreed to give the Winnebagoes a tract of not less than 800,000 acres north of St. Peter's River and west of the Mississippi. The tract finally selected (Long Prairie Reservation) was that ceded by the Chippewas on August 2, 1847 (No. 5, Fig. 21). The Winnebagoes were reluctant to move from Iowa, and relatively few settled on the tract, which was re-ceded to the United States on February 27, 1855, in return for the Blue Earth Reservation (Nos. 9-a and 9-b, Fig. 22).
- 4 1848 Reserved by the treaty of October 18 for the Menominees, who refused to occupy it. On May 21, 1854, they relinquished all right to the tract in return for a reservation on the Wolf River in Wisconsin plus a payment of \$242,686.
- 5 1851 A tract not less than 10 miles wide on each side of the Minnesota River was reserved for the Sisseton, Wahpeton, Mdewakanton, and Wahkeputa bands of Sioux by the treaty of Traverse des Sioux (July 23) and the treaty of Mendota (August 5). The Senate in 1852 eliminated this provision, but agreed to pay the Indians 10 cents per acre for the proposed reservation and to give them another tract in lieu thereof; but by the act of July 31, 1854, the original treaty provision was allowed to stand.
- (a) Treaty of June 19, 1858, provided for the purchase by the United States of that portion of the reservation north of the Minnesota River if the Senate should decide that the Indian title to it was valid, which it did.
- (b) Treaty of June 19, 1858, provided for the retention by the Indians of that portion of the reservation south of the Minnesota River. Following the Sioux Outbreak of August 18, 1862, all treaties with the Indians involved were annulled, and their lands within the reservation were forfeited to the United States, by the act of February 16, 1863. By the act of March 3, 1863, the President was authorized to set apart for them a reserve beyond the limits of any state and to remove them thereto, and to sell for their benefit the land in Minnesota from which they were being ousted.
- 6 1854 Reserved for the Fond du Lac band of Chippewas by the treaty of September 30. The actual boundaries were established by Executive Order of December 21, 1858.
- 7 1854 Reserved for the Grand Portage band of Chippewas by the treaty of September 30. Certain unsurveyed islands in Lake Superior were added by Executive Order of March 21, 1917.
- 8 1855 Treaty of February 22 with the Chippewas of the Mississippi made the following reservations:
- (a) Mille Lacs. Ceded to the United States by the treaty of May 7, 1864, on condition that the Indians were not to be compelled to leave the reservation so long as they re-

frained from molesting the persons and property of the whites.

- (b) Rabbit Lake. Ceded to the United States May 7, 1864.
- (c) Gull Lake. Ceded to the United States May 7, 1864.
- (d) Sandy Lake and Rice Lake. Ceded to the United States May 7, 1864.
- (e) Pokegama Lake. Ceded to the United States May 7, 1864.
- (f) Leech Lake. Enlarged by Executive Orders of November 4, 1873, and May 26, 1874.
- (g) Lake Winnibigoshish. Enlarged by Executive Orders of October 29, 1873, and May 26, 1874.
- (h) Cass Lake.

The purpose of the cessions effected by the treaty of May 7, 1864, was to concentrate the Indians around Leech, Winnibigoshish, and Cass lakes. Considerable portions of the reservations surrounding these lakes were included in the Minnesota Forest Reserve by the Morris Act of June 27, 1902.

- 9 1855 Treaty of February 27 granted the Winnebagoes a tract approximately 9 by 18 miles in size on the Blue Earth River in place of the Long Prairie Reservation (No. 3, Fig. 22).
- (a) Treaty of April 15, 1859, authorized the sale of the western half of this tract for the benefit of the Winnebagoes, who were to retain the eastern half.
- (b) Act of February 21, 1863, authorized the sale of the eastern half of the tract after removal of the Indians to a new reserve to be set apart for them in Dakota.
- 10 1858 Yankton Sioux, in connection with the cession of a large area in Dakota (October 2), reserved the use of the Red Pipestone quarry in southwestern Minnesota. Their claim to the area was purchased by the United States in 1928. Pipestone National Monument was established by the act of August 25, 1937.
- 11 1865 Reserved by the Red Lake and Pembina bands of Chippewas by the treaty of October 2, which ceded the area west of this tract to the United States (No. 11, Fig. 21). The reserved area was ceded on July 8, 1889, with the exception of the Red Lake Reservation (Nos. 18-a and 18-b, Fig. 22) which was retained. The western part of the 1889 reservation (18-a) was ceded to the United States by act of February 20, 1904.
- 12 1864 Reserved for the Chippewa of the Mississippi and the Pillager and Lake Winnibigoshish bands of Chippewa by the treaty of May 7, which canceled and superseded a somewhat similar treaty of March 11, 1863. The new reservation was intended to replace the reservations at Mille Lacs, Rabbit Lake, Gull Lake, Sandy Lake, Rice Lake, and Pokegama Lake which were ceded by the same treaty.
- (a) Ceded to the United States March 19, 1867.
- (b) Ceded to the United States March 19, 1867, except for the reservation shown by dashed lines in Figure 21.

- (c) Not included in cessions 12-a and 12-b.
- 13 1866 By treaty of April 7 the United States agreed to set apart not less than 100,000 acres for the Bois Fort band of Chippewas. The tract was later set off so as to include Nett Lake.
- 14 1866 By treaty of April 7 the United States agreed, if practicable, to reserve for the Bois Fort Indians a township on the Grand Forks River near the mouth of Deer Creek. The boundaries of the reserve were formally designated by Executive Order of June 30, 1883. Most of the reservation was later opened to public settlement, and the few Indian allotments that had been made were sold.
- 15 1867 White Earth Reservation was established by the treaty of March 19 with the Chippewas of the Mississippi. One township on the west side of the reservation was purchased for the use of the Pembina band of Chippewas under the act of March 3, 1873.
- (a) Four townships in the northeast corner of the reservation were ceded to the United States on July 29, 1889.
- (b) Constitutes the diminished reservation. The act of June 23, 1926, established a Wild Rice Lake Reserve of about 4,500 acres within the reservation for the exclusive use and benefit of the Chippewas of Minnesota.
- 16 1879 Added to the White Earth Reservation by Executive Order of March 18, which was revoked by Executive Order of July 13, 1883.
- 17 1881 Vermilion Lake Reservation was established by Executive Order of December 20 for the Bois Fort band of Chippewas. This band had been given the right to select a reservation under the treaty of September 30, 1854, and had partially selected an area on Vermilion Lake; but its boundaries had never been accurately defined, and by the treaty of April 7, 1866, they had ceded all claim to it.
- 18 1889 Ceded to the United States by the Red Lake and Pembina bands of Chippewas by agreements of July 8 and July 29. A small tract on the east side of Lower Red Lake was added to the reservation by Executive Order of November 21, 1882.
- (a) Removed from the reservation by the act of February 20, 1904.
- (b) Constitutes the diminished Red Lake Reservation.
- 1889 Other cessions by various bands of Chippewas under the act of January 14 included the Grand Portage, Fond du Lac, Bois Fort (Nett Lake), Deer Creek, Mille Lacs, Leech Lake, Lake Winnibigoshish, and Cass Lake reservations. These cessions were made with the understanding that the Chippewas in northern Minnesota would be concentrated on the White Earth and Red Lake reservations; but many of the Indians refused to move, and the cessions never actually materialized.

AFTER 1849

When the Territory of Minnesota was established by the Organic Act of March 3, 1849, virtually the only land legally open to settlement was that within the triangle between the St. Croix and the Mississippi rivers which had been ceded to the United States in 1837. Throughout the vast area comprising the rest of the Territory the Indian right of occupancy had not been extinguished or the land was in a reservation. Obviously this condition was highly unsatisfactory. Theoretically, all of the rich land in southern and western Minnesota was closed to occupancy by the whites. Practically, the flood of emigrants from the east which had now reached the Mississippi and was pouring ever westward could not be checked. Although illegal, squatting by settlers on both Indian lands and the public domain was the order of the day. (Preemption of unsurveyed land was not permitted in Minnesota until 1854). Conflicts with the Indians, who were becoming increasingly irritated by being pushed around by the white man, were unavoidable.

Prompt extinction of "Indian title" to the enormous area of "Suland" west of the Mississippi River was essential. The first session of the territorial legislature on October 20, 1849, adopted a memorial urging Congress to take action to that end. Even before this date the Secretary of the Interior, at the request of Delegate Henry H. Sibley, had appointed commissioners to negotiate with the Sioux for the cession of as large an area as possible. A year later Congress arranged for the appointment of commissioners for the same purpose.

These events led in 1851 to the treaties of Traverse des Sioux and of Mendota, through which several bands of Sioux made the largest single cession of Indian land in Minnesota's history (No. 7, Fig. 21). In their original form these treaties provided for concentration of the Indians in a reservation which comprised a strip not less than ten miles in width on each side of the upper Minnesota River (Nos. 5-a and 5-b, Fig. 22). The Senate struck out this provision and in lieu thereof authorized purchase of the land in the proposed reservation at ten cents per acre. Temporary use of the reservation by the Indians was to be allowed pending completion of arrangements by the President for their removal to a new location farther west. The treaties as thus amended were approved by the Indians and proclaimed by the President on February 24, 1853. More than a year later (July 31, 1854), the Senate reversed its previous position and authorized the President "to confirm to the Sioux of Minnesota, forever, the reserve on the Minnesota River now occupied by them."

In 1858 a new treaty authorized purchase by the United States of that portion of the reservation north of the river, and removal of the Indians therein to the portion south of the river. A drastic revision of this arrangement resulted from the Sioux Outbreak of August 18, 1862.

Characterized by Folwell (53) as "one of the bloodiest of Indian outbreaks on the continent," it led to the devastation or depopulation of an area 200 miles long and averaging 50 miles wide. An estimated 644 citizens were massacred and 94 soldiers killed in battle, with property damage of more than \$2,000,000.

So serious was the situation that on August 27 Governor Ramsey appealed to the President to halt the draft for the Union army in order to release the young men likely to be drafted for service against the Indians. Lincoln's reply was characteristic: "Attend to the Indians. If the draft cannot proceed of course it will not proceed. Necessity knows no law. The Government cannot extend the time."

On September 6 the Governor telegraphed again: "Those Indian outrages continue. . . This is not our war; it is a national war. . . Answer me at once. More than 500 whites have been murdered." Before sundown of the same day the War Department created the Military Department of the Northwest under the command of Major General John Pope and ordered him to employ whatever forces might be necessary to suppress hostilities. It proved unnecessary, however, for him to effectuate his ambitious plans for mobilizing an army, since the military power of the Sioux was shattered by an encounter at Wood Lake on September 23.

Demands for extermination of the "fiends" led to the summary trial by a military commission of a large number of the prisoners, of whom 307 were convicted and sentenced to death. At President Lincoln's command a complete record of the convictions was forwarded to him for action. On December 6, in his own handwriting, he ordered the execution of 39 of the condemned Indians and half-breeds (one later received a reprieve) and the holding of the others subject to further orders. The hangings took place at Mankato on December 26 in the presence of a great crowd, and the next day General Sibley wired the President that "everything went off quietly."

Congress reacted promptly to the Sioux Outbreak by passage on February 16, 1863, of an act which annulled all treaties with the Indians involved and forfeited their lands within the reservation to the United States. Two weeks later another act authorized the President to remove the Indians to a tract to be set apart for their use beyond the limits of any state, and to sell for their benefit the land in Minnesota from which they were being ousted. An exception to the wholesale removal of the Indians was made, however, in the case of the Mdewakanton Sioux, who had been friendly to the United States during the outbreak.

In order to provide homes for this group of Indians, about 1,150 acres were purchased during the years 1887 to 1891 in Dakota, Goodhue, Redwood, Scott, and Wabasha counties. The lands in Dakota and Wabasha

counties, aggregating about 150 acres, were later turned over to the Army Corps of Engineers and to the Fish and Wildlife Service. Following passage of the Indian Reorganization Act (Wheeler-Howard Act) of 1934, an additional 2,280 acres were bought in Goodhue, Redwood, and Yellow Medicine counties, bringing the total area purchased for the benefit of the Sioux Communities to 3,281 acres.

The extensive cessions of 1851 were accompanied by an attempt to liquidate the Wabasha Reservation on the west side of the Mississippi River in southeastern Minnesota which had been set apart for Sioux half-breeds in 1830 but never occupied by them (No. 1, Fig. 22). The original drafts of the treaties provided for doing so by a payment of \$150,000, but this item was eliminated by the Senate. Final settlement was effected by the act of July 17, 1854, to which reference has already been made, and which provided for the issuance of scrip to the half-breeds in return for the relinquishment of their claims to the tract.

In 1854, the huge "arrowhead" triangle in northeastern Minnesota (No. 9, Fig. 21) was ceded to the United States by the Chippewas of Lake Superior, with reservations for the Fond du Lac and Grand Portage bands (Nos. 6 and 7, Fig. 22). The next year (February 22, 1855) the Chippewas of the Mississippi ceded a sizable area in central Minnesota (No. 10, Fig. 21), together with "all interest they may have in any other lands in Minnesota or elsewhere." Small reservations were retained at Mille Lacs, Rabbit Lake, Gull Lake, Pokegama Lake, Sandy Lake, Rice Lake, Leech Lake, Lake Winnibigosisish, and Cass Lake. These two cessions, which included an enormous area in northern Minnesota, were of primary interest to the lumber and mining industries.

A cession in 1863 by the Red Lake and Pembina bands of Chippewas (No. 11, Fig. 21) and another in north central Minnesota in 1866 by the Bois Fort band (No. 12, Fig. 21), with reservations at Nett Lake and Deer Creek, completed the relinquishment of "Indian title" to all land in the state except a rhomboidal area surrounding Red Lake and including the Northwest Angle. This area was retained by the Red Lake and Pembina bands until 1889, when it too was ceded to the United States, with the reservation of the sizable Red Lake Reservation (Nos. 18-a and 18-b, Fig. 22). The western portion of that reservation (18-a) was ceded in 1904.

During the 1860's there were substantial, and rather complicated, changes in the reservations that had been set aside for the Chippewas in the preceding decade. In 1864 the Mille Lacs, Rabbit Lake, Gull Lake, Sandy Lake, Rice Lake, and Pokegama Lake Reservations (Nos. 8 a-e, Fig. 22), which had been established in 1855, were ceded in return for two new reservations farther north (Nos. 12 a-c, Fig. 22). Then in 1867 the western of these two reservations (12-a) and part of the eastern reservation (12-b) were ceded back to the United States. The rest of the latter

reservation (12-c), together with some adjacent portions of the Leech Lake, Lake Winnibigoshish, and Cass Lake reservations, established in 1855 and subsequently modified by several Executive Orders, became the Greater Leech Lake Reservation.

At the same time, the White Earth Reservation (Nos. 15-a and 15-b, Fig. 22) was established by the Treaty of March 19, 1867, with the expectation that it would eventually become the main home of the Chippewas outside of the Red Lake band. One township on the west side of the reservation was purchased for the use of the Pembina band of Chippewas in 1873. A cession of four townships in the northeast corner of the reservation in 1889 (15-a) resulted in the present diminished White Earth Reservation (15-b).

Some 28,000 acres within the reservation were purchased by the Resettlement Administration during the 1930's as part of the program for the retirement of submarginal lands. They are administered by the Bureau of Indian Affairs, but the proceeds from timber sales are deposited in the General Treasury, and are not available for the benefit of the Indians.

NELSON ACT OF 1889

The Nelson Act of January 14, 1889, providing for "the relief and civilization of the Chippewa Indians in the State of Minnesota" was the outcome of attempts extending over a period of some twenty-five years to effect a greater concentration of the Indians in the northern part of the state. A determined move in this direction came in 1886 with the creation by Congress of the Northwest Indian Commission. At their first meeting with the Indians at White Earth, the commissioners presented their proposal in attractive terms: "The Great Father thinks that if all your tribes were together it would make you strong and make you happier. . . You have a good country . . . one of the richest in any part of the United States. . . You have good homes here. . . We want you to keep these homes . . . and be a strong, prosperous, and happy people . . . We have sixty millions of people in this country, and it will be only a short time before there will be one hundred million. . . The pressure for Indian land is terrible." To the objection that bringing a large body of uncivilized Indians to White Earth would fill the reservation with paupers, the commissioners replied that the Great Father would make them rich the moment they arrived.

The commission succeeded in negotiating the desired agreements with all of the Indians concerned except the small group at Mille Lacs and the much larger Red Lake and Pembina bands. The impracticability of moving these two bands, for the time being at least, was recognized from the outset. Although ratification of the agreements was recommended by the Commissioner of Indian Affairs and the Secretary of the Interior,

Congress substituted for them a bill drawn by Senator H. L. Dawes of Massachusetts but introduced by Senator Knute Nelson of Minnesota. The bill was in large part an attempt to apply to local conditions the General Allotment Act of February 8, 1887, which provided for the replacement of tribal lands by allotments to individual Indians. The main features of the Nelson Act of January 14, 1889, were as follows:

1. The President was authorized to appoint a commission of three members "to negotiate with all the different bands or tribes of Chippewa Indians in the State of Minnesota for the complete cession and relinquishment in writing of all their title and interest in and to all the reservations of said Indians in the State of Minnesota, except the White Earth and Red Lake Reservations, and to all and so much of these two reservations as in the judgment of the commission is not required to make and fill the allotments required by this and existing acts." (That money went further in 1889 than in 1959 is indicated by the fact that the commissioners were allowed compensation of \$10.00 per day plus traveling expenses and board not to exceed \$3.00 per day.)

2. After the cessions had been obtained, approved, and ratified, all Indians on the Red Lake Reservation were to be allotted lands in severalty on that reservation, and all other Indians were to be allotted lands in severalty on the White Earth Reservation, to which they were to be removed under the direction of the commission. Any Indian residing on an existing reservation was, however, permitted to take his allotment in severalty on that reservation and to continue to reside there.

3. After completion of the cessions, all ceded lands were to be surveyed and classified as "pine lands" and "agricultural lands," which included all other lands irrespective of their character. All pine lands were to be sold, after advertisement, in 40-acre lots, at public auction at not less than their appraised value, which was to be not less than \$3.00 per thousand board feet. Lands not sold at the auction were subject to private sale at not less than their appraised value. Agricultural lands were to be opened to actual settlers, who, in addition to meeting the requirements of the Homestead Act, had to pay \$1.25 per acre for the land.

4. All receipts were to be placed in the United States Treasury to the credit of all the Chippewa Indians in the State of Minnesota as a permanent fund. Interest on this fund was to be used annually for the benefit of the Indians, and at the end of fifty years the principal was to be divided in equal shares among all of the Chippewas and their progeny then living.

President Harrison appointed Henry M. Rice as chairman of the commission to conduct the negotiations, which extended from June 29 to November 21, 1889. The eloquence of the commissioners suc-

ceeded in obtaining cessions of all the Chippewa reservations except Red Lake and White Earth, to which the residents of the other reservations were to be removed. The Red Lake Reservation was greatly reduced in size (from No. 14, Fig. 21 to Nos. 18-a and 18-b, Fig. 22); and four townships were removed from the northeastern corner of the White Earth Reservation.

Removal of the Indians to their prospective new homes proceeded slowly. By June 7, 1894, out of 4,000 Indians subject to removal, only 775 had moved from the old reservations to White Earth to stay. The Secretary of the Interior consequently instructed the commission to notify the Indians concerned that their option of moving to White Earth would cease on October 1, 1894, and removals thereafter were negligible. Reluctance to move was due in part to an 1891 amendment of the General Allotment Act which reduced the size of Indian allotments generally from 160 to 80 acres. In spite of continual protests by the Indians, the larger allotment was not restored in the White Earth Reservation until 1904, under circumstances which lead to the suspicion that the action was taken for the "relief" of others than the Indians.

SALES OF CEDED LAND AND TIMBER

Sale of the ceded lands did not proceed as promptly as the settlers in the Red River Valley and the lumbermen had hoped. Under the terms of the Nelson Act, no sales could take place until surveys and appraisals of all the ceded lands had been completed. This situation was met by an 1896 amendment to the act which authorized the sale of pine lands relinquished from the White Earth and the Red Lake reservations whenever an area of 100,000 acres, or less in the discretion of the Secretary of the Interior, had been surveyed and appraised. "Dead and down timber" could be cut and sold without the land by Indians on reservations under an act of February 16, 1889; and in 1897 similar sales were allowed on ceded lands. There was no loss of time in salvaging dead and down timber, which often appeared to be inextricably mixed with live timber.

Indians were induced to apply for permits to cut and sell bodies of dead and down timber located by representatives of lumber companies. As soon as the permits were issued, they would be turned over to logging contractors. Charges of incompetence, collusion, and fraud soon began to pour into Washington. One writer alleged that not over five per cent of the pine timber involved could honestly be classed as dead and down and that the whole business was "a fraud and a steal from beginning to end." Binger Hermann, Commissioner of the General Land Office, who was in charge of the issuance of permits on ceded lands, replied that he had given the matter careful attention and had found no evidence of fraud, injustice, or carelessness.

Continuing complaints nevertheless led to further investigations by the General Land Office, with contradictory findings. When Ethan Allen Hitchcock became Secretary of the Interior on February 20, 1899, he promptly used a new broom to sweep out the mess. He suspended all operations on the ceded lands, made a fresh investigation of the situation, and came to the conclusion that the sale of dead and down timber was "the most convenient vehicle for fraud that had yet been furnished those who were seeking to despoil the Indians." His actions and subsequent developments led to passage of the Morris Act of June 27, 1902, which greatly improved the situation.

That act abolished sales of dead and down timber on ceded lands; authorized the sale of timber without the land, on sealed bids, at stumpage prices of not less than \$5.00 per thousand board feet for white pine and \$4.00 for Norway pine; provided for the actual scaling of cut logs; and opened cutover lands to homesteading at \$1.25 per acre. Receipts increased greatly, and the cut usually exceeded government estimates. Another section of the Morris Act which provided for the creation of the Minnesota Forest Reserve will be discussed later.

TRAGEDY OF WHITE EARTH

A word should be added concerning the history of the White Earth Reservation and the Red Lake Reservation. When the White Earth Reservation was established in 1867, it was anticipated that eventually all the Chippewas of Minnesota would be consolidated there "in a rich and beautiful country, where, safe from the white man's whisky jug, they would become prosperous and orderly citizens." That this dream turned into a nightmare is attributed by Folwell to "the immemorial greed of the white man for land and for the exploitation of natural resources." These resources consisted of good quality timber, largely pine, in the eastern two-thirds of the reservation, and of fertile, rolling prairie in the western third. Naturally they were regarded with acquisitive eyes by the rapidly developing lumber and farming interests in that part of the state. To the white man it seemed unreasonable that an area of about 800,000 acres should be permanently reserved for a small group of Indians, who in 1894 were estimated to number only 1,287 and to have under cultivation only 9,125 acres of land.

The first onslaught on the forest, as has previously been mentioned, centered on the cutting of "dead and down timber" which had been provided for in the Nelson Act of February 16, 1889; but this proviso, even when liberally interpreted, did not go far enough. The Bureau of Indian Affairs had tried to avoid making allotments of timberland, and after 1891 allotments had been limited to 80 acres. Two acts

fathered by members of Congress from Minnesota remedied this situation. In 1904, Senator Moses E. Clapp succeeded in obtaining legislation authorizing the Chippewa Indians of Minnesota to sell the timber on their allotments with the approval of the Secretary of the Interior; and Representative Halvor Steenerson was equally successful in raising the area of individual allotments on the White Earth Reservation to the full 160 acres which had been promised in 1889. One act thus provided for the sale of allotment pine, while the other act provided the pine.

Administration of both allotments and sales was harshly criticized. All bids on the first large sale, which lumped the timber on individual allotments throughout the reservation, were rejected as unsatisfactory by the Secretary of the Interior. The next year (June 21, 1906), a rider to the Indian appropriation bill introduced by Senator Clapp provided that "all restrictions as to sale, incumbrance, or taxation for allotments within the White Earth Reservation in the State of Minnesota, now or hereafter held by adult mixed-blood Indians are hereby removed . . . and as to full bloods, said restriction shall be removed when the Secretary of the Interior is satisfied that such adult full-blood Indians are competent to handle their own affairs." The scope of this proviso was enlarged in 1907 by changing the word "now" to "heretofore."

The way was thus opened for the acquisition of Indian allotments on a large scale. In 1910 the local agent of the Bureau of Indian Affairs reported that numerous banks, land dealers, and other concerns made it their business to handle Indian lands. The number of allegedly adult mixed-bloods and competent full-bloods who wished to sell was amazing. Purchased lands for the most part found their way into the hands of settlers and lumber companies, and logging operations on the reservation boomed. An investigation of the situation in 1909 by two inspectors from the Bureau of Indian Affairs revealed that fully 90 per cent of the allotments to full-bloods had been sold or mortgaged and that 80 per cent of the entire reservation had passed into private hands. Full-bloods had received not more than 10 per cent of the full value of their land and timber. In scarcely any case did the Indian know what he was doing.

This report led to the initiation by the Department of Justice of some 1,600 suits in equity on behalf of the Indians. The prosecution was greatly hampered by a decision of the United States Supreme Court in 1914 that a person having any identifiable amount of blood other than Indian was a mixed-blood, and therefore eligible under the Clapp rider of 1906 to sell his allotment. Dr. Aleš Hrdlička, an anthropologist connected with the National Museum, found only 126 full-bloods out of 5,173 allottees. Most of the suits, which dragged on for some ten years,

were eventually settled out of court. A member of the Board of Indian Commissioners in 1920 wrote that "the records of White Earth Indian exploitation by unscrupulous white men, aided by their hired mixed-blood agents, constitute some of the blackest pages in the history of the American Indian." Not only did the Indians suffer heavy financial loss, but the integrity of the reservation was destroyed and its resources were seriously depleted.

RED LAKE RESERVATION

The history of the Red Lake Reservation is less tragic. This is due largely to the fact that the Red Lake band has preferred to keep its reservation in tribal ownership and has consistently refused to let its members accept allotments. With a single exception, no use has ever been made of the provisions for allotments in the agreement of July 8, 1889, under which the reservation was established, or in the act of February 20, 1904, which ceded the western portion of the reserve to the United States. The latter act, which was passed after protracted negotiations with the Indians, also provided that the ceded land should be sold in parcels of 160 acres at no less than \$4.00 per acre for their benefit, and that the Red Lake band should possess its diminished reservation independent of all other Chippewa bands.

In order to provide for the orderly harvesting of the timber on the reservation, Congress on May 18, 1916, established the Red Lake Indian Forest of about 110,000 acres, to be administered by the Secretary of the Interior "in accordance with the principles of scientific forestry, with a view to the production of successive timber crops." After payment of the expenses of management, the proceeds were to be deposited in the Treasury to the credit of the Red Lake Indians, with interest at four per cent, which the Secretary of the Interior was authorized to spend for the benefit of the Indians.

The Red Lake Indian Forest is unique in that it is the only such forest which has been established either by Congress or by the President. The first timber sale from it was made in 1917 to the International Lumber Company. Somewhat more than 105 million board feet were involved, for which the company paid nearly \$1,400,000. Following this sale, the government decided to do the logging and milling on the reservation, instead of selling the stumpage, and a sawmill was erected at Redby under authority of an act of June 5, 1924. Another profitable enterprise is the fisheries plant, which was constructed in 1924 and 1925 and is operated by the Red Lake Fisheries Association.

GENERAL ALLOTMENT ACT OF 1887

The General Allotment Act (Dawes Act) of February 8, 1887, marked a sharp break in the policy of the federal government in the handling

of Indian affairs. Prior to that time, nearly all of the treaties and agreements negotiated with the Indians for the cession of their lands had provided for the establishment of reservations where tribal ownership would prevail and where the Indians would live as wards of the Great Father and the Grand Council. There had, however, been many allotments in severalty, usually to specified individuals, both in Minnesota and elsewhere; and by 1885 the government had issued over 11,000 patents to individual Indians and 1,290 certificates of allotment.

In the late 1870's there was a growing public opinion in support of the allotment method. The Commissioner of Indian Affairs in 1878 expressed the view that allotment "is a measure corresponding with the progressive age in which we live, and is endorsed by all true friends of the Indian, as is evidenced by the numerous petitions to this effect presented to Congress from citizens of the various states." The movement culminated in 1887 with the passage of the General Allotment Act, the main provisions of which were as follows:

1. The President was authorized to allot lands in severalty in any reservation created by treaty, act of Congress, or Executive Order when in his opinion any part of the reservation is "advantageous for agricultural and grazing purposes."
 2. An allotment of 160 acres was authorized for each head of a family, with smaller allotments for others, to be selected by the allottee subject to approval by the Secretary of the Interior.
 3. Should any Indians fail to take up allotments within four years after the President has directed that allotments should be made, the Secretary of the Interior was authorized to instruct the local agent to do so for them.
 4. Each allottee was to receive a trust patent which was to run for 25 years, after which he would receive a patent in fee simple unless the period were extended by the President.
 5. Upon the completion of the allotments and the issuance of trust patents, the allottees were to be subject to the laws, both civil and criminal, of the state in which they resided. This provision did not change the guardian-ward relationship between the government and the Indian, nor did it deprive the tribe of the right to regulate the domestic affairs of its members.
 6. Citizenship was extended to all native Indians to whom allotments were made, and also to those who had taken up residence separate and apart from any reservation and had adopted the habits of civilized life.
- The act was interpreted as legalizing reservations established by Executive Order without authority of Congress. The President's power to establish reservations was, however, withdrawn in 1919 by an act

which provided that "hereafter no public lands of the United States shall be withdrawn by Executive Order, proclamation, or otherwise for or as an Indian reservation except by act of Congress." In 1927 a similar restriction was applied to any change in the boundaries of existing reservations, but temporary withdrawals by the Secretary of the Interior were still permitted.

Numerous amendments of the General Allotment Act have been made, chiefly in the way of tightening its original provisions. In 1891 allotments to heads of families were reduced to 80 acres; but, as has already been noted, allotments of 160 acres were again permitted on the White Earth Reservation in Minnesota under the Steenerson Act of 1904. A further change was made in 1910, when allotments were limited to 80 acres of agricultural land, 160 acres of grazing land, and 40 acres of irrigable land. This same act provided, under certain conditions, for allotments in national forests of land more valuable for agriculture or grazing than for the timber thereon.

The act of May 6, 1906, provided that citizenship should not be extended to allottees until the end of the trust period and the issuance of a patent in fee simple; that the Secretary of the Interior might issue a patent in fee simple at any time to any allottee judged by him to be "competent and capable of managing his affairs; and that until the issuance of patent in fee simple, all allottees to whom trust patents have been issued shall be subject to the exclusive jurisdiction of the United States." The act also provided that when an allottee dies during the trust period, the Secretary may issue a patent in fee simple to the heirs or sell the land for their benefit. It was under this act that much "dead Indian land" passed into the hands of white men in the western part of the White Earth Reservation.

Many amendments to the General Allotment Act have dealt with the subjects of leases and sales. Under the act of August 9, 1955, leases of allotted lands may be made for ten years for grazing purposes and for twenty-five years for other purposes.

INDIAN REORGANIZATION ACT OF 1934

As time passed, it became increasingly evident that the beneficent purpose of the General Allotment Act to absorb the Indian into the community as an independent, land-owning citizen was not being achieved in practice. Allotted lands were not remaining in Indian ownership but were being acquired by white men for agriculture, logging, mining, and other purposes. The House of Representatives Committee on Indian Affairs in 1934 stated that through the allotment system the Indians had parted with 90 million acres of their land in the past fifty years. On its recommendation, Congress on June 18 of that year passed the Indian Reorganization Act (Wheeler-Howard Act),

the primary objectives of which were to stop the alienation of lands needed for the present and future support of ward Indians, to stabilize Indian tribes, to permit these tribes to equip themselves with the devices of modern business by forming themselves into business corporations, and to provide financial credit and educational opportunities for the Indians. To promote these ends, the act:

1. Prohibited further allotments in severalty for all tribes accepting the provisions of the act.
2. Extended the periods of trust and of restrictions on alienation until otherwise directed by Congress.
3. Authorized the Secretary of the Interior to restore to tribal ownership the remaining surplus lands of any Indian reservation heretofore opened for sale or any other form of disposal.
4. Forbade the sale of restricted Indian lands except under certain specified conditions.
5. Authorized the Secretary of the Interior to acquire by purchase, gift, or exchange any lands in or out of a reservation, including trust allotments, and to add such acquired lands to existing reservations.
6. Authorized the Secretary of the Interior to handle the forest and range lands on Indian reservations on the basis of sustained yield.
7. Provided for the organization of Indian tribes for their common welfare, subject to the approval of the Secretary of the Interior, and for the issuance by him of a charter of incorporation.
8. Authorized the establishment of a revolving credit fund and loans to Indians for educational purposes.
9. Provided that the act as a whole should not apply to any reservation where a majority of the Indians voted against its application.

The Minnesota Chippewa Tribe voted to accept the Indian Reorganization Act, and a constitution and bylaws for the tribe were approved in 1936. A federal corporate charter for the tribe, which cannot be revoked or surrendered except by act of Congress, was ratified in 1937. The Red Lake Band adopted a constitution on April 13, 1918, many years before the passage of the Indian Reorganization Act, which it has never accepted.

Both the Lower Sioux Community in Redwood County, which also exercises jurisdiction over the Prior Lake group in Scott County, and the Prairie Island group in Goodhue County have organized under the act. Each group is now operating with a constitution and bylaws of its own. The Upper Sioux Community in Yellow Medicine County has not organized under the act but is operating independently as a community group.

As of June 30, 1846, since when there have been few changes, the

following lands which were ceded to the United States in 1889 have been restored to the reservations indicated:

RESERVATION	ACRES
Red Lake	156,698
Nett Lake	19,633
Leech Lake	5,681
Grand Portage	9,278
White Earth	2,727
Fond du Lac	975
	<hr/>
	194,992

These restorations were supplemented by appropriations under the Reorganization Act for the purchase of 16,042 acres for the Minnesota Chippewa Tribe and of 22,040 acres for the Grand Portage Band of Chippewa Indians. In addition, tribal funds were used under the act for the purchase of 14,502 acres. Most of these purchases were made in the White Earth and Grand Portage reservations.

Purchases under the act for the Sioux Communities in southern Minnesota totaled 2,280 acres.

Little use has so far been made of the exchange provisions of the Reorganization Act. Plans are, however, being developed for the exchange of lands with the Forest Service and with private corporations, with a view to effecting better management of the lands owned by the Minnesota Chippewa Tribe.

FEDERAL LAND POLICIES

With the cession of its western claims by Virginia in 1784, all of the area which is now included in the State of Minnesota became a part of the public domain. It was therefore under the complete control of the Congress of the United States under Article IV, Section 3, Paragraph 2 of the Constitution, which provides that "The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States." For more than a century the basic policy followed by Congress was to transfer ownership of the public domain to states, individuals, and corporations, of course after liquidation of the Indian right of occupancy.

GRANTS TO THE STATE

The Organic Act of March 3, 1849, "to establish the territorial government of Minnesota" reserved sections 16 and 36 in each township "for the purpose of being applied to the schools in said territory." A sec-

ond reservation for educational purposes was made by the act of February 19, 1851, which directed the Secretary of the Interior to reserve from sale a quantity of land not exceeding two entire townships for the use and support of a university in the territory.

Four distinct land grants were made by the Enabling Act of February 26, 1857:

1. Sections 16 and 36 in each township, reserved by the act of 1849, were granted to the state for the use of schools, with provision for lieu selections wherever a school section had previously been sold or otherwise disposed of.
2. Seventy-two sections of land were reserved for the use and support of a state university, to be selected by the Governor subject to the approval of the Commissioner of the General Land Office.
3. Ten sections of land, to be selected by the Governor, were granted to the state for the purpose of completing the public buildings or for the erection of others at the seat of government.
4. All salt springs within the state, not exceeding twelve in number, with six sections of land adjoining, were granted to the state, to be selected by the Governor and to be used as the legislature should direct.

These grants were made subject to acceptance by the state of the following conditions, which were incorporated in its constitution:

1. "That said state shall never interfere with the primary disposal of the soil within the State, by the United States, or with any regulation Congress may find necessary for securing the title in said soil to bona fide purchasers thereof."
2. "That no tax shall be imposed on lands belonging to the United States."
3. "That in no case shall non-resident properties be taxed higher than residents."

The act also granted the state five per cent of the net proceeds from the sale of public lands within the state, for the purpose of making public roads and internal improvements.

Other land grants for education, internal improvements, railroad construction, swamp reclamation, and parks and forests will be described later under appropriate headings.

EDUCATION. The grant of sections 16 and 36 resulted in the conveyance to the state of approximately 2,900,000 acres of land. Many lieu selections have been made in the case of tracts that had been occupied or reserved prior to transfer of title to the state. One list of lieu selections submitted by the State Auditor on February 9, 1884, included three forties on which the Mountain Iron mine was later opened. The omission of these lands from a substitute list filed by the auditor on January 26, 1888, led to charges that the state had suffered a loss of \$12,000,-

000 of its school fund by reason of a "serious error of judgment or a grave mistake," to a legislative investigation, and to an abortive attempt to bring suit for the recovery of the three forties in question.

The facts that the act of 1851 had reserved seventy-two sections for a "territorial" university and that the act of 1857 had granted seventy-two sections for a "state" university raised the question as to whether two grants had been intended by Congress. The constitutional convention of 1857 did not so understand the situation, but the new board of regents which took office in 1860 convinced itself that Congress intended to give Minnesota a grant for a state university free from all connections with territorial organizations and not "to turn over the debts and prospectively encumbered lands of an old badly managed territorial institution." At their first meeting on April 5, they consequently adopted a memorial asking Governor Ramsey to provide for the selection of the two townships of land for the *state* university incorporated by the last legislature.

Governor Ramsey's selections were not approved by the Department of the Interior, and subsequent efforts to obtain favorable action from the department proved fruitless. It was therefore decided to appeal for relief to Congress, which in 1870 passed an act directing the Commissioner of the General Land Office to approve and certify the seventy-two sections mentioned in the enabling act without taking into account the reservation of 1851. Senator Williams of the Committee on Public Lands explained that the grant made by the enabling act was a distinct transaction from the earlier reservation, and that it had been converted into a donation by an act of March 2, 1861, which specifically granted to the state the land reserved for the territorial university. The 1870 act was lobbied through Congress on a contingent basis by a Minnesota attorney, Henry B. Beard, who received three sections of excellent pine land for his services.

As early as 1796 Congress had reserved all salt springs on public lands for the United States, and had subsequently granted not more than twelve such springs, together with six adjacent sections, to each public-land state as it was admitted to the Union. The grant of 46,080 acres to Minnesota followed this pattern. Of the seventy-two sections selected by the state in 1858, all but eighteen lay within the present limits of Otter Tail and Wilkin counties. The eighteen sections, which at the time of their selection consisted of unceded, unsurveyed land, were included in 1865 in the White Earth Indian Reservation. Lieu selections were later made for these lands and for certain other tracts to which adverse claims had been established before title passed to the state.

Congress had left the state free to make such use as it pleased of the salt spring lands, and the legislatures of 1870 and 1872 granted 7,648

acres to the Belle Plaine Salt Company, which found no water of commercial value. The legislature of 1873 then placed the remainder of the lands at the disposal of the University for financing the Geological and Natural History Survey, which had been established the previous year. Receipts from the lands were later made available for general University purposes.

An important grant for educational purposes was made by the Morrill Act of July 2, 1862, which gave to each state 30,000 acres of land, either in place or in scrip, for each member of its delegation in Congress. Minnesota's two senators and two representatives entitled it to 120,000 acres, which it naturally chose to select within its own borders. The full amount of the grant, however, applied only to public lands with a minimum price of \$1.25 per acre; and since the state selected some lands with a minimum price of \$2.50 per acre, which was counted as equivalent to two acres of \$1.25 land, it actually received only 94,439 acres. An additional 820,000 acres in Minnesota was taken up under agricultural college scrip granted to states with no public lands or with insufficient such lands to meet their quota.

In 1865 the legislature made an appropriation of anticipated income from the Morrill grant to the Agricultural College of Minnesota at Glencoe, the establishment of which had been authorized in 1858. Title to the land selected was not, however, perfected until 1867, by which time the University of Minnesota was ready to establish a college of agriculture. Not relishing the prospect of supporting two state schools of agriculture, the legislature in 1868 in an act reorganizing the University included a provision "to establish an Agricultural College therein." Since then the University has been the beneficiary of the grant, while Glencoe was appeased by a legislative grant of nearly 5,000 acres of swamp land to the Stevens Seminary there.

Direct grants for educational purposes have thus totaled more than 3,000,000 acres. In addition, education has benefited from the salt springs grant of 46,080 acres.

INTERNAL IMPROVEMENTS. A federal statute of September 4, 1841, granted 500,000 acres of land, for purposes of internal improvement, to the nine public-land states then in the Union and to such new states as might later be admitted. Curiously enough, in a state which had proved itself so conscious of the value of grants of public land, the existence of this statute was apparently overlooked for many years. Not until 1866 was its right to this particular grant recognized by Minnesota and affirmed by the Department of the Interior. The lands selected soon became involved in the long struggle which centered around redemption of the Minnesota State Railroad bonds, and which will be discussed later in connection with state land policies.

RAILROAD CONSTRUCTION. In the early 1850's, as the population of the territory swelled, the need for railroads to connect it with the rest of the country became increasingly apparent. Captain John Pope, in 1849 in his report on his exploration of the Red River Valley, recommended federal grants of public lands to aid in the construction of railroads from the head of navigation on that river to Mankato and Duluth. Governor Ramsey in 1853, in his message to the territorial legislature, modestly recommended early railroad connections between Lake Superior and the Mississippi and between the Mississippi and the Red River; but he also pictured in glowing terms an eventual "great New Orleans and Minnesota Railroad" which would carry furs and merchandise of the polar land to be exchanged for the products of the sunny South.

Grants by Congress of public lands to Illinois, Mississippi, and Alabama in 1850 and to Missouri in 1851 to aid in the construction of railroads in those states led to the hope that the precedent thus established might be extended to Minnesota. As a first step in this direction, the legislature in 1853 incorporated five railroad companies. The next year Governor Gorman cautioned against trying to move too fast and expressed confidence that "Congress will grant us sufficient land to unlock our ice-bound home, if we confine our request to one point." In accordance with this advice, the legislature in 1854 incorporated only the Minnesota and Northwestern Railroad Company, to which it "granted in fee simple, absolute, without any further act or deed," any land that might be granted to the territory to aid in its construction.

Immediate efforts to obtain such a grant from Congress culminated in the act of June 29, 1854, which granted to the Territory of Minnesota alternate sections of public lands to a distance of six miles on each side of a railroad to extend from Iowa through St. Paul in the direction of Lake Superior, to aid in the construction of the railroad. To make sure that the grant should not automatically inure to the benefit of any particular corporation, the original bill provided that the grant should be "at the disposal of any future legislature of the Territory or State of Minnesota" and should not vest "in any company constituted or organized before the passage of the act." After passage of the bill it was discovered that the word "future" had been omitted, and that the word "and" had been substituted for the word "or" between the words "constituted" and "organized." These changes led the Minnesota and Northwestern Railroad Company, which was not formally "organized" until July 1, to claim title to the grant under its act of incorporation, without further action by the legislature.

This situation led to heated controversy between proponents and opponents of the railroad. On one side it was argued that the changes

constituted "purely verbal changes," and on the other that they were "a deliberate and intended error." Congress reacted promptly by repealing the act of June 29. The repeal took the form of a rider to a bill increasing the pension of one Thomas Bronaugh from \$4.00 to \$8.00 a month, and was approved by the President on August 4. Claim was promptly made that the original land grant was irrevocable and that the repeal was unconstitutional. This view was upheld by the district court of Goodhue County and by the territorial supreme court. The Minnesota legislature in 1855 reenacted the company's charter, with amendments, over Governor Gorman's veto. Final settlement of the issue did not come until 1862, when the Supreme Court of the United States, in a divided decision, ruled that Congress had a right to rescind the trust created by the act of June 29, 1854, and that the repealing act of August 4 was therefore "a valid law."

Meanwhile, the Minnesota and Northwestern Railroad Company, having failed to obtain any of the lands covered by the original grant, passed out of the picture, and other companies entered it. Seven new railroad corporations were chartered by the Minnesota legislature in 1856 and twelve in 1857. Sixteen land grants were made by Congress to aid in the construction of railroads in the South and West. All of these developments encouraged the territory to renew its efforts to obtain a federal land grant in place of the one which had been annulled.

Congress responded generously by passage of the act of March 3, 1857, which provided grants to aid in the construction of four railroads to be selected by the state. The grant consisted of alternate, odd-numbered sections to a distance of six miles on each side of the several roads. Should any of these sections have previously been sold, preempted, or otherwise appropriated, lieu selections were allowed to a distance of fifteen miles from the roads. The general course to be followed by each railroad was specified in the act, but its exact location was left for determination by the state and the railroad. In each case, the state was to receive title to 120 sections (76,800 acres) as soon as the first twenty miles of road had been located. The next conveyance would be made as soon as construction of the first twenty-mile stretch had been completed, and so on. The minimum price for the even-numbered sections retained by the government was raised from \$1.25 to \$2.50 per acre.

A little more than two months after the grant by Congress, a special session of the Minnesota legislature on May 22, 1857, incorporated the Minnesota and Pacific Railroad Company and assigned to it and to three other companies previously incorporated all of the territory's estate and interest in the granted lands, under certain specified conditions. Among other things, the lands were to be exempt from taxes as

long as they remained in the possession of the companies, which were required to pay three per cent of their annual gross earnings in lieu of all taxes and assessments. The four roads selected by the legislature to construct the roads and to benefit from the grant, with the general route to be taken by each, were as follows:

Minnesota and Pacific Railroad Company—from Stillwater, via St. Paul, St. Anthony, and Minneapolis to Breckenridge on the Sioux Wood River (First Division), with a branch from St. Anthony via Anoka, St. Cloud, and Crow Wing to St. Vincent near the mouth of the Pembina River (Brainerd Branch or Western Road). The company was succeeded in 1862 by the St. Paul and Pacific Railroad Company, which in 1871 was authorized by Congress to change its proposed route to the northwest corner of the state (St. Vincent Extension). The company was later reorganized as the St. Paul, Minneapolis, and Manitoba Railway Company, which became a part of the Great Northern Railway system.

Transit Railroad Company — from Winona via St. Peter to the Big Sioux River south of the forty-fifth parallel of north latitude. The company was succeeded in 1862 by the Winona and St. Peter Railroad Company.

Root River Valley and Southern Minnesota Railroad Company — from La Crescent up the Root River Valley to Rochester, and a second line from St. Paul and St. Anthony via Minneapolis up the valley of the Minnesota River to Mankato and thence to the southern boundary of the territory in the direction of the mouth of the Big Sioux River. The name of the company was changed the next day to Southern Minnesota Railroad Company, and in 1862 the latter was succeeded by the Sioux City and St. Paul Railroad Company.

Minneapolis and Cedar Valley Railroad Company—from Minneapolis to a junction point near Mendota and thence via Faribault to the south line of Minnesota west of range 16. The company was succeeded in 1861 by the Minneapolis, Faribault, and Cedar Valley Railroad Company, and in 1863 by the Minnesota Central Railroad Company.

The difficulties surrounding attempts to start construction of these railroads, caused largely by the panic of 1857, and the action of the state in issuing bonds to supply funds for the purpose, will be discussed under state land policy. It should, however, be noted here that Congress on March 3, 1865, increased the size of the grant for each of the four railroads to include alternate, odd-numbered sections to a distance of ten miles on each side of the road, with permission to make lieu selections to a distance of twenty miles. Lands could be conveyed to the state as fast as each ten-mile stretch of road was completed. These changes increased the size of the grant by 66.7 per cent,

and made it possible for the state to obtain title to the lands at shorter intervals than was formerly the case.

Within ten years, Congress made three land grants to the state and one to a private corporation to aid in the construction of additional railroads. The grants to the state were for the benefit of the following railroads:

Lake Superior and Mississippi Railroad Company (1864)—from St. Paul to the head of Lake Superior.

Southern Minnesota Railroad Company (1866) — from Houston through the counties of Houston, Fillmore, Mower, Freeborn, and Faribault to the western boundary of the state.

Hastings and Dakota Railroad Company (1866)—from Hastings through the counties of Dakota, Scott, Carver, and McLeod to such point on the western boundary of the state as the legislature might determine.

These grants all consisted of alternate, odd-numbered sections to ten miles on each side of the road, with lieu selections to a distance of twenty miles. Since the Lake Superior and Mississippi Railroad ran so near the eastern boundary of the state, in 1866 it was given permission to make up any deficiency resulting from this situation by making lieu selections to a distance of thirty miles on the west side of the road.

Federal grants of public lands to the state to aid in railroad construction totaled 8,047,469 acres according to federal records and 8,315,528 acres according to state records. A direct grant to the Northern Pacific Railway Company comprised 1,905,559 acres. In round numbers, therefore, some 10 million acres of public domain were made available to help finance the construction of railroads in Minnesota. This figure represents 20 per cent of the land area of the state, and constitutes by far the largest grant made by the government for any single purpose. In addition, the railroads received 2,900,000 acres of the 4,700,000 acres of swampland granted to the state by the government.

SWAMPLANDS. Congress in 1849 granted to Louisiana "the whole of those swamp or over-flowed lands, which may be, or are found unfit for cultivation." Proceeds from the sale of the lands were to be used exclusively, as far as necessary, for the construction of levees and drains. Similar grants were made in 1850 to twelve other states, and in 1860 to Minnesota and Oregon. The states were given the option of accepting the lands shown by the notes of the public-land surveyors to be swamp or overflowed, or of selecting the lands through their own agents. Minnesota, Wisconsin, and Michigan were the only states which followed the former course. Although this method might seem to have minimized

the chance for fraud, an inspection by the General Land Office in 1887 showed that most of the surveys in the Duluth land district subsequent to 1880 were fraudulent and unreliable. As a result, many tracts of valuable land that were neither swampy nor subject to overflow had been patented to the state.

As in the case of the railroad grants, federal records show that the state received a smaller area of swamplands than do the state records — 4,706,503 acres and 4,777,636 acres, respectively. Either figure amounts to 9 per cent of the total land area of the state. The disposal of these lands will be treated under state land policy.

OTHER GRANTS. The Enabling Act of February 26, 1857, providing for Minnesota's admission to the Union, granted the state ten sections of land (6,400 acres) for the purpose of completing the public buildings, or for the erection of others at the seat of government.

On August 3, 1892, Congress granted to the state all the remaining public land within Itasca State Park, which had been created by the legislature the previous year. The act provided for the reversion of the land to the United States unless it was used exclusively and perpetually for park purposes. The area of the grant, at first estimated at 8,400 acres, proved to be approximately 7,000 acres.

Two other grants were also made for park and forest reserves. In 1904 Congress granted the state 20,000 acres of third and fourth grade public lands for experimental and forestry purposes. The lands were to be selected by the state, were to be as nearly contiguous as possible, and were not to include any tract which in the opinion of the United States Forester should be made part of a federal forest reserve. This grant now constitutes the Burntside State Forest in St. Louis County. The final grant—a small island of half an acre in Bartlett Lake, Koochi-ching County—was made in 1905.

Mention should perhaps be made of two other grants which did not materialize. In 1868 Congress granted Minnesota 200,000 acres of public lands to aid the state in improving the navigation of the Mississippi from the Falls of St. Anthony to the mouth of the Minnesota by the construction of a lock and dam at Meeker's Island. Since no work was done within the two years required by the act for its completion, the land reverted to the United States. The project was later undertaken by the federal government.

In 1906 Congress offered the state Cooper Island (now Star Island) in Cass Lake. Because the island was in an Indian reservation and heavily timbered, the gift was conditioned on payment by the state of such consideration as might be agreed upon by the Secretary of the Interior and the Governor. The timber was appraised at \$125,579.33, but this amount was never paid by the state. Since the state did not

take advantage of the act prior to the establishment of the Minnesota National Forest in 1908, the General Land Office in 1936 ruled that the state's rights had expired and that the island was a part of the Minnesota (now Chippewa) National Forest, by which it has long been administered.

SALES AND GRANTS TO INDIVIDUALS AND CORPORATIONS

Disposal of public lands to individuals and corporations has been effected by a variety of means and has included an area approximately twice as large as that granted to the state.

CASH SALES. The first basic policy for the disposal of the public domain was incorporated by the Continental Congress in the ordinance of 1785. That ordinance provided for the sale of public lands, after survey, at public auction for not less than \$1.00 per acre, with certain reservations for future disposal. After numerous changes the policy was stabilized by the act of April 24, 1820, which provided for the sale of public lands at auction, for cash, to the highest bidder at not less than \$1.25 per acre. Lands not sold at the auction could be disposed of by private sale at not less than the minimum price.

Settlement, timber cutting, and other uses of the public lands prior to their being offered for sale were forbidden by an act of March 3, 1807. The government was authorized to remove trespassers by such measures, including the use of military force, as might be necessary. The law, however, did little to stop "squatting," which was an inevitable result of the slowness of the government to survey the public lands and to offer them for sale. On the frontier, squatters were not regarded as lawbreakers but as "a very respectable class of citizens," "a sturdy class of pioneers," "the hardy yeomanry," and "meritorious and industrious citizens."

This point of view was expressed in 1828 by the Public Lands Committee of the House of Representatives, which stated that the squatter was not a malefactor but a benefactor, whose enterprise should be rewarded by permitting him to buy without competition the tract on which he had settled. Congress recognized squatting, or preemption, as an inescapable fact of frontier life by passing numerous acts legalizing the practice in specific situations and for specific periods. Finally, it approved of preemption as a basic policy in the "Log Cabin Bill" of September 4, 1841.

That act authorized every head of a family, widow, or single man over twenty-one years of age, who was a citizen of the United States or who had declared his intention to become a citizen, to settle upon and purchase at \$1.25 per acre not more than 160 acres of surveyed, unoccupied, unreserved, nonmineral public lands, subject to certain

restrictions. Preemptors must inhabit and improve the land and erect a dwelling thereon. They must swear that the land was being taken up for their own exclusive use and benefit, and any assignment of the preemption right prior to the issuance of patent was null and void. The privilege of preempting unsurveyed lands was extended to Minnesota and four other states in 1854 and to all states in 1862.

Sales of public lands in Minnesota were slow in getting under way. Indian rights of occupancy had to be extinguished and government surveys had to be completed before any land could be placed on the market. The first Indian cession, in 1837, comprised only the relatively small triangle between the St. Croix and Mississippi rivers, and the cession of the huge area of fertile land in the southern and western part of the state did not take place until 1851.

Surveys of the land included in the 1837 cessions were not ordered until 1846, and even then they proceeded slowly. The first sale took place in 1848 at the land office at St. Croix Falls. By the close of 1850, the boundary lines of 144 townships had been run and 34 had been divided into sections. Surveys of the public lands west of the Mississippi were not begun until 1853, and the first sales were not made until 1855, when some 1,178,000 acres in the southeastern corner of the state were offered at public auction.

Meanwhile, settlers were pouring into the territory. Although the population was at first centered largely in the villages of St. Paul, St. Anthony, and Stillwater, it has been estimated that in 1852 there were some 20,000 people in the thirteen counties west of the Mississippi in the region of the lower Minnesota River. Governor Ramsey, in his 1849 and 1851 messages to the territorial legislature, urged the extension of the preemption privilege to these hardy pioneers, legally if not ethically trespassers, who "make the country, its history, and its glory."

Pioneer lumbermen preceded pioneer farmers in their invasion of the public lands. Timber from the upstream pineries was being manufactured into lumber at Marine in 1839, at Stillwater in 1844, and at the Falls of St. Anthony in 1848. Surveying of the forested lands in the northern part of the territory, and later the state, proceeded far more slowly than the need for their utilization to meet the demands of a rapidly expanding population. Yet the land could not be purchased prior to survey; there was no provision for the sale of timber without the land; and preemption was permitted only for agricultural purposes. Under the circumstances, technically illegal cutting was regarded as both justifiable and desirable, since it constituted the only available means of supplying an essential raw material and of opening the country for settlement and cultivation. The surveyor-general of

Wisconsin, Iowa, and Minnesota declared in 1851 that the only remedy for the trespasses was the speedy survey and sale of the lands, so that private owners might preserve what the government could not.

Complete information is not available on the total area disposed of by cash sales (chiefly auction, private, and preemption). They aggregated 2,568,689 acres through June 30, 1871, 3,473,789 acres for the fiscal years 1881 to 1904, and 12,314,000 acres since June 30, 1904. It is probable that total sales (excluding commuted homesteads and timber and stone entries) have been about 9,000,000 acres. Sales were unusually heavy in 1882, 1883, and 1884, with a maximum of 736,500 acres in 1883, presumably because of large preemption sales in the agricultural districts in the state and large auction and private sales in the forested districts.

HOMESTEAD GRANTS AND SALES. Free land, the long-sought goal of the settler, was achieved by the Homestead Act of May 20, 1862. Any person who was the head of a family or over twenty-one years of age and who was a citizen of the United States or had declared his intention to become a citizen could now obtain patent to not more than 160 acres of nonmineral public land subject to sale at a minimum price of \$1.25 per acre, or not more than 80 acres subject to sale at a minimum price of \$2.50 per acre, on payment of certain fees and on proof that he had resided on and cultivated the land for five years. Commutation, or purchase of the land at its regular price, was possible at any time after six months from the date of filing. This period was extended to fourteen months in 1891, and in 1912 the required period of residence and cultivation was reduced to three years.

Immediate advantage was taken of the act. During the first three years following its passage, in the midst of a great war, there were 9,529 homestead entries covering 1,237,722 acres in Minnesota. In the next five years the cultivated area of the state was trebled. Population increased at a more rapid rate than before, particularly in the "back counties."

Widespread use was made of the preemption act and the homestead act for an illegal purpose — to obtain title to land primarily valuable for lumbering and mining rather than for agriculture. Individuals would enter a quarter section, either on their own initiative or more often as agents of a speculator, a lumber company, or a mining company; would make a pretense of settlement for the required period; and after obtaining a patent on payment of \$1.25 per acre would transfer the title. Sometimes the ostensible "settler's" residence on the tract was not only fictitious, but he did not even know his name was being used. The Public Lands Commission reported in 1904 that between 1885 and 1890 a large lumber company obtained thousands of acres

of pine land in Minnesota by filing preemption claims in the names of persons listed in St. Paul and Chicago directories. At the appropriate time, one set of men would make proof on all of the claims before the local land officers, with whom there was a standing agreement to permit this kind of proof for a consideration of \$25.00 per claim.

Under the commutation provision of the homestead act, title to land not included in railroad grants could be obtained on payment of \$1.25 per acre at any time after six months prior to 1891, and at any time after fourteen months subsequent to that date. Its use to obtain timber and mineral lands, already popular in some circles, increased materially after repeal of the preemption act in 1891. The Public Lands Commission found that during the period from July 1, 1899, to June 30, 1903, commuted homestead entries in Minnesota comprised 27 per cent of the final entries. (193). Nearly nine-tenths of the commuted entries were in the timber and mineral belts, as is shown by the following tabulation:

LOCATION	ACRES	PER CENT OF TOTAL
Timber belt	192,189	80
Prospective mineral belt	22,528	9
Agricultural belt	26,660	11
	<u>241,377</u>	<u>100</u>

The amount received by the government for the land and timber in the commuted entries in the timber belt was \$251,307, as against an estimated value for the stumpage alone of \$891,000—not a bad bargain for someone. County records showed that 89.4 per cent of these lands (or of the timber on them) had been sold for approximately \$327,000. If the 10.6 per cent of the total area remaining unsold had the same average value as that sold, the entrymen made a cash profit of about \$76,000 and still had about \$94,000 invested in land, while the purchasers made a net profit of about \$470,000.

In the prospective mineral belt, 96.7 per cent of all commuted entries had been transferred, and the average length of time between date of proof and date of transfer was 1.2 months. A very large number of entries were transferred on date of proof. In the agricultural belt, on the other hand, only 32.6 per cent of all commuted entries had been transferred, and the average period between date of proof and date of transfer was 7.3 months. Moreover, the sale price approximated the value of the land.

The Commission found that within three years after proof almost every sign of habitation and cultivation had disappeared on commuted

claims in the timber and mineral belts, and that in townships where commutation had been heaviest no inhabitant was to be found save an occasional trapper or hunter. Several houses examined had no floors or roofs except "rafters," and all contained a number of large stumps cut from two to three feet high. These shacks were on commuted entries which had been transferred to a well-known lumber company on date of proof. A gesture toward compliance with the law, not unknown elsewhere than in Minnesota, was for the commuter to place an ordinary dry-goods box on his claim, and on the date of proof to swear to the existence on the claim of a good board house, 14 by 16 (unit of measurement not mentioned), with shingled roof, doors, and windows.

These transactions often involved perjury on the part of the commuter and his witnesses, and sometimes subornation of perjury by his employer. Folwell comments that "it was a bold and impudent fraud practiced upon a generous nation. . . It may be said, however, that in the rough ethics of the pinerics a process so extensively operated, so rarely denounced, and tolerated by the government and by government officials seemed not to be so very wrong. There was little sense of guilt. Indeed, so numerous and influential were those engaged in the operation that they seemed not merely innocent but positively meritorious."

From the start, the homestead act proved popular in Minnesota. During the fiscal year 1868, the first in which final proof could be made, 113,800 acres were patented. By 1873 the figure had increased to 255,648 acres, and from then through 1890 it never fell below 200,000 acres, with a maximum of 367,226 acres in 1885. Since 1911 the area patented in any one year has been well below 100,000 acres, and since 1922 below 10,000 acres.

The area of commuted homesteads has varied widely, both actually and relatively. Prior to 1900, the maximum area of 68,244 acres (24 per cent of final homesteads) was reached in 1883, and the minimum area of 4,324 acres (4 per cent of final homesteads) in 1897. Then came a sharp rise, which brought the area to 105,175 acres in 1903, and the ratio to final homesteads to 38 per cent in 1904.

The Forest Homestead Act of June 11, 1906, which authorized the Secretary of Agriculture to open to homestead entry lands in the national forests chiefly valuable for agriculture and not needed for public purposes, has had practically no effect on the land utilization pattern in Minnesota. On the Superior National Forest, up to 1916, only four tracts had been opened to entry under the act. Although three of these tracts had been entered and one had gone to patent, the total area under cultivation was less than 5 acres. This situation, coupled with the fact that of 55,655 acres within the national forest which had been patented under the agricultural land laws prior to its establishment only about

60 acres were actually under cultivation, led the Secretary of Agriculture in 1916 to classify all of the land in the forest as non-listable under the Forest Homestead Act.

On the Chippewa National Forest, a similar situation prevails. The records are incomplete, but three tracts appear to have been patented under the act. One of these was subsequently acquired by the United States, and it is unlikely that farming proved a profitable enterprise on the others. Here, as in the Superior National Forest, no lands are available for entry under the act.

All homestead patents (final and commuted) totaled 11,390,000 acres as of June 30, 1957. This figure considerably exceeds that of disposals by any other method. It constitutes 23 per cent of total federal disposals in Minnesota and 35 per cent of grants to individuals and corporations. **TIMBER-CULTURE GRANTS.** The Timber Culture Act of March 3, 1873, in its final form (1878) offered to donate not more than 160 acres of public land under certain conditions to heads of families or persons over twenty-one years of age who were citizens of the United States or who had declared their intentions to become citizens. Not less than one-sixteenth of the area entered had to be planted at the rate of 2,700 trees per acre, of which 675 had to be living at the end of eight years, when final proof could be made. If the claim was for 160 acres, 10 acres had to be plowed the first year, 10 acres the second year, and 20 acres the third year; and 10 acres had to be planted the second year, 10 acres the third year, and 20 acres the fourth year, with proportional areas for smaller claims. An extension of one year in the cultivation and planting was allowed for each year the trees were destroyed by grasshoppers or drought.

Entries totaling well over a million acres were made in Minnesota during the first ten years following passage of the original act, but the great majority of these never went to patent. So many difficulties were encountered in the establishment of successful plantations, and both the letter and the spirit of the law were so widely violated, that it was repealed in 1891. Dummy entrymen were commonly used to acquire large tracts for wheat and cattle ranges, and a Commissioner of the General Land Office estimated in 1885 that 90 per cent of the entries were fraudulent.

Only 414,000 acres have been patented under the act in Minnesota. This area comprises less than 1 per cent of all federal grants and sales within the state, and about 4 per cent of all timber-culture grants in the United States. More than 80 per cent of the latter grants were in the four states of Kansas, Nebraska, South Dakota, and North Dakota, where climatic conditions were generally adverse and fraud was rampant. **TIMBER AND STONE SALES.** The Timber and Stone Act of June 3, 1878, which at first applied only to Washington, Oregon, California, and

Nevada, was extended in 1892 to all of the public-land states, including of course Minnesota. It provided for the sale of 160 acres of surveyed, nonmineral land, chiefly valuable for timber or stone and unfit for cultivation, which had not been offered at public sale, for not less than \$2.50 per acre. The purchaser had to swear that the land was being acquired solely for his own use and benefit.

Until 1908 all sales under the act were made at the flat rate of \$2.50 per acre. President Roosevelt and Secretary of the Interior Garfield then decided that the words "not less than" in the law meant what they said, and land was thereafter sold at its appraised value. The Public Lands Commission, in its 1904 report (193), cited two 1903 timber sales on 175,883 acres in the ceded portion of the Chippewa Indian Reservation in Minnesota as an illustration of the loss to the government under operation of the Timber and Stone Act as it was administered at that time. Receipts from these sales, which included the timber only, were estimated by the Commission at \$2,650,903, or \$15.06 per acre. If both timber and land had been sold at \$2.50 per acre, the government would have received \$438,707. In other words, the government would have lost \$2,211,196 and would no longer own the land.

Like most federal laws dealing with the disposal of the public lands, the Timber and Stone Act was open to abuse. Dummy entrymen were frequently employed to purchase lands, which promptly found their way into the hands of large timber operators. Circumvention of the obvious intent of the act to make land available to the entryman "for his own exclusive use and benefit" was facilitated by a decision of the United States Supreme Court that this language did not prevent a person from taking up land with the intention of selling it at a profit, or of making that intention generally known, unless collusion to sell prior to making the entry could be proved — obviously an exceedingly difficult task. Repeated attempts to repeal the act failed of success until 1955, when it had become practically a dead letter.

In Minnesota, 33,794 acres were entered in 1893, the first year after the act became applicable in the state. Entries fluctuated considerably in amount until 1904, when they reached a high of 195,953 acres. After a marked slump during the next three years, sales rose again to 154,288 acres in 1908 and 124,480 in 1909. Then came a sharp drop of 61 per cent to 48,731 acres, and for the last thirty years sales have been virtually negligible. Total sales have amounted to 1,409,215 acres, or 3 per cent of all federal grants and sales in the state. Although the figure is a substantial one, particularly in comparison with sales in the neighboring states of Wisconsin and Michigan, it is insignificant in comparison with sales in the Pacific Coast States.

MILITARY BOUNTIES. Beginning with the Revolution and extending

through the Mexican War, Congress offered soldiers in the American armies bounties in the form of grants of public lands. In 1855 the system was liberalized so as to give 160 acres to every soldier who had participated for at least fourteen days in any war from the Revolution to date. The bounties were in the form of transferable warrants which could be used for the acquisition of vacant public lands anywhere in the United States. Since most of the soldiers were not interested in migrating to the western wilderness, sales of their warrants for whatever they could get became the order of the day. This situation led to relatively low returns to the soldiers and to lively speculation in the warrants, which at one time were quoted on the New York stock exchange.

Incomplete records indicate that some 6 million acres were acquired under military-bounty warrants in Minnesota. This figure constitutes about 12 per cent of all federal grants and sales in the state. It is considerably higher than the educational and swampland grants and the timber and stone sales. Relatively little land was taken up by the original holders of the warrants.

INDIAN SCRIP. In 1854 Congress decided to liquidate whatever claims the Sioux half-breeds and their heirs had to the Wabasha Reservation which had been set aside for them in 1830 but never used. This was done by the issuance of scrip entitling the recipient to select an area equal to that to which he had a valid claim on the reservation, either within the reservation or anywhere else in the United States. Most of the scrip was distributed in the spring of 1857, and the reservation thus being opened to settlement was rapidly occupied by immigrants.

In order to make sure that the Indians actually got the land to which they were entitled, the act provided that no transfer or conveyance of the certificates or scrip should be valid. The attempted protection was readily nullified by the legal device of getting the Indians to sign two powers of attorney, one authorizing the location of the land, the other authorizing its sale. The price received by the Indians was usually so small that one distributee remarked that "the half-breeds mostly got cats and dogs for their scrip." Although the procedure was declared invalid by two Secretaries of the Interior, it was upheld both by the lower courts and the Minnesota Supreme Court.

Since the scrip could be located on either surveyed or unsurveyed lands anywhere in the United States, much of it was used in other states, notably in California. Some 245,000 acres were located in Minnesota, largely in the timber and mineral districts. A popular device was to locate scrip on good pine land, strip the timber, allege some error in selection, and demand the privilege of abandoning the land thus devastated and of making a relocation. This practice was known as "the floating of the scrip." Much scrip was located in the Vermilion Range

after the discovery of iron ore there. Many villages were also laid out on land acquired by scrip.

The treaty of 1854 covering the cession to the United States of the "arrowhead" triangle in northwestern Minnesota granted 80 acres of public land to each head of a family or single person over twenty-one years of age of the mixed-bloods belonging to the Chippewas of Lake Superior. Although the treaty was at first interpreted as applying to mixed-bloods residing in the ceded areas, it was later interpreted as entitling all mixed-bloods of the Chippewas, irrespective of their place of residence, to select either surveyed or unsurveyed land anywhere in the United States. A later treaty in 1864 granted 160-acre tracts to half-breeds of the Red Lake and Pembina bands of Indians.

The certificates, or scrip, issued to the Indians contained the statement that no certificate or any right thereunder could be sold, transferred, mortgaged, assigned, or pledged. As in the case of the Sioux half-breeds, two powers of attorney authorizing the location and sale of the land proved that this clause was far from being as water-tight as it seemed. Complaints nevertheless reached the Department of the Interior, and in 1865 Secretary Harlan, having come to the conclusion that the treaty of 1854 contemplated the issuance of patents, not scrip, directed that no more scrip be issued to Chippewa half-breeds. Four years later, following an inquiry from the junior senator from Minnesota for information as to the "proper method" by which an honest claimant under the treaty might obtain his rights, the department decided to issue a "certificate of identity." The recipient could present this certificate at the local land office, select his land, and receive a patent for it. The new procedure proved to be as vulnerable as its predecessor to abuse by the power-of-attorney device.

All was not quiet on the western front, however, and in 1871 Secretary of the Interior Delano appointed a commission, headed by Henry S. Neal of Ohio, to investigate the situation. The Neal Commission found that many of the certificates were based on fraudulent or forged applications, and that as a rule the mixed-bloods had received little or nothing for their claims. This report led first to a suspension of the issuance of patents, and second to passage of the act of June 8, 1872, sponsored by the senior senator from Minnesota "to perfect certain land titles." The gist of the act was to authorize innocent parties who had acquired locations made in good faith by claimants under the treaty of 1854 to complete their entries and perfect their titles by paying such a price as the Secretary of the Interior might deem equitable, but not less than \$1.25 per acre.

A commission appointed by the Secretary of the Interior to investigate any claims that might be submitted under the act found thirteen individuals, firms, or corporations entitled to relief as innocent purchasers in

good faith of scrip notoriously fraudulent, and approved 262 entries of 80 acres each, nearly all of "the best quality of Government pine-land to be found in Minnesota." It found that the persons whose claims it approved were in no way implicated in the frauds, had very little knowledge of what was going on, and made no inquiry into the subject — all in spite of the fact that every certificate bore on its face the statement that it was unassignable. Folwell comments that the remarkable thing about the whole business is that "no more experienced or astute dealers in pine lands have been known in Minnesota than these 'innocent purchasers.'"

The commission advised the Secretary of the Interior that \$2.50 per acre would be an equitable price for the land, although witnesses had testified that the value of the lands ranged from \$5.00 to \$10.00 per acre and was increasing at the rate of 12 per cent a year. The reason given for the recommendation was that the government would never get more at a public sale, since "a combination of bidders" would hold the price to that limit.

Up to June 30, 1904, 58,880 acres of Chippewa half-breed scrip had been located in Minnesota, and well over twice that amount in other states, with 39,920 acres still outstanding. In spite of the relatively small area, the whole episode is of considerable interest because it involved acquisition of some of the best timberland in the state, frequently by fraudulent means.

A considerably larger area (99,725 acres) was located under both general and specific legislation authorizing the issuance of scrip to individuals with valid claims to land which had been disposed of by the government. The area taken up in Minnesota constituted only about 7 per cent of the total amount of scrip issued. Interestingly enough, the amount located in Wisconsin and Michigan was more than four times as much as in Minnesota.

RAILROAD GRANT. In 1864 the Northern Pacific Railroad Company received the only grant of public land in Minnesota made by Congress directly to a railroad corporation. The grant consisted of alternate, odd-numbered sections to a distance of 20 miles on each side of the road in the states traversed, and of 40 miles in the territories. Lieu lands could be selected within 10 miles of the outer limit of the primary grant. The price of the alternate sections retained by the government was raised to \$2.50 an acre. Five years after completion of the road, the railroad was required to sell all unmortgaged lands still in its possession for not more than \$2.50 per acre. Mineral lands were not included in the grant, but coal and iron were not classed as minerals.

The grant to the Northern Pacific extended twice as far from the road as did the grants made through the state, perhaps because its proposed extension to the Pacific Coast through sparsely populated country made

MINNESOTA LANDS

the need for aid seem greater. The 1,905,559 acres received by the railroad constituted nearly a fifth of all railroad grants in the state.

MINERAL LANDS. The first general legislation relating to the disposal of mineral lands in the United States was embodied in legislation passed in 1866, 1870, and 1872. Of special importance was the act of May 10, 1872, which constituted mineral lands a distinct class and provided for their survey and sale at \$2.50 per acre for placer mines and at \$5.00 per acre for lode mines. This act was, however, never operative in Minnesota since within less than a year an act of February 18, 1873, excluded Michigan, Wisconsin, and Minnesota from the provisions of the act and declared all mineral lands in those states free and open to exploration and purchase as before its passage. No information is available as to the area of mineral lands acquired under other legislation.

Minnesota's complete freedom from the operation of the mining laws was modified by the Mineral Leasing Act of February 25, 1920, which applies to all states. That act stopped the sale and provided for the leasing of public lands containing coal, phosphate, sodium, oil, oil shale, or gas. Potash and sulfur were later included. The act had no practical effect in Minnesota because of the virtual absence of any of the minerals named on public lands within the state.

FEDERAL DISPOSALS — SUMMARY

Table 28 and Figure 23 summarize disposals of public lands in Minnesota to the state, to individuals, and to corporations. These disposals constituted 96 per cent of the land area of the state. The remaining 4 per cent consisted of vacant and reserved public lands and of lands owned by the Indians but held in trust for them by the government. Acquisition of some of the alienated land, chiefly for national forests, has brought present federal ownership up to about 7 per cent of the total, including Indian lands.

A third of all federal disposals took the form of grants to the state, principally to aid in the construction of railroads, the drainage of swamps, and the promotion of education. Two-thirds took the form of grants and sales to individuals and corporations, with homesteads far in the lead. Cash sales (including preemption) and grants for military services came next.

The reasons for the sometimes sizable differences between the state and the federal figures for the same items are not known except in the case of the agricultural college grant. Here, the area actually received was considerably less than the face of the grant because the selections included about 25,500 acres of land within railroad grants, the minimum price of which was \$2.50 per acre. For the purposes of the grant, one acre of this land was regarded as equivalent to two acres of land with

EVOLUTION OF LAND OWNERSHIP

Table 38. Disposal of the Public Domain in Minnesota.

	STATE RECORDS	FEDERAL RECORDS	
	ACRES	ACRES	PER CENT
Grants to the state	496,482	500,000	1
Internal improvements	2,995,628	2,888,608	6
Common schools	91,524	92,160	*
University	94,439	120,000	*
Agricultural college	4,777,636	4,706,503	10
Swamplands	8,315,328	8,047,469	16
Railroads	46,038	46,080	*
Salt springs	6,397	6,400	*
Public buildings	26,957	28,400	*
Parks and forests			
	16,850,429	16,435,620	33
Other grants and sales			
Grant to Northern Pacific Railroad Company		1,905,559	4
Grants for military service		5,959,379 ¹	12
Agricultural college grants located by other states		820,000	2
Cash sales (chiefly auction, private, and preemption)		6,054,792 ²	12
Homesteads (including commuted entries)		11,390,000	23
Timber-culture entries		414,000	1
Timber and stone entries		1,409,215	3
Indian and private scrip		403,285 ¹	1
Miscellaneous		4,303,572 ³	9
		32,659,802	67
Grand total		49,095,422	100

Note. Federal figures are for June 30, 1957; state figures for June 1, 1958.

* Less than 0.5 per cent.

¹ Data incomplete.

² Data are lacking for the fiscal years 1872 to 1880. Cash sales may well total some 9 million acres.

³ Includes some scrip, grants for military service, and other minor items, but probably consists chiefly of cash sales.

Source: Bureau of Land Management, Department of the Interior, Public Lands Commission (1905), and Division of Lands and Minerals, Minnesota Department of Conservation.

a minimum price of \$1.25 per acre. The state has no records dealing with federal grants and sales to individuals and corporations.

Transactions in which the public lands played a part were so numerous and so involved, particularly in the early days, that gaps and inconsistencies in the often sketchy records were unavoidable. In spite of these

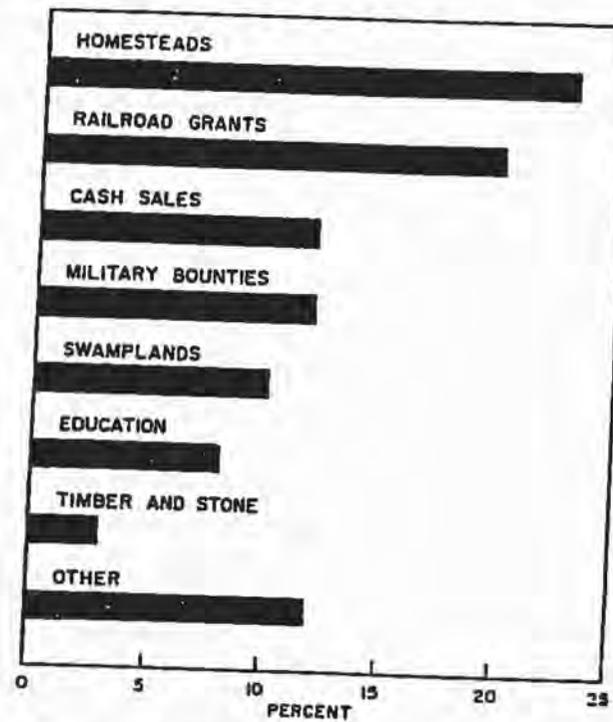


Figure 25. Federal grants and sales of public lands in Minnesota.

deficiencies, both federal and state figures give a clear picture of the basic policy of the government to transfer the bulk of its landed heritage to state and private ownership, and of the various methods by which this transfer was effected.

RESERVATIONS, ACQUISITIONS, AND EXCHANGES

Creation of the Yellowstone National Park in 1872 marked the first step in the evolution of national policy from that of virtually complete disposal of the public domain to that of virtually complete reservation. Then came the establishment of the Sequoia, Yosemite, and General Grant national parks in 1890, passage of the act of March 3, 1891, empowering the President to set aside as forest reserves public lands covered with timber or undergrowth, and proclamation by President Harrison within less than a month of the Yellowstone Forest Reserve. National parks and national forests increased greatly in area and were followed by national monuments, wildlife reservations, mineral reservations, and grazing districts. The evolution from disposal to reservation culminated in 1935, when President Roosevelt withdrew from entry, pending classi-

fication, practically all of the remaining unreserved and unappropriated public domain.

CHIPPEWA NATIONAL FOREST. Two years after the turn of the century Congress inaugurated the reservation policy in Minnesota. In 1899, at the instigation of Christopher C. Andrews, the "apostle of forestry" in Minnesota, the two state medical societies and the State Federation of Women's Clubs launched a movement for the establishment of a national park comprising somewhat more than 600,000 acres of ceded and allotted Indian lands in the neighborhood of Cass, Leech, and Winnibigoshish lakes. An excursion of eminent citizens from Chicago, St. Paul, Minneapolis, and elsewhere in the fall of that year helped to arouse interest in the project. In 1901 the Minnesota legislature urged Congress "to set aside and devote to Park, Sanatorium, and Forest Reserve purposes" any or all of the "pine lands" in the area and "such other lands, if any, which are unfit for agriculture and are not required for Indian allotments."

Support of the proposed park was, however, not unanimous. Opposition appeared at Duluth, Cass Lake, and points on the northwestern branch of the Great Northern Railway. Stoppage of lumbering, it was claimed, would be ruinous to business in those places, and the cost of purchasing the interest of the Indians in the land would run into the millions of dollars. Even some who favored the project felt that it was too ambitious.

A middle course between locking up all or none of the 600,000 acres involved was proposed by Herman H. Chapman, superintendent of the North Agricultural Experiment Station of the University of Minnesota at Grand Rapids. In published articles, addresses, correspondence, and conferences he advocated preservation intact of lands primarily valuable for aesthetic and recreational purposes, and logging under forestry principles of about 100,000 acres of pine land primarily valuable for commercial purposes, with retention by the government of title to both classes of land. Truly agricultural lands would be opened to settlement.

Conferences between Chapman, members of the Minnesota delegation in Congress, and Gifford Pinchot, head of the Bureau of Forestry, led to incorporation of the essential features of this proposal in the Morris Act of June 27, 1902. The original bill took the form of an amendment to the Nelson Act of January 14, 1889, for "the relief and civilization of the Chippewa Indians in the State of Minnesota." (See page 84.) In addition to materially improving that act, the bill as finally passed included the following provisions:

1. It limited future cutting on ceded Indian lands to merchantable pine timber, with the exception of such other trees as had to be cut in

the economical conduct of logging operations, and required the burning or removal of slash in order to minimize the fire danger.

2. It instructed the Forester of the Department of Agriculture, with the approval of the Secretary of the Interior, to select 200,000 acres of pine land and 25,000 acres of agricultural land (defined as land containing not more than 1,500 board feet of pine to the acre), on which cutting would be done under rules and regulations prescribed by the Forester. These regulations must provide for leaving 5 per cent of the merchantable pine to serve as seed trees and for the disposal of slash.

3. Proceeds from the sale of timber were to be credited to the Indians, but the government was to retain title to the lands, which were to become a forest reserve.

4. It reserved from sale or settlement the islands in Cass Lake and Leech Lake, not less than 120 acres at the extremity of Sugar Point on Leech Lake, and the peninsula known as Pine Point (containing approximately 7,000 acres) on Leech Lake. These lands were to remain as Indian lands under the control of the Department of the Interior.

5. It reserved from sale or settlement 10 sections in area within the 225,000 acres covered by Paragraph 2. These 10 sections were to be selected by the Forester of the Department of Agriculture, with the approval of the Secretary of the Interior, in lots of not less than 320 acres each in contiguous areas.

Eugene S. Bruce, a lumberman in the Bureau of Forestry, was placed in charge of the selection of the lands and of the timber sales, which started the next year. In addition to providing for the reservation of seed trees and the burning of all tops and litter, the regulations prescribed by the Bureau forbade the cutting of any white or Norway pine less than 10 inches in diameter at 3 feet from the ground, and required the utilization of all pine logs 6 inches or more in diameter at the small end. Senator Nelson of Minnesota said that the effectiveness of these operations influenced him to support the transfer of the forest reserves from the Department of the Interior to the Department of Agriculture in 1905.

All was not yet, however, clear sailing for the "forest reserve." In 1905 opponents persuaded the legislature to pass a memorial asking Congress to open the reserve to settlement. This move was countered by appeals to Congress from the State Federation of Women's Clubs and the commercial clubs of St. Paul and Minneapolis to uphold the reservation. The final result of the agitation pro and con was passage of the act of May 23, 1908, the major provisions of which were as follows:

1. It created "in the State of Minnesota a national forest" and specifically described its boundaries. Formal establishment of the Minnesota National Forest was effected by Public Order No. 137 of the same date.

2. The new boundaries retained the islands, the peninsulas, the 10 sections, and the bulk of the pine lands which had been selected by the Forester. A large area was, however, eliminated from the original reservation, chiefly on the west and south sides, ostensibly for the purpose of opening the lands to settlement. The gross area of the reduced reserve was 312,476 acres and the net area 190,602 acres.

3. It increased from 5 to 10 per cent the amount of merchantable pine timber which must be reserved for seed trees in future sales outside of the 10 sections, in which the Forester was authorized to use such methods of cutting as he thought wise.

4. It provided for compensating the Indians for both the land and the timber included in the reservation.

5. It provided that Indian allotments within the boundaries of the forest might be sold to the government or exchanged for allotments outside the forest, and that the lands thus relinquished should become part of the reserve.

The reservation was slow in attaining full status as a national forest. Final settlement with the Indians was not effected until April 9, 1923, when the President approved the findings of a commission, from which the Indians had appealed, awarding them \$1,490,195.58 for the land and for the timber reserved from cutting within the forest. The total compensation which they received as a result of the creation of the national forest was as follows:

Timber available for cutting	\$12,000,000.00
Timber reserved for seed trees	336,654.33
Timber on islands, points, and 10 sections	914,830.09
Land reserved for forestry purposes	238,681.16
Swampland ceded to the state	223,162.62
Interest at 5 per cent	378,618.39
	<hr/>
	\$14,091,976.59

On the same day that the President approved the award he transferred complete control over the national forest to the Forest Service. Prior to that time general supervision over its management had been exercised by the Forest Service, including marking and slash disposal, but sales had been made and scaling had been done by the General Land Office. The Forest Service also handled the 10 sections, which included some 30 miles of water front, where numerous summer residences were built under special-use permits. Allotted Indian lands were under the jurisdiction of the Bureau of Indian Affairs. Three federal bureaus in two different departments were thus active in the administration of land within the boundaries of a single national forest.

On May 22, 1928, the President by Executive Order changed the name of the Minnesota National Forest to Chippewa National Forest.

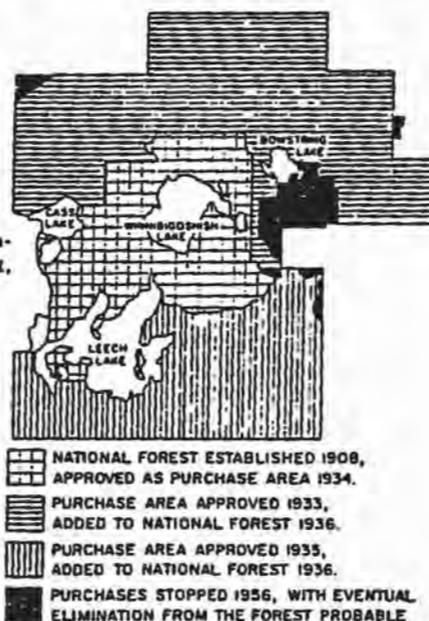
In 1933 the National Forest Reservation Commission, under authority of the Weeks Act of 1911 and the Clarke-McNary Act of 1924, initiated an acquisition program by establishment of the Chippewa Purchase Unit. This action was prompted by President Roosevelt's allocation in June, 1933, of \$20,000,000 of emergency funds for the purchase of national forest lands. Subsequent allocations, according to the Commission's 1936 annual report, brought the total amount made available for this purpose to \$45,900,000.

Figure 24 shows the areas approved for purchase by the National Forest Reservation Commission. Their gross areas, as of the date of approval, may be summarized as follows:

	ACRES
1933—on north side of original forest	643,000
1934—within original forest	313,000
1935—on south side of original forest	356,000
	<hr/> 1,312,000

A Presidential Proclamation of December 29, 1936, extended the boundaries of the Chippewa National Forest to include all of the areas

Figure 24. Chippewa National Forest and Purchase Unit, June 30, 1958.



approved for purchase. Since that date the boundaries of the Forest and the Chippewa Purchase Unit have, therefore, been identical. The acquisition program has increased the gross area of the Forest by about 320 per cent and its net area by about 230 per cent.

In 1953 the National Forest Reservation Commission approved the following reductions of area in the Chippewa Purchase Unit to be "effective as promptly as administrative considerations permit" (Fig. 24):

COUNTY	GROSS AREA	NET AREA
	ACRES	ACRES
Beltrami	3,200	1,235
Cass	225	0
Itasca	63,350	5,588
	<hr/> 66,775	<hr/> 6,823

These prospective eliminations constitute 5.1 per cent of the gross area of the forest and 1.1 per cent of the net area.

Minor changes in ownership in the Chippewa National Forest have taken place under the provisions of the General Exchange Act of 1922. The areas and values involved to June 30, 1957, are as follows:

	ACQUIRED BY U.S.	RELINQUISHED BY U.S.
Land area	20,284 acres	2,238 acres
Values		
Soil	\$56,739	\$39,614
Timber with land	47,674	3,409
Timber without land	...	44,421
	<hr/> \$104,413	<hr/> \$87,444

These transactions resulted in a net increase in national forest area of 18,046 acres, or 2.8 per cent of the total net area of the forest. Approximately half of the value received by the proponents of the exchanges was in the form of timber without land. Since 1953, when the exchange of timber for land ("stumpage for stumps") was stopped, all exchanges have been on the basis of land for land.

* SUPERIOR NATIONAL FOREST. The Superior National Forest was established by Presidential Proclamation of February 13, 1909, with a gross area of 1,018,638 acres and a net area of 857,330 acres. The latter included public domain to which the right of occupancy had been ceded by the Chippewa Indians in 1854 and to which the government still retained title. Subsequent boundary changes and additions made by

MINNESOTA LANDS

Presidential Proclamation in the years indicated resulted in the Forest's having the following gross and net areas:

	GROSS AREA ACRES	NET AREA ACRES
1912	1,276,100	815,507
1927	1,653,223	809,093
1936	2,870,995	1,694,536

The net area for 1936 includes 687,928 acres which had been acquired under the Weeks Act. The Mesaba Purchase Unit, which had been established in 1930, was added to the national forest by the President's proclamation of December 28, 1936.

Public Land Order 1466 of August 7, 1957, extended the boundaries of the forest to include 23,456 acres of public domain in the Pigeon River and Kabetogama Purchase Units, chiefly the latter. The addition was made for the purpose of making the lands concerned available for exchange purposes, and they were not expected to be a permanent part of the national forest.

An acquisition program was started in 1926 by the establishment of the Superior Purchase Unit. The National Forest Reservation Commission, in announcing this action, referred to it as one of the outstanding features of its program for that year. The purchase unit included all of the existing national forest plus a considerable area which was added to the forest in 1927. A St. Croix Purchase Unit of 183,450 acres in Pine and Carlton counties was established in 1928 but never functioned. It was abandoned in 1930, at the same time that the Mesaba Unit was established, because much of the area was covered by delinquent taxes or burdened with school bond issues.

Additional purchase areas, which were given national forest status in 1936, were as follows:

	GROSS AREA, ACRES
May, 1930	57,500
December, 1930 (Mesaba Unit)	171,000
August, 1933	202,950
August, 1934 (Addition to Mesaba Unit)	102,000
January, 1935	803,400

The exterior boundaries of the Superior National Forest as originally established and as extended by these additions are shown in Figure 25.

In April, 1936, came the establishment of two more purchase units which have never been included in the national forest. These were the Kabetogama Purchase Unit with a gross area of 661,400 acres on the west side of the forest, and the Pigeon River (Grand Portage) Purchase

EVOLUTION OF LAND OWNERSHIP

SUPERIOR NATIONAL FOREST

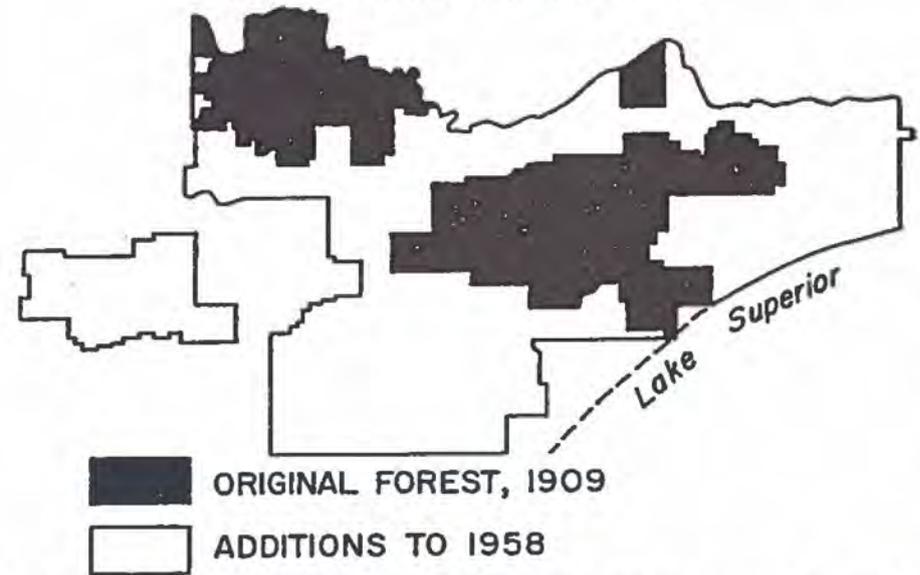
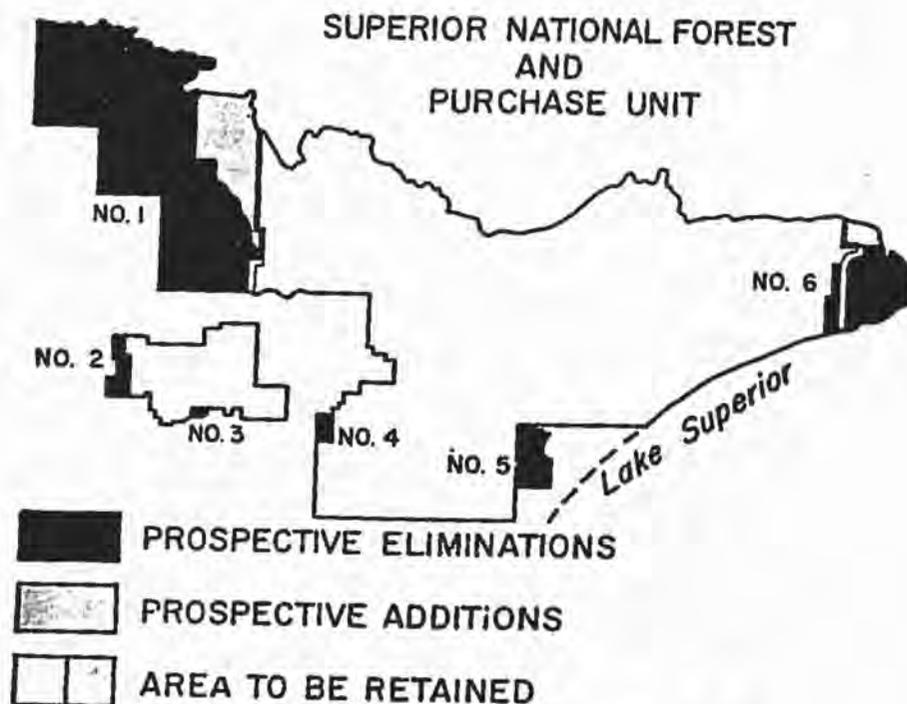


Figure 25. Exterior boundaries of Superior National Forest as originally established and as subsequently extended. The Kabetogama and Pigeon River Purchase Units are not shown.

Unit with a gross area of 152,000 acres on the east side of the forest. In 1943, after about 188,000 acres had been acquired in these two units, the state legislature put a stop to further purchases. With only 22 per cent of the units in federal ownership and no prospect of expansion, question naturally arose as to the wisdom of retaining them.

On April 17, 1956, the National Forest Reservation Commission answered the question by proposing the elimination of most of the Kabetogama and Pigeon River Purchase Units and of several small additional areas in the Superior National Forest (Fig. 26). The ownership of the areas involved is shown in Table 39. The proposed changes in boundaries will take place when administrative considerations permit. The reasons given by the National Forest Reservation Commission for recommending them were as follows:

"These areas in the main overlap State conservation areas, as the State forests, and some 312,000 acres within them are owned by the State and counties. These agencies also own large areas within the national forest boundaries (as such will be revised), as do private owners. It is desirable to revise the boundaries of the national forest and purchase unit so as to remove the overlap of the national forests and State conservation areas, provided that the national forest lands can successfully be ex-



Heavy wide lines divide the national forest from the Kabetogama Purchase Unit on the west and the Pigeon River Purchase Unit on the east.

Figure 26. Superior National Forest, Kabetogama Purchase Unit, and Pigeon River Purchase Unit, with proposed eliminations and additions.

Table 39. Ownership of Proposed Eliminations from Superior Purchase Unit and Superior National Forest.

AREA No., FIG. 25	FEDERAL		STATE AND COUNTY		PRIVATE		TOTAL	PER CENT
	ACRES	PER CENT	ACRES	PER CENT	ACRES	PER CENT	ACRES	
1	111,767	19	259,959	41	254,449	40	626,175	100
2	10,380	58	4,102	23	3,510	19	17,992	100
3	283	6	720	17	3,290	77	4,293	100
4	1,665	19	80	1	7,013	80	8,758	100
5	17,454	44	9,825	25	11,970	31	39,249	100
6	31,830	28	37,804	33	43,576	39	113,210	100
	173,379	21	312,490	39	323,808	40	809,677	100

Source: Superior National Forest.

changed for State or private lands in the national forests as revised. Two such exchanges have already been negotiated with the State and approved, and prospects for additional transactions are good."

Exchanges within the Superior National Forest which have already been effectuated may be summarized as follows:

	ACQUIRED BY U.S. 115,669 acres	RELINQUISHED BY U.S. 19,705 acres
Land area		
Value		
Soil	\$524,233	\$127,043
Timber with land	82,747	75,622
Timber without land	...	292,518
	\$606,980	\$495,183

This area constituted 5.0 per cent of the net area of the forest as of June 30, 1957. Approximately three-fifths of the value received by the proponents of the exchanges was in the form of timber without land ("stumpage for stumps"). As in the case of the Chippewa National Forest, all exchanges since 1953 have been on the basis of land for land.

Back of the statistics, is a long and colorful history of legislation, administrative action, and public discussion concerning the Superior National Forest, and particularly concerning the Boundary Waters Canoe Area. Ever since the establishment of the forest in 1909, the preservation of the wilderness character of the northern lake country has been a subject of continuing concern. Wilderness advocates favored the complete exclusion of roads from the area as the only means of preserving truly primitive conditions. Others favored opening up the area by the construction of roads and recreational facilities as a means of attracting tourists and thus bolstering the economy of the region.

While the Forest Service sympathized with the wilderness philosophy, it also felt the need of making the area sufficiently accessible to permit effective control of forest fires. A proposal to construct three roads which would affect the area aroused considerable opposition and was aired at a public meeting in Duluth on April 3, 1923. This meeting led to some modification of Forest Service plans and to organization of the Superior National Forest Recreation Association.

A revised road-building program was presented by the Forest Service at a meeting in St. Paul on September 3, 1926. It was endorsed by a large delegation from Cook and Lake counties, but was opposed by the Association. Secretary of Agriculture William M. Jardine settled the controversy on September 20 by approving the construction of certain roads which he regarded as the minimum necessary for the protection of the national forest. At the same time he emphasized the desire of the department to keep as large a part of the forest as practicable in wilder-

ness condition, and stated that at least 1,000 square miles containing the best of the lakes and canoe routes would be kept free of roads. The Superior National Forest Recreation Association, dissatisfied with the decision, complained: "To the layman, this plan looks exactly as does the colored chart of the nursery agent to the prospective customer, who in his mind's eye, buys trees producing the fabulous and wonderful fruits pictured, but in the course of time is obliged to be content with the worm-eaten, gnarly fruits of reality." A proposal that the area be made a national park received little support because of the fear that as a national park it would be in even greater danger of invasion than as a national forest.

A new hazard to the preservation of natural conditions in the canoe country appeared in 1925, when E. W. Backus, President of the Minnesota and Ontario Paper Company, presented a plan for controlling the waters of the Rainy Lake watershed on both sides of the international boundary. The plan called for damming Rainy Lake and Namakan Lake and for building storage dams at the outlets of Lac la Croix, Iron, Crooked, Basswood, Birch, Knife, and Saganaga lakes. It would have raised the water level as much as 88 feet in places, submerged innumerable islands, destroyed many waterfalls and streams, and killed the timber on hundreds of thousands of acres. Flood control and power development were the stated objectives of the plan, with the government to pay half the cost.

The proposal went for action to the International Joint Commission established by the treaty of January 11, 1909, with Great Britain for the utilization and development of the boundary waters between the United States and Canada. A hearing was held by the Commission at International Falls in September, 1925, after which it referred the matter for study to its engineers. Nearly nine years later (in 1934) the Commission vetoed the proposed development with the comment: "The boundary waters referred to in the Reference and the territory tributary thereto are of matchless scenic beauty and of inestimable value from the recreational and tourist viewpoints. The Commission fully sympathizes with the objects and desires of . . . [those] who take the position that nothing should . . . mar the beauty of this last great wilderness."

Meanwhile a storm of opposition to the proposed raising of the lake levels had developed. A meeting at Duluth in November, 1927, urged the United States and Canada to negotiate a treaty making the Quetico-Superior Wilderness an international park. This meeting was followed by the organization of the Quetico-Superior Council, headed by Ernest C. Oberholzer, with the objectives of maintaining parklike conditions free from exploitation on all visible shore lines, of preventing further material changes in natural water levels, of allowing the fullest utiliza-

tion of timber resources not visible from the waterways, and of developing fish and game for maximum natural production.

In the spring of 1928 a bill aimed at preserving the natural, wilderness character of the region was introduced in Congress by Senator Shipstead and Congressman Newton of Minnesota. After Congressman Newton was succeeded by Congressman Nolan, it became known as the Shipstead-Nolan bill or the Shipstead-Newton-Nolan Bill. Strongly endorsed by the Minnesota legislature and by state and national organizations, the measure was passed unanimously by both houses of Congress and became a law on July 10, 1930. In its report on the bill, the House Committee on Agriculture stated that "this area in Minnesota, combined with the Quetico Provincial Park in Ontario, comprises the greatest and most picturesque wilderness in the central part of the North American Continent. It is hoped that this region may ultimately become a great international recreational area to be used jointly by the people of the two countries, and thereby promote peace and better understanding."

The main provisions of the act were as follows:

1. It withdrew from entry all public lands north and east of a specifically described line running in a generally westerly direction from the junction of the northern boundary of Township 60 North with Lake Superior to the southwest corner of Township 66 North, Range 21 West, thence due north to the international boundary on Rainy Lake, and so drawn as to include Birch Lake, Burntside Lake, and Vermilion Lake (Fig. 27). The Secretary of Agriculture was, however, authorized to open to homestead entry under the act of June 11, 1906, any lands chiefly valuable for agriculture and not needed for public purposes.

2. It enunciated the principle of conserving for recreational use the natural beauty of shore lines on all federal lands "which border upon any boundary lake or stream contiguous to this area, or any other lake or stream within this area which is now or eventually to be in general use for boat or canoe travel." In order to carry out this principle, it forbade logging on all shores to a depth of 400 feet from the natural water line, except as the Forest Service might see fit in particular instances to vary this depth for practical reasons; and it further forbade the logging of any timber other than that which is diseased, insect infested, dying, or dead within 200 feet of the natural shore line, except as necessary in connection with logging operations.

3. In order to preserve the shore lines, rapids, waterfalls, beaches, and other natural features of the region in an unmodified state of nature, it forbade further alteration of the natural water level in any lake or stream within or bordering upon the designated area except by special act of Congress covering each such project. The Forest Service was authorized to permit minor deviations from the general rule where

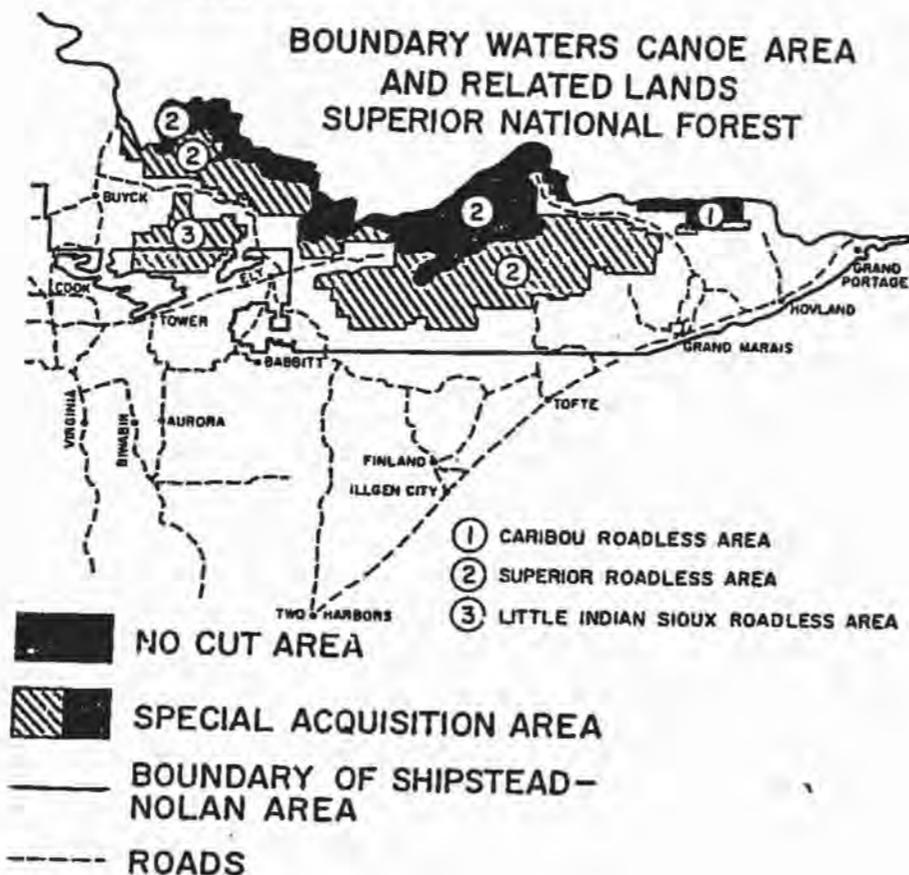


Figure 27. Special acquisition area, no-cut area, and Shipstead-Nolan area in Superior National Forest.

necessary in connection with logging operations or recreational use of national forest lands.

4. It provided that the act should not interfere with the duties of the International Joint Commission or with action under the treaty of February 24, 1925, with Great Britain, which provided for regulating the level of the Lake of the Woods through an International Lake of the Woods Control Board and the International Joint Commission.

In 1933 the Minnesota legislature enacted legislation applying the same general principles to state-owned land within the area.

President Roosevelt on June 30, 1934, created the Quetico-Superior Committee, which has been continued by subsequent executive orders issued by Presidents Roosevelt, Truman, and Eisenhower. The duties of the committee are to consult, advise with, and invoke the aid of various governmental departments, the State of Minnesota, and all civic, scientific, educational, and conservation organizations concerned in the use and preservation of the Quetico-Superior area in the public interest. It makes recommendations from time to time as it deems proper. One of its recommendations was for creation of the airspace reservation, to which reference will be made later.

The initial adoption of a roadless-area program by the Forest Service in 1926 was accompanied in the same year by establishment of the Superior Primitive Area. Following the great expansion of the national forest which took place in 1936, the Forest Service established three separate primitive roadless areas — the Caribou, the Superior, and the Little Indian Sioux (Fig. 26). These three areas included substantially all of the original Superior Primitive Area plus suitable lands in the 1936 additions. Several modifications in boundaries were made in 1946, all of which were minor except in the vicinity of Silver Island Lake northeast of Isabella.

In the belief that the requirements of the Shipstead-Nolan Act did not go far enough in protecting the unique values in much of the northern lake region in the Superior National Forest, the Forest Service in 1941 set aside a "no-cutting" area of about 362,000 acres of land and water. Within this area, which extends to varying distances south of the international boundary, there will be no commercial sales of timber except to take care of occasional, small, local requirements or to salvage timber killed by fire, insects, or other causes. The land area of about 255,000 acres includes some 29 per cent of the total land area in the three roadless areas and some 20 per cent of the government-owned timber volume. It is estimated that about 30 per cent of this volume is reserved from cutting by the Shipstead-Nolan Act, and that a substantial but undetermined portion of the remainder is thereby rendered inoperable.

The need for speeding up the acquisition of privately owned lands within the roadless areas in order to protect them from undesirable logging or recreational developments led to passage of the Thye-Blatnik Act of June 22, 1948 (Public Law 733). This act authorized and directed the Secretary of Agriculture to acquire any lands situated within certain specifically described areas in Cook, Lake, and St. Louis counties, "where in his opinion development or exploitation, or the potentialities for development or exploitation, impair or threaten to impair the unique qualities and natural features of the remaining wilderness canoe country." An appropriation of \$500,000 was authorized for the purchase of

lands within the designated area, which included much of the region covered by the Shipstead-Nolan Act of 1930. Condemnation in the face of written objection by the owner of any contiguous tract of not more than 500 acres was prohibited if at the time of approval of the act the tract was encumbered with a structure of a permanent type suitable for human habitation. Exchanges of federal land within the area designated by the Shipstead-Nolan Act for state, county, or private land within the same area were specifically authorized. The House Committee on Agriculture, in reporting favorably on the bill, had this to say:

"In northeastern Minnesota . . . is a land of lakes and forests so unique in its primitive beauty that its fame was established long before the white man set up his government on this continent. . . The Forest Service set aside a tract of approximately 1,000,000 acres of this region as a 'roadless area,' one in which there should be no permanent roads. It also designated about 35 per cent of the area as a 'no cut' area, in which there are no commercial timber sales on national forest land. . . Cargo planes are now a well-established method of transportation and are daily becoming more common as carriers of freight. With this new means of transportation available, the lack of roads is no longer a barrier to the commercial development of private holdings deep within the wilderness area.

"If the unique wilderness character of this area is to be preserved, the private holdings within the area must now be acquired by the United States. The action should be taken as expeditiously as possible. A delay of even one year will see additional private construction within the area with air-borne materials, which will both detract from the public value of the region and increase the cost of later acquisition."

* The act embodied a radical departure from the time-honored practice of paying the counties 25 per cent of the gross receipts from national-forest lands within their borders. Since receipts would obviously be low from those parts of the forest in which no cutting or relatively light cutting was to be the rule, the 25 per cent payment was replaced by an annual contribution equivalent to three-quarters of one per cent of the fair appraised value of the national-forest land in each of the counties in the area covered by the act. Final determination of the fair appraised value was to be made by the Secretary of Agriculture, with revaluation at ten-year intervals.

A considerable extension of the area covered by the Thye-Blatnik Act, chiefly on the south side, was effected by an amendment approved June 22, 1956 (Public Law 607). The change in the method of making payments to the counties from a percentage of gross receipts to a percentage of the appraised value of the land was not to take effect until the close of the fiscal year 1959 with respect to the added lands.

The amendment also increased the authorization for acquisition within the enlarged area from \$500,000 to \$2,500,000. Actual appropriations for the fiscal years 1950 to 1958, inclusive, amounted to \$1,500,000, of which \$200,000 has been withheld by the Bureau of the Budget.

About a year and a half after the House Committee on Agriculture called attention to the invasion of the wilderness area by airplanes, President Truman took steps to meet the situation. On December 17, 1949, he issued an executive order reserving and setting apart as an airspace reservation the airspace below the altitude of 4,000 feet above sea level over the Caribou, Superior, and Little Indian Sioux roadless areas, which were described in detail in the order. After January 1, 1951, no one was allowed to navigate an aircraft within this airspace reservation except in conformity with the provisions of the order and as permitted by regulations prescribed by the Secretary of Agriculture. Aircraft navigation within the reservation was allowed when necessary to make an emergency landing, when low-level flight is necessary for safety, to conduct official business of the United States, the State of Minnesota, or Cook, Lake, or St. Louis counties, or to conduct rescue operations.

Numerous and repeated violations of the executive order led the United States to seek an injunction permanently restraining certain violators from continuing to fly airplanes under an elevation of 4,000 feet within the airspace reservation. The cases of *United States v. Perko et al.* and of the *United States v. Zupancich* were tried in the United States District Court for the District of Minnesota before Chief Judge Gunnar H. Nordbye, who granted the injunction on September 26, 1952. In the course of his decision Judge Nordbye said: "The policy of the Government in preserving this region in its primitive state has been manifested by the various acts of Congress, committee reports, and the various regulations of the Secretary of Agriculture. The conservation of this wilderness tract is an outgrowth of years of governmental planning. . . . One of the effective barriers against the spoilation of the primitiveness of this canoe country was the establishment of the Roadless Area. This barrier, of course, will be circumvented entirely by the use of airplane travel, not only to the comparatively few resorts now located therein, but by airplane travel to and from the many lakes which will be used as landing fields for public and private air travel transportation."

He pointed out that the Air Commerce Act of 1926 authorized the President "to provide by Executive order for the setting apart and protection of airspace reservations in the United States for national defense or other governmental purposes," and concluded that protection of national forests is certainly a governmental purpose. While recognizing that the act of June 4, 1897, specified timber production and watershed protection as the main objectives in the establishment of national forests, the judge commented that "It seems reasonably

clear that Congress is clothed with authority to utilize a forest reserve as a recreational area for the citizens of this country. . . Whatever the Secretary has done, therefore, with reference to the establishment of a Roadless Area seems entirely in keeping with the furtherance of the governmental policy which Congress has adopted." If the Secretary was authorized to issue the road ban, "then it seems to follow logically that the executive air ban should be sustained in that it is reasonably directed to the furtherance of governmental purposes."

Perko appealed to the United States Court of Appeals. On May 25, 1953, Circuit Judge Seth Thomas of the Eighth Circuit affirmed the decision of the District Court with the statement that an injunction was the proper and appropriate remedy to stop violations of the executive order. In addition to endorsing the views expressed by the District Court, Judge Thomas emphasized the fact that the Air Commerce Act of 1926, as amended in 1938, gives the United States national sovereignty in the airspace above the United States. "The ancient doctrine that at common law the ownership of the land extended to the periphery of the universe . . . has no place in the modern world. The air is a public highway, as Congress has declared."

A petition to the United States Supreme Court for a writ of certiorari was denied by the Court on October 12, 1953. This action in effect confirmed the decisions of the two lower courts and settled for good any question as to the legality of the airspace reservation.

NERSTRAND WOODS PURCHASE UNIT. An act of December 7, 1942, liberalized the exchange program instituted by the acts of March 20, 1922, and March 3, 1925. It authorized the Secretary of the Interior and the Secretary of Agriculture to exchange lands under their respective jurisdiction anywhere in Minnesota for lands of equal value owned by the State of Minnesota which are contiguous to or situated within the exterior boundaries of any national park, national forest, land-use project, or other federal reservation, provided the exchange is determined to be in the public interest. Reservations may be made by either party to the exchange, but such reservations must be taken into consideration in determining the value of the lands.

Prior to the passage of this act, the National Forest Reservation Commission had established the Nerstrand Woods Purchase Unit in two adjacent sections in Township 110 North, Range 19 West, in Rice County. The tract had an unusually fine forest of hardwoods which the State Department of Conservation wished to acquire, primarily for recreational purposes and for research, but which it was without funds to purchase. On the other hand, the state owned a large area in the Superior National Forest which the government wished to acquire and which could be used for trading stock. Here was clearly an opportunity for an

exchange which would be mutually advantageous, and which was approved by the state legislature in 1945.

The final result was the purchase by the government of 468 acres in Nerstrand Woods, which was transferred to the state in 1951 in exchange for 9,218 acres of state land in Lake County in the Superior National Forest. On the basis of equal total values, the per-acre value of the hardwood land in Rice County was nearly twenty times that of the cutover land in Lake County. This exchange is the only one of its kind yet consummated in Minnesota.

NATIONAL MONUMENTS. Minnesota has no national park and only two small national monuments, both established by act of Congress and not by Presidential proclamation. The Pipestone National Monument of 283 acres in southwestern Minnesota comprises the quarry of smooth red stone (catlinite) from which came the material for a large proportion of the ceremonial pipes used by the American Plains Indians and other tribes. The area was reserved for the Yankton Sioux in 1858. After lengthy litigation it was purchased from them in 1928 for \$328,558.90, and became a national monument on August 25, 1937.

The Grand Portage National Monument of approximately 700 acres was established by act of September 2, 1958, "for the purpose of preserving an area containing unique historical values." The main items of interest are the Grand Portage or "Great Carrying Place," the "Northwest Company Area" on Lake Superior, and the site of Fort Charlotte on the Pigeon River adjacent to the Canadian border. It lies entirely within the Grand Portage Indian Reservation in the extreme northeastern corner of the state. Its establishment is to become effective when title to the trust lands within its boundaries has been relinquished to the United States by the Minnesota Chippewa Tribe and the Grand Portage Band of Chippewa Indians. The Secretary of the Interior is authorized to procure other lands within the monument; and he is instructed to accord preferential treatment to members of the Minnesota Chippewa Tribe in providing accommodations and services for visitors, and in performing construction, maintenance, and other services within the monument for which they are qualified.

WILDLIFE REFUGES. The first wildlife refuge in Minnesota was the Upper Mississippi River Wildlife and Fish Refuge created by act of Congress on June 7, 1924. Of the total area of 214,210 acres which it includes, 32,900 acres are in Minnesota, 87,630 acres in Wisconsin, 61,222 acres in Iowa, 32,231 acres in Illinois, and 227 acres in Missouri.

The Tamarac National Wildlife Refuge was established in 1934, the Mud Lake Refuge in 1937, and the Rice Lake Refuge in 1939. Of the 105,690 acres in these three refuges, 200 acres was reserved from the public domain, 32,143 acres was purchased, 68,002 acres was made avail-

able by the Resettlement Administration, and 5,345 acres consists of meandered waters. Several land sales and exchanges have been effected with the State of Minnesota to fill out refuge boundaries. For example, the former Talcott Lake National Wildlife Refuge of 805 acres in Cottonwood County was conveyed to the state in exchange for 1,032 acres of state-owned land within the Tamarac Refuge.

An area of 81,700 acres of scattered federal lands in Roseau, Lake of the Woods, and Beltrami counties which had been acquired by the Resettlement Administration was at one time turned over to the Fish and Wildlife Service for administration. These lands were later leased to the State of Minnesota for a period of fifty years and constitute the bulk of the area in the Red Lake Game Refuge and the Beltrami Island State Forest.

MILITARY LANDS. Although the first treaty with the Indians (1805) was for the purpose of obtaining clear title to certain strategic areas for military purposes, holdings for such purposes have always been small and have played a very minor part in the evolution of land ownership in Minnesota. Current holdings by the Department of Defense are presented in Part III.

LAND UTILIZATION PROJECTS. Federal purchase of submarginal agricultural lands was authorized by the National Industrial Recovery Act of

Table 40. Land Utilization Projects, Administering Agencies, and Areas, 1959.

PROJECT	ADMINISTERING AGENCY	ACRES ¹
Beltrami Island	Minnesota Department of Conservation (Division of Game and Fish)	81,700
Pine Island	Minnesota Department of Conservation (Division of Forestry)	21,176
St. Croix	Minnesota Department of Conservation (Division of State Parks)	18,499
TOTAL AREA, STATE		121,375
Twin Lake and Flat Lake	Bureau of Indian Affairs (White Earth Indian Reservation)	28,555
Mud Lake	Bureau of Sport Fisheries and Wildlife (Mud Lake Wildlife Refuge)	60,216
Rice Lake	Bureau of Sport Fisheries and Wildlife (Rice Lake Wildlife Refuge)	7,786
TOTAL AREA, FEDERAL		96,557
TOTAL AREA, STATE AND FEDERAL		217,932

¹ Federal figures.

Source: Correspondence with various federal agencies.

June 16, 1933. Supervision of the program was assigned initially to the Federal Emergency Relief Administration, which in turn assigned responsibility for the planning of agricultural demonstration projects to the Land Policy Section of the Agricultural Adjustment Administration and for the planning of wildlife projects to the Bureau of Biological Survey in the Department of Agriculture. Many changes in the administration of the program have subsequently taken place.¹

Several tracts, aggregating approximately 218,000 acres, were acquired in Minnesota and are now administered by various state and federal agencies. The projects, present administering agencies, and areas are shown in Table 40, page 130.

The Beltrami Island Development Project in Beltrami, Lake of the Woods, and Roseau counties was initiated at the request of the Minnesota Department of Conservation and the Minnesota Rural Rehabilitation Corporation, and was formally approved by the Federal Emergency Relief Administration on December 27, 1934. The lands were leased to the state in 1940 for 50 years for use as a wildlife refuge. In 1942, Executive Order 9091 designated them as the Beltrami Wildlife Management Area under the general custody of the Fish and Wildlife Service in the Department of the Interior, but made no change in the lease to the state. Although the lands are still in federal ownership, they are generally classed as state lands because of the long-term lease to the state, and are so treated in this report.

¹ The administrative history of the program is a complicated one. The agencies which have been in charge of it may be summarized as follows:

Federal Emergency Relief Administration, 1933-1935.

Resettlement Administration, 1935-1937. All of its powers and duties were transferred to the Secretary of Agriculture on December 31, 1936, but it continued to handle the land retirement program as a unit in the Department of Agriculture until September 1, 1937. It was then replaced by the Farm Security Administration, and administration of the Land Conservation and Land Utilization Program was assigned to the Bureau of Agricultural Economics. (The Farm Security Administration was replaced in 1946 by the Farmers Home Administration, which has had no responsibilities in connection with the land retirement program.)

Secretary of Agriculture, 1936- . He delegated authority to

Resettlement Administration to September 1, 1937.

Bureau of Agricultural Economics, 1937-1938.

Soil Conservation Service, 1938-1953. (Lands in the Beltrami Island Project and the Pine Island Project were leased to the State of Minnesota in 1940 but remained under the general custody of the Fish and Wildlife Service in the Department of the Interior and of the Forest Service in the Department of Agriculture.)

Forest Service, 1953- . Forest Service administration does not include lands leased or granted to a state or placed under the administration of another federal agency such as the Bureau of Indian Affairs or the Bureau of Sport Fisheries and Wildlife. It now has no responsibility for the administration of any land utilization projects in Minnesota.

The Pine Island Development Project was also approved in 1934. The lands were placed under the custody of the Forest Service in 1938. In 1940 they were leased to the State of Minnesota, for 50 years, and in 1944 1,313 acres of the Isolated Settler Land Utilization Project were added to the lease. The original plan was to use them as a basis for land exchanges with the state, but in 1953 the Secretary of Agriculture decided to give them to the state under authority of Section 32 of the Bankhead-Jones Farm Tenant Act of 1937. The grant was dated October 11, 1954, and included lands in Beltrami, Carlton, Koochiching, and Lake of the Woods counties. It specified that the lands must be used for public purposes, conservation, and land utilization, and reserved to the United States 75 per cent of the minerals and all of the fissionable materials.

Another tract to which the state has acquired title is the St. Croix Recreational Development Project in Pine County. The land was placed under the administration of the National Park Service in 1936 by Executive Order 7496. Then, in 1943 it was transferred to the state under authority of the act of June 6, 1942, and is now a part of the St. Croix State Park. The deed specified that the lands must be used for park, recreational, and conservation purposes.

Acquisitions under the submarginal land program in the White Earth Indian Reservation were placed under the Administration of the Bureau of Indian Affairs in 1936 by Executive Order 1868. Title has not been transferred to the Indians, and receipts from the lands are deposited in the Treasury of the United States.

Nearly half of the total area of the Rice Lake Wildlife Refuge and 99 per cent of the Mud Lake Wildlife Refuge were acquired under the program. They were transferred to the Bureau of Biological Survey in 1935 and 1937 by Executive Orders 7221 and 1783, and are now administered by the Bureau of Sport Fisheries and Wildlife.

STATE LAND POLICIES

The state's initial policy with respect to the lands granted it by the federal government was to dispose of them for cash. At no time has it followed the free-land policy of the United States which was embodied in the Homestead Act of 1862 and foreshadowed in the Preemption Act of 1841. The explanation of the difference in policy doubtless lies in the fact that the federal grants to the state were made for specific purposes and thus constituted a trust which could not be fulfilled by giving the lands away. A conspicuous departure from the terms of the swamp-land grant, through using these lands to aid in railroad construction, was never questioned by Congress. Permanent retention of certain lands

in state ownership was inaugurated in 1889 with the reservation of minerals lands; and the precedent thus established was followed in 1891 by the creation of Itasca Park.

SCHOOL LANDS

School lands (Section 16 and 36) were the first federal grants to receive attention. These lands had been reserved for the state-to-be by the Organic Act of 1849 and actually granted to it by the Enabling Act of 1857. Article 8 of the Constitution adopted October 13, 1857, contained specific provision for their sale and for covering the proceeds into a perpetual fund:

"All the proceeds of such lands as are or hereafter may be granted by the United States for the use of schools within each township of this State shall remain a perpetual school fund to the State; and not more than one-third ($\frac{1}{3}$) of said lands may be sold in two (2) years, one-third ($\frac{1}{3}$) in five (5) years, and one-third ($\frac{1}{3}$) in ten (10) years; but the lands of greatest value shall be sold first; *provided*, that no portion of said lands shall be sold otherwise than at public sale. The principal of all funds arising from sale or other disposition of lands or other property, granted or entrusted to this State in any township for educational purposes, shall forever be preserved inviolate and undiminished; and the income from the lease or sale of said school lands shall be distributed to the different townships throughout the State, in proportion to the number of scholars in each township, between the ages of five and twenty-one years; and shall be faithfully applied to the specific objects of the original grants or appropriations."

Prompt provision for the protection of state lands was made by an act passed March 20, 1858, which established penalties for trespass "on lands granted to this State by any act or resolution of Congress, for the support of schools or universities, or for internal improvements." This act was repealed and reenacted in modified form in 1861.

No procedure for selling state lands was adopted until March of 1861, when two acts dealing with the subject were passed. One act created a State Board of Commissioners of School Lands consisting of the Governor, the Attorney General, and the Superintendent of Public Instruction, to which was given "general care and supervision of the school lands, the selling or leasing of the same, and the investment and disposition of the funds arising therefrom." No school land was to be sold for less than its appraised value or for less than \$7.00 per acre. The other act created a State Board of Commissioners of Public Lands with the same membership and with general supervision over all classes of state land.

No sales were made under these acts, both of which were repealed the next year. An act of March 10, 1862, abolished the two boards of land

commissioners and established a State Land Office headed by the State Auditor, who was made *ex officio* the State Land Commissioner — an arrangement that was to continue for many years. The Land Commissioner was given general charge and supervision of state lands, with authority to sell, lease, and dispose of them as provided by law. The minimum price of school lands was reduced to \$5.00 per acre, and no lands were to be sold in larger quantities than 160 acres. The act repeated the constitutional provision that the principal arising from all sales of school lands shall constitute a perpetual school fund, and added that "all moneys received as interest on such permanent fund, or rents of leased lands or penalties, shall constitute the current school fund of the State." The school fund had its start in 1862, when 38,247 acres of school land were sold for \$242,876.

Subsequent legislatures made numerous changes in the details relating to the sale and lease of school and other state lands. In 1863 the Land Commissioner was authorized to sell pine stumpage on school lands at not less than a minimum price to be fixed by the surveyor general of logs and lumber. This procedure was made obligatory in 1877, with the proviso that sales could be made when, and only when, the timber was "liable to waste." This restriction had little practical effect, since virtually all timber in the northern part of the state was liable to waste because of the ever-present danger of fire.

The act of 1877 attempted to strengthen the previous provisions relating to timber sales, which had proved utterly inadequate to protect the state's interests. It required a bond of timber purchasers, reserved title to and control over the timber until full payment of the purchase price, and established penalties for placing any but the agreed mark on logs cut from state lands. Still further safeguards were added in 1885. One of these authorized the sale of stumpage only upon approval of a majority of a board consisting of the Governor, the State Treasurer, and the State Land Commissioner. The legislature also provided that after the sale and removal of the pine timber, "the land may be appraised and sold in the same manner and on the same terms as other lands are appraised and sold under the provisions of this chapter," which retained the minimum price of \$5.00 per acre. Obviously the separation of the sale of timber and land was intended to obtain for the state the full value of both.

Nevertheless the state continued to suffer from the ingenuity of timber operators and the venality of public officials, which were particularly widespread and notorious in connection with the school lands. The situation finally became so malodorous that in 1893 the legislature appointed a Pine Land Investigating Committee "to inquire into any and all frauds that have been committed at any time in any part of the

state by which the public lands owned by the state . . . have been despoiled of their timber by open robbery and under-valuation of their value, or by any other means."

The committee in a report to the Governor dated December 21, 1894, submitted convincing evidence of the frauds from which the state had suffered and a scathing indictment of those responsible for them (102). Among other things, it found that timber sales had frequently been made with no advertising whatever; that large numbers of estimates and appraisals had been signed in blank by a man who had never been in the employ of the Auditor's office in any capacity; that the surveyors general of logs and lumber were ignorant of their duties and negligent and dishonest in their performance; that scalers were often used who were in the employ of the party cutting the logs. As evidence of the incompetence of many of the appraisers and estimators it cited an individual appointed on the recommendation of ten citizens whose previous experience had been nine years as a sailor, seven years as a policeman, fourteen months running a ferry boat, three years as a surveyor's helper, and four years as deputy warden in a state prison. This man testified under oath that he did not know the value of timber and that a clerk in the Auditor's office usually fixed the value for him and filled out his reports. "The character of estimates and appraisals made in the interest of the state, in the opinion of this committee, bears no resemblance whatever to that required of Caesar's wife, and we feel sure that had the men who made the most of them been living in the time of Diogenes the search-light of his lantern would never have been turned in their direction."

Another fruitful source of fraud identified by the committee was the practice of allowing certain parties to run up the price of stumpage at a sale for the purpose of shutting out honest bidders; of allowing the cutting permit to expire with no cutting and with no penalty; and then of allowing the same party to repurchase the tract at a greatly reduced price. For example, a sale of pine timber was made at \$4.40 per M to one William Sauntry, who did no cutting and two years later repurchased the same timber at \$1.50 per M — a loss to the state of \$2.90 per M, or of \$4,350 on an estimated stand of 1,500,000 board feet. Under the law, the purchaser had to agree to cut clean, without waste, within the specified time, and to reimburse the state for any loss it might suffer because of his failure to do so.

The committee described as follows the procedure commonly followed by a timber operator who, by chicanery of one sort or another, had succeeded in buying some school-land stumpage for a quarter to a third of its value: "The next step is to see the surveyor general and get one of their own employees appointed to scale the timber, or in lieu

thereof some one who will keep his 'eyes and mouth closed' to everything not seen on the landing; then a small patch of timber (40 acres will do) is purchased adjoining the school section. The party then proceeds to cut and haul from both pieces of land at the same time; he cuts 6,000,000 feet from the school section and reports to the blind scaler at the landing that it comes from his own land, and from the 40 acres in question he cuts 300,000 feet and magnanimously gives the school section credit for that amount."

In spite of the fact that there was no authorization for the sale of hardwood timber from school lands, the committee found that thousands of acres of school land suitable for farming whose value was greatly enhanced by a thrifty growth of hardwoods had been stripped of their timber without authority of law. Furthermore, because of the failure of responsible officials to make any estimate or appraisal of the timbers sold, the state had been robbed of thousands of dollars worth of valuable timber. With respect to pine stumpage, the committee came to the conclusion that there had not been a single legal or valid sale from March 7, 1885 to January 1, 1891, because of the failure of the Land Commissioner to submit proposed sales to the Governor, Treasurer, and Auditor for their approval, as required by law.

During the brief period of the committee's existence, the state recovered \$30,526 for underpayments of stumpage purchased from school lands, and suits involving additional claims for some \$362,000 were pending or in preparation. Sales of hardwood stumpage were stopped, and large amounts were undoubtedly saved in sales of pine stumpage as a result of improved practices brought about by the committee's investigations. It recommended numerous changes in existing legislation, several of which were adopted by the legislature the next year. Ignatius Donnelly, chairman of the committee, characterized by Folwell as a man who made the investigation and exposure of abuses a field of action peculiarly his own, submitted a supplementary report in which he urged that the state "should absolutely refuse to permit any private party to purchase the stumpage of its pine land under any and all circumstances." He believed that in cases where cutting was necessary, as in threat of fire, the state should do its own logging, drive the logs to one of the great lumber markets such as Minneapolis or Duluth, and sell the logs at auction under adequate precautions to prevent collusion.

The act of April 22, 1895, went into great detail regarding sales of land and timber. Great precautions were taken to assure the competence of surveyors general, estimators, appraisers, and scalers, and to prevent dishonesty. The provisions against trespass on state lands were strengthened. The Governor, Auditor, and Treasurer were constituted a Board of Timber Commissioners, in which the Governor and one other mem-

ber comprised a quorum. The Attorney General was added to the board in 1905, and in 1925 it was abolished.

No cutting permit could be issued for more than two logging seasons, but a one-year extension could be granted by unanimous consent of the Board of Timber Commissioners. In addition to pine, the Land Commissioner was authorized to sell tamarac and cedar suitable for posts, telegraph poles, or railroad ties when "liable to waste" and not otherwise. In 1909 spruce, balsam, balm of Gilead, birch, and poplar were added to the species that might be sold.

Further legislative attempts to protect the state's interests were made as weaknesses in the 1895 law appeared. Folwell's comment on the situation is very much to the point: "The increased rigor of the law indicates that the irregular denudation of state lands had not become a lost art and that their protection was still necessary. . . The number of millions of dollars lost to the state, especially to her school and university funds, by a vicious forest policy and unconscionable depredations will never be computed." These early abuses, which were perhaps inevitable under existing conditions, and which were more or less paralleled on federal lands, have long since been corrected.

School lands are by no means limited to Section 16 and 36, but include large areas of indemnity selections which the state was permitted to make when these sections had become occupied, reserved or otherwise unavailable before the state obtained title to them. This procedure might be advantageous or disadvantageous, depending on the relative quality of the original school sections and of the indemnity selections which the state was able to make. Reference has previously been made to an indemnity selection in the latter part of the 1880's which would have given the state three forties in the immensely valuable Mountain Iron mine, but which was relinquished before the state obtained title to the land for reasons which have never been satisfactorily explained. The relinquishment is particularly strange in view of the fact that the State Geologist, N. H. Winchell, had called the Auditor's attention to the presence of iron in the Mesabi Range and had advised him to hold on to any lands which the state might own in that region.

The average price of school lands, from 1862 to date, has run rather consistently between \$6.00 and \$7.00 per acre, exclusive of timber and mineral values. This consistency is due largely to the constitutional requirement that lands of the greatest valuation should be sold first. The early sales were naturally made in the southern counties, where the first settlements were located; and as the population moved westward and northward, land sales followed. Consequently, the first sales in the different counties came at about the same stage in their development. Altogether, about two-thirds of the school lands have been sold, and a sub-

stantial part of the remainder are now in state forests, where they are not available for sale.

UNIVERSITY, AGRICULTURAL COLLEGE, AND SALT SPRING LANDS

These grants are grouped because they were all used for the benefit of the University. The story of the University's success in obtaining a double land grant has already been told. Six days after passage by Congress of the act directing the Secretary of the Interior to reserve two townships of public land for the support of a university in the Territory of Minnesota the territorial legislature on February 25, 1851, incorporated the University of Minnesota to be located at the Falls of St. Anthony. The act provided that "the proceeds of all land that may hereafter be granted by the United States to the Territory for the support of a University, shall be and remain a perpetual fund, to be called the 'University Fund,' the interest of which shall be appropriated to the support of a University, and no sectarian instruction shall be allowed in such a University."

Folwell describes the eighteen years that elapsed before instruction on the college level was actually inaugurated in September, 1869, as "mostly a pitiful story of how, as the result of a series of errors and blunders, next to nothing was accomplished and a great debt was accumulated." The first of the two federal land grants played an important part in the story. Article 8 of the Constitution adopted October 13, 1857, after confirming the establishment and location of the University of Minnesota, provided that "all the rights, immunities, franchises, and endowments heretofore granted or conferred, are hereby perpetuated into the said University, and all lands which may be hereafter granted by Congress, or other donations for said University purposes, shall vest in the institution referred to in this section." That part of the act of 1851 making the proceeds of the land grant a perpetual fund was not repeated.

The next year (1858) the legislature tried to help the Regents out of the financial difficulties in which they had become involved by authorizing the issuance of \$40,000 in bonds secured by a mortgage on University lands. A new Board of Regents created by the legislature in 1860 found itself in legal as well as financial difficulties which led to a State Supreme Court decision that "the title to the lands reserved by Congress for the use and support of a State University, is in the State, and not in the corporation, and all property acquired by the Regents, real or personal, with the fund placed at their disposal, is the property of the State, the corporation being merely a trustee or agent with specified and limited powers, to use in a particular manner for a given end."

Dissatisfied with the slow progress being made by the Regents in straightening out the tangled affairs of the University, the legislature in

1863 unanimously adopted a joint resolution placing University lands, together with all buildings and grounds belonging to the University, under the Commissioner of the State Land Office (State Auditor). This official did nothing beyond extending the leases already in force; but in his annual report he noted that the timber was being stripped from University land in Rice County and recommended that the land be sold.

The next year the legislature reversed its position and on March 4, 1864, transferred all University buildings, lands, and grounds to the care of a commission of three men who were appointed sole Regents of the University. These men were authorized to compromise and pay all claims against the University by the sale of not more than 12,000 acres of University land — a figure subsequently raised to 14,000 acres. Four years later when they went out of office, following the University reorganization act of February 18, 1868, they had the satisfaction of turning the affairs of the University over to the new Board of Regents with a virtually clean financial slate. Substantial compromises with creditors of the University were partly responsible for this achievement, but it was also due in large measure to the sale and lease of University lands. Altogether, 12,310 acres had been sold, leaving 1,690 acres of the 14,000 acres authorized for sale with which to meet outstanding debts of about \$4,000. Liquidation of less than a third of the grant had saved the University from virtual bankruptcy.

With the University at last in a position of solvency, the legislature on March 5, 1868, transferred administration of the grant back to the Commissioner of the State Land Office, who was authorized to sell any of the lands on request by the Board of Regents. All proceeds were to go into a permanent University Fund, which was placed at the disposal of the Regents. The same arrangements were followed with respect to the second University grant which was approved by Congress in 1870. Of the total area included in the two grants, about a fifth now remains in state ownership. Up to 1931 sales were handled by the State Auditor in his capacity as Commissioner of Lands, and since that date by the Division of Lands and Minerals in the Department of Conservation.

On January 27, 1863, the legislature accepted the grant of 120,000 acres made by the Morrill Act of July 2, 1862, for the establishment of a college of agriculture and the mechanic arts, with the proviso that the income from the sale of the land should constitute a perpetual fund to "remain forever undiminished" and that the income therefrom should be "inviolably appropriated" to the purposes of the act. The question remained as to whether the institution to be supported by the grant should be the agricultural college which had been established at Glencoe in 1858 and to which nearly 5,000 acres of swampland had been given in 1861. The first answer was in the affirmative. In 1865 the legislature

declared it to be the purpose of that institution, under the new name "Agricultural College of Minnesota," to fulfill the conditions of the Morrill Act and made a specific appropriation from the grant for its support.

Sober second thought resulted in a change in policy. The University of Minnesota was emerging from its difficulties, with prospects for a bright future in which education in agriculture might well play a prominent part. There were obvious advantages in centralizing work in that field in a single strong institution as compared with dividing it between two institutions which would compete with each other for appropriations. Consequently the legislature voted overwhelmingly to include in the act of February 18, 1868, reorganizing the University a provision to establish an agricultural college therein. The disappointment of the citizens of Glencoe was mitigated by another act transferring to Stevens Seminary in that town the swamplands that had previously been bestowed on the agricultural college there.

An act of February 24, 1865, provided for the appraisal and sale of agricultural college lands by the Commissioner of the Land Office and the investment of the proceeds in accordance with the provisions of the basic act of March 10, 1862, dealing with school lands. No land was to be sold for less than \$5.00 per acre or for less than its appraised value. As was explained earlier, the state actually received only 94,439 acres of the 120,000 acres included in the grant because it was charged double acreage for its selection of lands within the limits of railroad grants, the minimum price of which had been raised by the government from \$1.25 to \$2.50 per acre. The lands were selected in seventeen counties, with nearly 38,000 acres in Freeborn, Sibley, and McLeod counties.

By 1912 all of the agricultural college lands had been sold for a total of \$559,528, an average of \$5.92 per acre. Although the Regents of the University never had control of the lands, the income from the permanent fund in which the proceeds from their sale was deposited and which became a part of the University Fund, was at their disposal.

Toward the latter part of the 1880's the efforts of the Regents to establish instruction in agriculture on an effective basis were vigorously criticized by the farmers of the state and they were charged with diversion of the land-grant fund. The legislature of 1887 created a joint committee to investigate the University, and a bill was introduced to separate the University and the Agricultural College. The report of the committee completely exonerated the Regents from the charge that they had stolen the grant from the farmers. A second attempt, in 1889, to remove the agricultural college came to a sudden end when the legislature by concurrent resolution accepted a gift of \$150,000 to the University from former Governor John S. Pillsbury with the solemn assurance that

the union of the agricultural college and the University would be permanent.

Minnesota was one of fourteen states to receive a federal grant of salt spring lands. The grant of 46,080 acres made by the Enabling Act of 1857 left the state free to use or dispose of the lands in any way it saw fit. The next year the state selected 34,560 acres of surveyed land in what are now Otter Tail and Wilkin counties, and 11,520 acres of unsurveyed land in what later became the White Earth Indian Reservation. Governor Sibley promptly filed a list and a map of the selected lands in the land office at Otter Tail City, with the request that they be reserved from preemption and sale; but it was not until 1871 that 26,444 acres were actually certified to the state.

Of this area, 7,643 acres were granted to the Belle Plaine Salt Company, which failed to find any water of commercial value. The legislature then, in 1873, placed the remainder of the salt-spring lands at the disposal of the University for the support of the Geological and Natural History Survey which had been established in the University the previous year. In spite of slow land sales and meagre appropriations, the State Geologist, Newton H. Winchell, succeeded in publishing a remarkable series of valuable reports. The Land Commissioner protested against placing the lands under the jurisdiction of the University, but without avail, and the University still administers the 5,751 acres of salt-spring lands that have not been sold. They are, however, not classed as "university lands" — a term reserved for the four townships granted specifically for the support of the University.

RAILROAD AND INTERNAL IMPROVEMENT LANDS

When Congress on March 3, 1857, granted Minnesota several million acres of public land to aid in the construction of four railroads, it paved the way for unexpected troubles which were to harass the state for many years. Acceptance of the grant was effected promptly as the first act of a special session of the legislature which had been called primarily to take the measures necessary to form a state government. The Council took advantage of the occasion to have a little fun. First it amended the title of a bill already passed by the House to encourage the destruction of gophers and blackbirds to include the Sioux Indians; then it struck out all of the bill after the enacting clause and inserted a consolidation of three railroad bills already well on their way toward passage. As thus amended, and with a second change in title to a more appropriate one, the bill was enacted into law on May 22. It assigned to each of the four companies concerned all of the estates and interest of the state of Minnesota in the land along its particular routes (53).

Assigning the state's interest in the lands to the railroad companies was, however, a far cry from providing them with cash. Under the terms of the federal grant, the state itself received no title to any land until the first 20 miles of a given road had been located and surveyed. It was then entitled to 76,800 acres, which it could transfer to the road in question, and which the road in turn could sell or hypothecate. When construction of the first 20-mile stretch was completed, the state was entitled to another 76,800 acres. A third 76,800 acres became available when the next 20-mile stretch was located, and so on until the road was completed.

The problem was to get a start. The severe panic which struck the country in August, 1857, made it almost impossible for the railroads to raise the necessary funds to begin construction. One company offered all of its prospective lands between Winona and the site of Waseca, some 500,000 acres, at \$1.00 per acre and found no buyers. Here was a situation where assistance from the state seemed essential. It also seemed perfectly safe. After only 20 miles of each road had been located the state would receive a liberal grant of land which it would immediately pass on to the railroad, and from then on the whole program would be self-liquidating. Population would flow in, business would boom, land values would rise, everyone would prosper.

An initial difficulty in the realization of this vision was a sentence in the Constitution which provided that "the credit of the State shall never be given or loaned in aid of any individual, association or corporation." To get around this obstacle the legislature proposed an amendment to the Constitution which would authorize the issuance of not more than \$5,000,000 of "Minnesota State Railroad Bonds" to aid in the construction of the railroads. The companies receiving the bonds were to agree to pay both principal and interest, when due, and every precaution was taken to see that they lived up to the agreement. One safeguard, for example, required each company to transfer to the State Treasurer at the time of the issue of the state bonds an equal amount of its own first mortgage bonds. In case of default by the companies the Governor was authorized to sell the corporation bonds and also to foreclose the mortgages given to secure them.

Although opposed by former Governor Gorman and a few other leaders, the amendment was adopted on April 15, 1858, by a vote of nearly four to one. In the city of Winona only one vote out of the 1,182 cast was in the negative — that of the Honorable Thomas Wilson, later Chief Justice of the Minnesota Supreme Court. The people wanted railroads, particularly when they could be had by the mere "loan of public credit," which they were misled by public men in whom they had confidence into believing did not create a debt, unless in empty form. In any event, they were assured that if the companies should ever default

and if their collateral should prove insufficient, their confiscable property and franchises would certainly protect the state against ultimate loss. Sixty-seven members of the legislature pledged themselves "individually and collectively to vote against any proposition to levy a tax either for the interest or principal of the proposed loan of State credit."

What was impossible, nevertheless happened. The railroads started construction in the late summer and fall of 1858, but by July 1, 1859, the sum total of their efforts was less than 240 miles of discontinuous, ill-executed grading. All of the roads were in such financial extremities that their contractors ceased work and they were unable to meet interest payments on the state bonds. As a result, these bonds had sunk to so low a figure that they were no longer of value as collateral.

Fortunately, of the \$5,000,000 of special bonds authorized by the amendment to the Constitution, only \$2,275,000 had actually been issued. Governor Sibley, in a message to the legislature on December 7, 1859, hoped that the legislature would "not for a moment tolerate repudiation," and urged that the state acknowledge its indebtedness and its willingness to pay as soon as it should be in a position to do so. Governor Alexander Ramsey, who succeeded him a few weeks later, proposed a plan of settlement with the railroads which would not be unduly burdensome on the state and which he hoped would result in renewed construction. He warned that if this vexing question were not settled it would remain to disturb politics, divide the people, and annually occasion discord and possibly corruption in the legislative halls. Speculators would gradually obtain possession of the bonds for a few cents on the dollar, would "knock, year after year, at the door of the legislature for their payment in full," would subsidize the press, would raise the cry of repudiation, and finally, would "pile up almost fabulous fortunes obtaining a recognition of their disputed paper and its payment at par!"

This sound counsel came to naught. The people, who had been emphatically assured that the state bonds were evidence of company debt, amply covered by company securities, felt that they had been tricked. They were adamant against any compromise, and their view prevailed in the legislature. The issue was settled — temporarily — by submission to the electors of two amendments to the Constitution, which were adopted on November 6, 1860. One expunged the entire amendment adopted in 1858 lending the credit of the state to the land-grant railroads. The other provided that no law making provision by tax or otherwise for the payment of the bonds should take effect until adopted by a majority of the electors voting thereon.

Meanwhile the legislature on March 6, 1860, directed the Governor to foreclose on behalf of the state all the mortgages covering the properties of the four land-grant railroad companies, and in his discretion to bid

them in for the state at the sale. Governor Ramsey proceeded to purchase for the state at the foreclosure sales all the rights of way, lands, property, franchises, privileges, and immunities of the four companies for the sum of \$1,000 in each case. The state again had full control in trust of all the lands granted by Congress in 1857 plus some 240 miles of graded roadbed, somewhat the worse for flood and frost. What to do with them was the next question.

The legislature of 1861 was disposed to be liberal. It voted to restore to the same companies all property and assets covered by the several foreclosures, free from all claims and liens. The grants were, however, made under certain conditions which it proved impossible for the companies to meet, and within a year they had all forfeited their rights. In 1862 the legislature technically created four new corporations which represented substantially the same interest but with changes in personnel. These companies, their successors, and assigns, after many years of effort and discouragement, finally succeeded in building the several lines contemplated by the original grant of 1857. The Saint Paul and Pacific Railroad Company (successor to the Minnesota and Pacific Railroad Company) was the first to start operations. On October 14, 1862, it announced four trains a day each way between St. Paul and St. Anthony, with a fare of 60 cents including the omnibus fare at both ends.

Progress in railroad construction continued to be slow during the War Between the States. By the close of 1865 only 210 miles of road had been completed. From then on, the movement gained momentum. At the end of 1872 Minnesota had 1,906 miles of completed railroads, of which 70 per cent had been built in four years. Figures 28 and 29 show graphically the expansion during the decade from 1869 to 1879. This development, of course, greatly influenced the movement of population, the development of agriculture, and the passage of title to large areas of public land from the government to private owners. Final homestead entries, for example, rose to 363,074 acres in 1876 — a figure not approached again until 1885, when it reached 367,226 acres. Railroad construction also encouraged increased logging in the pine country north of the Twin Cities and west of Duluth.

During this period of active railroad construction the fate of the Minnesota State Railroad Bonds remained unsettled and became deeply involved with the disposition of the federal grant for internal improvements authorized by the act of September 4, 1841. That act had promised to grant to each new state upon its admission to the Union 500,000 acres of public lands, the proceeds from the sale of which were to be used for purposes of internal improvement. Curiously enough, in a state so eager to take advantage of federal largess, the existence of that promise had remained unknown or had been ignored until 1866 when it was discovered by Elias F. Drake, then president of two Minnesota railroad

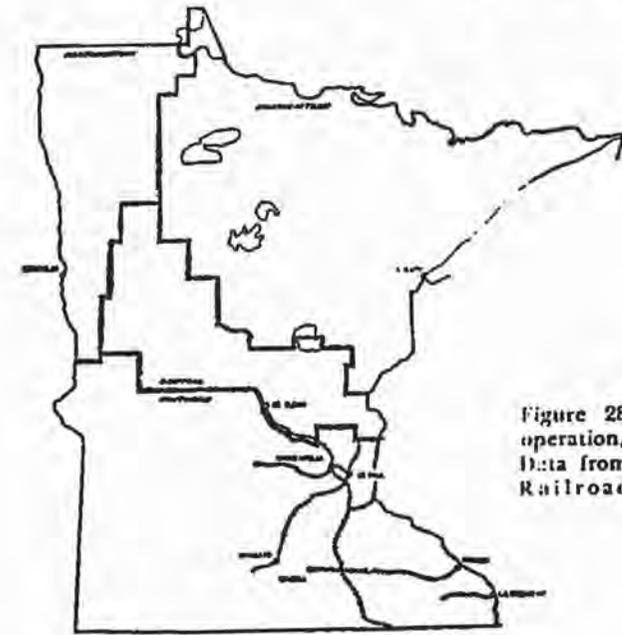


Figure 28. Railroads in operation, January 1, 1869. Data from Report of the Railroad Commissioner.

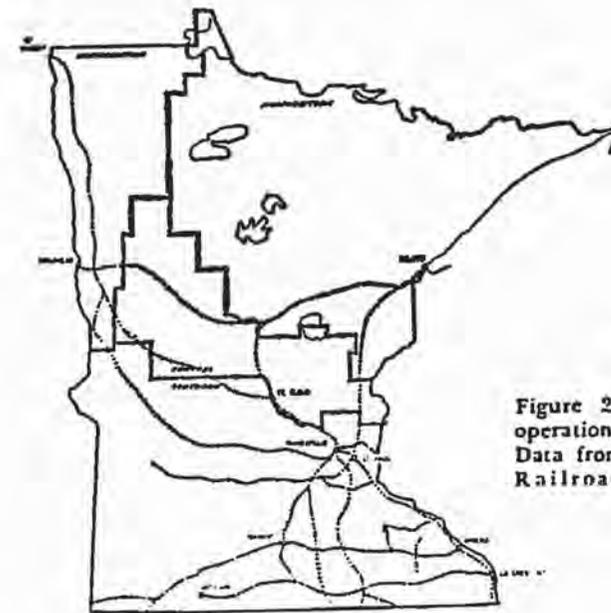


Figure 29. Railroads in operation, June 30, 1879. Data from Report of the Railroad Commissioner.

companies. The Department of the Interior recognized the belated claim of the state to the lands and authorized their selection, which was presently made. Immediately the proposal appeared that the receipts from the sale of the lands be used to pay off the old bonds. An act to this effect was submitted in 1867 to a referendum by the people, under the terms of the constitutional amendment of 1860, and was overwhelmingly rejected.

Three years later (1870) a new proposal with the same basic objective was submitted to the voters, largely because of the insistence of Governor William R. Marshall, who was convinced that the internal improvement lands had been "providentially" reserved to pay off the bonds. The act was approved by a rather narrow margin but proved inoperative because of the requirement that at least 2,000 bonds must be deposited in exchange for land at a minimum price of \$8.70 per acre. The holders of 1,080 bonds declined to "accept an offer not equal to 25 per cent of our just claims against a debtor able to pay in full," and only about half the required number of bonds was actually turned in.

Governor Horace Austin expressed surprise at the refusal of the bondholders to accept "so fair and equitable compromise" for the redemption of bonds of "questionable validity," a large proportion of which had "cost their present owners and holders but 17½ to 50 per cent of their face." On the other hand, former Governor Sibley, then a member of the House, expressed his willingness to pay "every cent" of principal and interest on the bonds. In the peroration of a speech introducing a resolution on the subject, he declared that but for his abiding faith that Minnesota would "honorably acquit herself of all her engagements," he would transfer himself to some community where he would not be subjected to the "intolerable humiliation" of being a citizen in a "repudiating State, frowned upon by a just and righteous God, and abhorred by man."

Sibley's resolution led to an act authorizing the Governor to appoint three commissioners to determine whether the bonds were "a legal and equitable obligation against the state," and if so to award the amount due each bondholder on the basis of the cost of the bonds to him. This proposal was decisively rejected by the people of the state by a two-to-one vote at a special election in May, 1871. Another decade was still to elapse before a settlement was effected.

Meanwhile, the issue of what to do with the internal-improvement lands took a new turn. Disregarding a recommendation by Governor Austin in his 1870 inaugural address that none of these lands be disposed of for any purpose until after a constitutional amendment ratified by the electors, the legislature the next year proceeded with plans to give them away. A bill to divide the 500,000 acres among the several counties,

after reaching general orders, was amended to divide the whole grant among seven different railroad companies. Governor Austin vetoed the bill in a stinging message. Among his many objections to the bill was that it invested the lands, the only remaining assets of the state, in a venture of uncertain promise instead of reserving them to pay the existing state debt.

Governor Austin's original proposal was then revived, and on November 2, 1872, the voters adopted an amendment to the Constitution providing for the appraisal and sale of the internal-improvement lands in the same manner and by the same officers as the school lands, with certain specified exceptions. It covered all moneys derived from such sales into an Internal Improvement Land Fund, and forbade the appropriation of the fund for any purpose whatever without the approval of the electors of the state. The amendment made it abundantly clear that its purpose was to authorize the sale of internal improvement lands without further legislative enactment, and to reserve to the people the right to decide what use should be made of the receipts therefrom.

During the next few years the fate of the railroad bonds was under consideration by both the courts and the legislature. The latter made two attempts to settle the matter in the form of acts submitted to referendum votes in 1877 and 1878. Both acts involved the use of internal improvement lands for the retirement of the bonds, and both were decisively defeated by the obdurate electors.

In 1881 the State Supreme Court, in a celebrated case, declared void the constitutional amendment of 1860 providing that no law making provision for the payment of the railroad bonds should take effect until adopted by a majority of the voters. When the state contracted with the bondholders in 1858, the power and duty to provide for any obligation incurred was vested in and imposed upon the legislature. By depriving the legislature of this power the 1860 amendment impaired the obligation of the bonds, which was repugnant to the clause of the Constitution of the United States declaring that no state shall pass a law impairing the obligation of contracts.

This decision by the Supreme Court cleared the way for legislative action on the bonds without referendum. Governor Pillsbury accordingly called a special session of the legislature to effect a final settlement. The resulting act of November 4, 1881, provided for the replacement of the original bonds at 50 per cent of their par value, including both principal and interest, by new bonds to be called Minnesota State Railroad Adjustment Bonds. The new bonds were to run for ten to thirty years and to carry an interest rate of 5 per cent, as compared with 7 per cent on the old bonds.

A companion act devoting the proceeds from the sale of the internal improvement lands to liquidation of the bonds was submitted to a re-

MINNESOTA LANDS

ferendum vote, as required by the constitutional amendment of 1872. This time the electors, having lost the fight to control the redemption of the old bonds, approved the proposal by a three to one vote, presumably as a preferable alternative to being taxed to pay for the new bonds.

Within a year from the passage of the adjustment act, all but 43 of the old bonds had been surrendered and new bonds to the amount of \$4,253,000 had been issued. A large block of these was purchased for the school and university permanent funds. The specter of repudiation was finally laid to rest on January 16, 1882, when 2,152 of the original Minnesota State Railroad Bonds were burned at the state capitol in the presence of the Governor, the State Auditor, and the State Treasurer.

Of the 496,482 acres actually received by the state under the internal improvement grant up to June 1, 1958, nearly 99 per cent had been sold for approximately \$3,000,000 — considerably less than the principal of the railroad adjustment bonds. An amendment to the Constitution adopted in 1898 dedicated future income from the Internal Improvement Land Fund, which now has a corpus of about \$403,000, to the State Road and Bridge Fund.

SWAMPLANDS

Minnesota was one of fifteen states to receive a federal grant of all the swamplands within its borders. The grant, made in 1860, was much the largest of the federal land grants with the exception of those to aid in the construction of certain specified railroads, for which the state acted merely as trustee.

Although the act making the donation provided specifically that the proceeds from the sale of the lands should be devoted so far as might be necessary to their drainage, the state took no steps in this direction. Instead, it granted 2,858,583 acres of swampland to eight railroad companies (Table 41), or 34 per cent of the area included in the federal grants (67).

Other specific grants of swampland were made by the state in 1861 to the county commissioners of McLeod County as trustees of Stevens Seminary (4,684 acres), in 1862 to the Madelia and Sioux Falls Wagon Road (4,684 acres), and in 1865 to the Cannon River Manufacturing Association (24,190 acres). Also, an act of February 13, 1865, made the following appropriations:

For an insane asylum — 100,000 acres.

For an institute for the education of the deaf, dumb, and blind at Faribault — 100,000 acres.

For each normal school then established or thereafter to be established, not exceeding three — 75,000 acres.

For a state prison — 100,000 acres.

Table 41. Swampland Grants to Railroads, 1861-1881.

YEAR	GRANTEE	ACRES
1861	Lake Superior and Mississippi Railroad Company (now Northern Pacific)	694,399
1861	Taylor's Falls and Lake Superior Railroad Company (now Northern Pacific)	91,830
1863	St. Paul and Chicago Railroad Company (now Chicago, Milwaukee, St. Paul and Pacific)	462,336
1865	Minneapolis and St. Cloud Railroad Company (now Great Northern)	425,664
1865	Southern Minnesota Railroad Company (now Chicago, Milwaukee, St. Paul and Pacific)	36,778
1865	Minnesota Central Railroad Company (now Chicago Great Western)	275,000
1875	Duluth and Iron Range Railroad Company (now Duluth, Mesaba, and Iron Range Railway Company)	606,720
1881	Little Falls and Dakota Railroad Company (now Northern Pacific)	265,856
		<hr/> 2,858,583

Source: State Auditor's Report 1935-1936 (67).

Grants of swampland were stopped in 1881 by the adoption of a constitutional amendment (Art. 8, Sec. 2) which provided that thereafter swamplands should be sold in the same manner as school lands. Receipts were placed in a permanent trust fund, the proceeds from which were to be apportioned one-half to the common school fund and one-half to the state's educational institutions in the relative ratio of the cost of support of such institutions.

Altogether more than 3 million acres of swamplands were given away, of which the railroad companies received the lion's share. These gifts were in violation of the terms of the federal grant, which provided for the sale and reclamation of the lands. Minnesota was not alone in this respect. Iowa, for example, which had received a swampland grant in 1850, donated some of it to the counties, which in turn granted it to aid in the construction of several railroads. This action by the counties was taken in accordance with the permission of the legislature to devote the swamplands or the proceeds thereof to the erection of public buildings for the purpose of education, the building of bridges, roads, and highways, or for building institutions of learning.

In 1879 the United States Supreme Court, in the case of *Emigrant Company v. County of Adams [Iowa]* (100 U.S. 61), decided that the language of the Congressional grant "implies that the State was to have

the full power of disposition of the lands, and only gives direction as to the application of the proceeds. . . It is very questionable whether the security for the application of the proceeds thus pointed out does not rest upon the good faith of the State, and whether the State may not exercise its discretion in that behalf without being liable to be called to account, and without affecting the title to the lands disposed of. At all events, it would seem that Congress alone has the power to enforce the conditions of the grant, either by a revocation thereof, or other suitable action, in a clear case of violation of the conditions. And as the application of the proceeds to the named objects is only prescribed 'as far as necessary,' room is left for the exercise by the State of a large discretion as to the extent of the necessity."

A few years later (1882), in a similar case (*Mills County v. Railroad Companies*) involving a grant of swamplands by another Iowa County to a railroad company, the Court took the same view and added (107 U.S. 557): "We are convinced . . . that the application of the proceeds of these lands to the purposes of the grant rests upon the good faith of the State. . . It is a matter between two sovereign powers, and one which private parties cannot bring into discussion."

A case involving Minnesota's grants of swampland to railroad companies came before the United States Supreme Court in 1900 (*Stearns v. Minnesota*). Although the suit dealt primarily with another subject — the taxation of lands included in the grants — the Court took occasion to pass on their validity (179 U.S. 223): "While some of the lands, the swamp lands, were granted [by Congress] for a purpose other than railroad construction, it has long since been settled that Congress alone can inquire into the manner in which the State executed that trust and disposed of the lands." No such inquiry has ever been made by Congress, either in Minnesota or elsewhere.

In addition to its generous gifts to the railroads and others, the state has sold well over 300,000 acres of swamplands. Up to June 30, 1954, these sales had totaled \$2,597,000, with \$357,000 still due on sale contracts. Receipts from timber and minerals had amounted to \$9,486,000 and \$10,413,000, respectively. Altogether the swamplands have proved to be a far more valuable asset than was anticipated at the time of the grant.

PUBLIC BUILDINGS

Minnesota's Enabling Act of 1857 granted the state 10 sections of land, to be selected by the Governor, "for the purpose of completing the public buildings, or for the erection of others at the seat of government, under the direction of the legislature thereof." After a vigorous but abortive attempt by the territorial legislature in the winter of 1857 to remove the capital from St. Paul to St. Peter, the constitution of the new

state ratified in October of that year named St. Paul as the seat of government, but provided that the legislature might submit the question of a change to a vote of the people or might, without referendum, locate it upon the land granted to the state for a seat of government.

Since the 10 sections included in the grant were selected by the Governor in Kandiyohi County, it was natural that consideration should be given to the removal of the capital to that county. A bill to that effect was passed by the legislature in 1869 but was vetoed by Governor W. R. Marshall, who voiced several objections to the proposal and recommended referring it to a vote of the people. The House failed to muster the necessary two-thirds vote to override the veto, and a similar bill submitted to the legislature in 1872 was not seriously entertained.

No provision was made for the sale of the public-building lands until 1901, when the legislature authorized the auditor to sell the 6,397 acres in Kandiyohi County (3 acres less than the face amount of the grant) under the same terms as school lands, "for the purpose of creating the public buildings or for the erection of others, at the seat of government." The entire area was subsequently sold for \$125,443, an average of \$19.62 per acre, and the proceeds were credited to the Revenue Fund for the purpose of completing the state capitol building.

FROM DISPOSAL TO RESERVATION AND ACQUISITION

The first step toward changing from a policy of complete disposal to partial reservation of state lands came in 1889. An act passed in that year stated that "whenever state lands situated in the counties of St. Louis, Lake and Cook are sold . . . it shall be proper for the land commissioner of the state land office to endorse across the face of contracts or patents. . . 'All mineral rights reserved to the state.' The effect of such endorsement shall be to reserve to the state all mineral rights."

This legislation applied to only three counties and merely made it "proper" for the land commissioner to reserve mineral rights without requiring him to do so. In 1901 reservation was made mandatory throughout the state by an act which declared: "The State of Minnesota does hereby reserve for its own use and benefit, all the iron, coal, copper, gold, or other valuable minerals which may be contained, found or discovered in or upon any [of its lands]." A few years later (1909) the legislature added to this reservation "and all water power."

The mineral reservation now applies to all state lands, including tax-forfeited lands impressed with a trust in favor of the local taxing districts. It also applies to lands disposed of by exchange as well as by sale.

STATE PARKS

The earliest reservation of a specific tract for a specific purpose came

in 1891 with the establishment of Itasca State Park (46). The next year Congress granted to the state all undisposed-of federal lands within the park boundaries, consisting of approximately 7,000 acres, and in 1893 the legislature accepted the grant. A year later, J. V. Brower, the first superintendent, stated that lumber companies owned 8,823 acres within the park on which they planned to start logging operations in the near future.

These lands were gradually purchased with funds made available by appropriations and by the issuance of certificates of indebtedness. Most of them had been acquired by 1922, but the last purchase (160 acres) was not made until 1945. Meanwhile extensive logging had taken place in the park, and at one time Lake Itasca was flooded and partially filled with logs. The last great drive down the Mississippi River took place in 1919.

Itasca Park constitutes an excellent illustration of the mounting demand for outdoor recreational opportunities and of the application of the principle of multiple use in the management of state parks. In 1900, 364 tourists were recorded as having visited the park; in 1920, 3,232 persons used the campgrounds at the north end of Lake Itasca; and in 1960 there will be well over 500,000 visitors. This development could not have been foreseen by Attorney General Douglas in the early 1900's when he said: "In my judgment the purchase of all standing pine in the Park is unnecessary and would be an idle waste of money. A careful examination shows that there are hundreds of places which the public will never visit and the pine in such localities can be cut and removed without injury."

That the Attorney General was not alone in his view that logging and recreation are not incompatible is indicated by the action of the legislature in 1907 when it established Itasca Park as a state forest reserve, to be handled like any other forest reserve, and transferred its administration from the State Auditor to the State Forestry Board. Although the act provided that no primeval timber should be cut except that which was dead, down, or diseased, logging was clearly contemplated, as is shown by the proviso that all returns from timber sales should be turned into the general fund. The act also made the park a game preserve.

The next development came in the 1930's when the National Park Service insisted that state parks must be under a trained park administrator in order to qualify for assistance from the Civilian Conservation Corps. Consequently in 1935 the legislature created the Division of State Parks in the Department of Conservation. The Commissioner of the Department of Conservation thereupon divided responsibility for the management of all state parks, which in 1931 had been placed under the Division of Forestry, as follows: The Division of State Parks was to plan and operate them; the Division of Forestry was to handle fire control

and all other forestry activities; and the Division of Game and Fish was to manage wildlife resources and to enforce fish and game laws. This division of responsibility, in which the activities of the three divisions are coordinated by the Commissioner of Conservation, is still in effect.

Table 42 shows by decades the development of the state park system since the establishment of Itasca Park in 1891. Two small parks, Birch Coulee and Interstate, were established in 1893 and 1895 in Renville and Chisago counties. Then came a pause of ten years until the Minneopa Park was established in 1905 in Blue Earth County. Ten years later the large Jay Cooke Park of 9,000 acres was established in Carlton County, but on the whole the park system developed slowly until the 1930's, when the program gained speed. Fifteen parks with a present area of 6,289 acres were established during the decade from 1931 to 1940, and ten parks with an area of 33,069 acres during the decade from 1941 to 1950. Of the ten parks established between 1950 and 1959, four are in Cook and Lake counties, but the largest (6,826 acres) is in Mille Lacs County.

In general, the state park system has had a fairly steady but by no means spectacular development. Most of the acquisition has been by purchase, since few of the trust fund lands remaining in state ownership when the park program was first started were primarily suitable for park purposes. Except for grants by the federal government of part of Itasca Park and of St. Croix Park in Pine County (30,557 acres, 1943), gifts have not been extensive.

STATE FORESTS

The first State Forestry Board, of nine members, was created by the legislature in 1899 to develop and manage such tracts of land "as shall

Table 42. Establishment of State Parks by Decades, 1891-1959.

PERIOD	NUMBER		AREA	
	No.	PER CENT	ACRES	PER CENT
1891-1900	3	6	32,463	31
1901-1910	1	2	116	*
1911-1920	4	9	10,811	10
1921-1930	3	6	2,789	3
1931-1940	15	33	6,289	6
1941-1950	10	22	33,069	31
1951-1959	10	22	19,889	19
	46	100	105,426	100

* Less than 0.5 per cent.

Source: Department of Conservation, Division of State Parks.

be set aside by the legislature for forestry purposes or granted to the state by the United States government for forestry purposes or which may be given to the state for such purposes by any person." The act also authorized persons who deeded land to the state for such purposes to designate as beneficiary any public educational institution in the state to receive two-thirds of the income derived from the land.

The first gift under this act was made by ex-Governor John S. Pillsbury. It consisted of 990.55 acres of cutover pine land in Cass County. The donor died before he could complete conveyance of the land to the state, which did not acquire title until 1902, when his widow deeded the land to the state with the designation of the University of Minnesota as the beneficiary to receive two-thirds of all income ever to be derived from the lands. The gift constituted the first forest reserve, which has subsequently expanded into the present Pillsbury State Forest of 3,640 acres.

The 1901 legislature set apart certain tax-title lands for forestry purposes and provided for the quieting of title thereto in the state. No lands were, however, actually acquired and administered for forestry purposes under this act. Two years later (1903) the legislature authorized the State Forestry Board to purchase lands for forestry purposes at not more than \$2.50 per acre, but made no appropriation for such purchases.

In 1903 Congress, at the request of the State Board of Forestry, indicated its willingness to grant the state 20,000 acres of third and fourth grade public lands for forestry and experimental purposes. An area of this size was selected in St. Louis County, was formally granted by Congress in 1904 with the proviso that the land should be used for forestry purposes only, and was accepted by the state in 1905. Thus did the second state forest reserve, now the Burntside State Forest of 19,989 acres, come into existence — also as a gift.

Itasca State Park became a forest reserve in 1907, but ten years elapsed before there was any further development of the system. Preliminary steps were taken in 1913, when the legislature changed the name "forest reserve" to "state forest" and proposed a constitutional amendment authorizing the setting aside of school and other public lands as state forests, to be managed on forestry principles. Interestingly enough, the legislature less than a month before passage of the latter act had adopted a joint resolution protesting to Congress against the current proposal to transfer national forests to state control. Its objection to the proposal was based on the grounds that national forests safeguarded national interests and that "the states are not prepared to take without the cooperation of the federal government as good care of such enormously valuable property as this property is now receiving from the United States forest service."

Presumably the proposed constitutional amendment was an attempt

to improve this situation. The amendment was ratified by the people on November 3, 1914, at the same time that they rejected another proposed amendment to provide for the payment of bounties for the planting, cultivation, and protection of useful forest trees.

In 1917 the legislature took advantage of the authority given it by the constitutional amendment to make a state forest (now the Minnesota State Forest) out of all of the state lands within the Superior National Forest. Another ten years passed without further action by the legislature. Then, in 1927, it created a state forest (now the Bowstring State Forest) out of all state lands within the Minnesota (Chippewa) National Forest as established by act of Congress.

In the same year (1927) the legislature appointed an Interim Reforestation Commission to study the entire forest situation. It also directed the Commissioner of Forestry and Fire Prevention to submit to the legislature a list of all lands suitable for afforestation or reforestation, including "all data, information, and recommendations of importance to the legislature in respect to the establishment of a fixed and permanent policy or plan for the afforestation or reforestation of state-owned lands." The 1929 report of the interim commission included, among the many subjects which it covered, recommendations concerning the establishment of state forests; and a 1931 report by the director of the Division of Forestry stated that 25 per cent of the forest lands of the state, or approximately 4 million acres, should ultimately be in organized state forests.

In 1931 the legislature withdrew from sale a large area of school and other public lands and established them as state forests, but the lands were widely scattered and difficult to administer. It also created a new Department with four divisions — Forestry, Game and Fish, Drainage and Waters, and Lands and Minerals — in which the Commissioner of Forestry and Fire Prevention became the Director of the Division of Forestry. Two years later the director submitted a detailed report recommending the expansion and consolidation of state forests, including the acquisition of federal lands within state forests.

These events, coupled with the creation of the Civilian Conservation Corps, led in 1933 to the establishment of more than 1,420,000 acres of state forests. The same legislature created a State Forest Fund consisting of the receipts from acquired land within state forests and authorized payment to the counties of 50 per cent of such receipts. State forests within the Red Lake Game Preserve were, however, excepted from these provisions. Sizable additions were made to the state forest system in 1935 and 1943, and smaller additions in 1953 and 1955. The net area of state forests has also been increased without specific legislative action under a 1939 law which authorizes the counties to offer to the state, and the Commissioner of Conservation to accept, tax-forfeited lands pri-

marily suitable for the growing of timber. These lands are then held by the state free from any trust in favor of any and all taxing districts, and as acquired lands the counties receive 50 per cent of the gross income from them. Other additions have been made in the form of "conservation areas," which will be discussed later.

Table 43 traces the development of the present system of state forests. Progress was slow until 1933, when state forests constituting more than two-thirds of the total area were established. Only a fourth of the total area has been added since that date. From the standpoint of origin, 58 per cent of the state forest system consists of trust fund lands, 24 per cent of conservation area lands, and 18 per cent of acquired lands. Prominent among the latter are 77,000 acres of land leased to the Game and Fish Division by the U. S. Department of the Interior and managed also as part of the Beltrami Island State Forest, and 165,000 acres of tax-forfeited 50-50 land turned over to the state by the counties. Plans prepared by the Division of Forestry in 1958 contemplate substantial adjustment and expansion of the present system.

Table 43. Summary of Dates of Establishment of State Forests and Areas in 1958.

DATE OF ESTABLISHMENT	NUMBER		AREA	
	NO.	PER CENT	ACRES	PER CENT
1900	1	3	3,632	*
1905	1	3	19,989	1
1917	1	3	187,174	8
1927	1	3	119,742	5
1933	12	35	1,420,719	62
1935	10	30	200,521	9
1943	6	17	291,043	13
1953	1	3	11,236	*
1955	1	3	58,491	2
	34	100	2,312,547 ¹	100

* Less than 0.5 per cent.

¹ Includes 77,191 acres leased to the Division of Game and Fish by the Department of the Interior.

Source: Department of Conservation, Division of Forestry.

CONSERVATION AREAS

The so-called "conservation areas" resulted from state action to prevent default on certain drainage bonds issued by seven counties in the northern part of the state. Prior to 1925 legislation relating to public drainage ditches authorized a very small number of people to sign petitions for the construction of such ditches, so that drainage projects were commonly undertaken at the initiative of a small minority of the

property owners who would have to pay for them. The resulting ditch liens were so large that by 1929 several million acres were forfeitable for non-payment of taxes.

The situation was so serious as to force the state to intervene, which it did by an act of April 19, 1929 (Chapter 218). That act, after calling attention to the ease with which drainage projects could be undertaken proceeded to explain why state action was essential:

"Whereas . . . the Counties of Beltrami, Lake of the Woods, and Koochiching have incurred obligations to finance and refinance [drainage] ditches upon lands which it now appears were and are not suitable for agriculture, and the assessments levied upon the land supposedly benefitted thereby cannot be collected in a sum sufficient to pay such bonds and the payment of such bonds by the use of the taxing powers of said counties would result in confiscatory rates such that taxes so levied would not be paid, and . . .

"Whereas . . . default in the payment of such bonds is imminent and would damage the general credit of the State of Minnesota and all its political subdivisions, and

"Whereas certain lands in said counties . . . will become available for such ownership by reason of delinquent taxes thereon, and such lands are suitable for state ownership and administration for use as a wildlife preserve and public hunting ground and other state purposes, and will produce revenue to assist in relieving the tax burdens and preventing such bond default . . ."

The act then established the Red Lake Game Preserve, with specified boundaries; authorized the state to take absolute title, free from any trust in favor of the taxing districts, to all parcels of land within the reserve and outside of incorporated cities and villages that forfeit to the state under the provisions of the tax forfeiture act of 1927 (Chapter 119); and assumed state responsibility for paying the outstanding principal and interest on bonds issued in connection with drainage projects in the area. In other words, the state agreed to take care of the bonds in return for obtaining a clear title to tax-forfeited lands within the preserve established by the act.

The Red Lake Game Preserve was placed under the management of the Department of Conservation, which was required to classify all tax-forfeited lands acquired by the state with respect to their suitability for agriculture, forestry, and game production. Sale of lands more valuable for agriculture or timber production than for game production was authorized. Provision was made for covering receipts into a Red Lake Game Preserve Fund created by the act.

A similar act passed in 1931 (Chapter 407) started out with almost the same "whereases," but referred to "certain counties" and described

the tax-delinquent lands as suitable for use "for afforestation, reforestation, flood control projects or other public purposes." The lands to which the state obtained a clear title in return for assuming responsibility for the drainage bonds were all located in Aitkin, Roseau, and Mahnommen counties. They are commonly known as "reforestation areas" or "reforestation and flood control areas." County commissioners are authorized, under certain conditions, to request the state to establish one or more reforestation or flood control projects within the county, each of which must be approved by the Commissioner of Conservation, the Executive Council, and the Governor before it can be accepted by the state. Only one small area in Roseau County and one small area in Mahnommen County have been established under this authority.

A third act, similar to but differing in detail from that passed in 1931, was enacted in 1933 (Chapter 402). It resulted in a "reforestation project" in Marshall County.

In 1949 the legislature combined receipts from the lands acquired under these three acts in a "Consolidated Conservation Areas Fund." The act, which includes many administrative details relating to other subjects, specifies what items of income are to flow into the fund and what items of expense are to be paid out of it.

WILDLIFE AREAS

Minnesota's long-standing interest in wildlife is evidenced by the innumerable laws which it has passed dealing with the taking of fish and game and with the preservation of non-game animals. Game refuges first took the form of "statutory game refuges"—areas in private or federal ownership which were designated as refuges under agreements with the owners. State-owned game refuges entered the picture in 1931, when the Thief Lake Refuge of 15,000 acres was acquired. Within four years state-owned refuges had increased to 52,600 acres, with easements on an additional 2,900 acres. Since then the system has continued to expand, chiefly by purchase, until in 1959 state-owned refuges totaled about 625,000 acres, of which 427,000 acres was in the Red Lake Game Preserve. Purchases have been greatly facilitated by federal contributions under the Pittman-Robertson Act, which provides financial assistance in the acquisition of wildlife management areas.

An important development in the program came in 1957 when the legislature established a Wildlife Acquisition Fund and imposed a surcharge of \$1.00 on small game hunting licenses, the proceeds of which are deposited in the Acquisition Fund. That fund may be used by the Commissioner of Conservation to purchase or lease any wildlife lands, such as marsh or wetlands, which he finds it desirable to acquire in the interest of water conservation relating to wildlife development programs. Purchases and leases must be approved by the county board, which is to

be advised by supervisors of soil conservation districts regarding the best utilization and capability of the land proposed for purchase, including the questions of drainage and flood control. Another proviso is that the Commissioner must recognize that when a majority of landowners, or owners of a majority of the land in a watershed, petition for a drainage outlet, the state should not interfere or unnecessarily delay drainage proceedings when those proceedings are conducted according to the Minnesota Drainage Code.

These provisions call attention to the conflict between drainage and the production of waterfowl. They have not so far interfered seriously with the state's program of wetland acquisition. In the fiscal year 1958 the Department of Conservation had no difficulty in spending \$325,000 from the Wildlife Acquisition Fund (the maximum allowed by the law), plus \$245,000 of Pittman-Robertson money, for the purchase of desirable areas of wetland. As the program expands, however, opposition may develop not only from farmers who favor drainage but from county officials who dislike to see any considerable area removed from the tax rolls.

COUNTY LAND POLICIES

TAX FORFEITURES

Until twenty-five or thirty years ago the basic land policy of the counties, as determined by the state, was to keep out of the business of land ownership. In the absence of any grants from the federal or state governments and of any general authority to acquire lands by purchase, the only way the counties could get into that business was by the forfeiture of lands in private ownership for non-payment of taxes. PRIOR TO 1935. Tax delinquency was dealt with at length by the first session of the legislature elected following Minnesota's admission to statehood. In the laws passed at this time emphasis was placed on the redemption of tax-delinquent lands by the original owner and on the purchase of tax titles by others who might wish to acquire them. Extensive taking of title to lands by the state through tax forfeiture was apparently not anticipated, and the only provision for such a contingency was a requirement that the county auditor must add each year to the current list of tax-delinquent lands being offered for sale a list of the parcels which had previously been offered and which had been neither redeemed nor sold.

Between 1860 and 1900 the state auditors, in their biennial reports to the Governor and the legislature, frequently reported extensive tax delinquency, particularly during periods of business depression and of great destruction of crops by locusts. The auditors repeatedly urged the legislature to strengthen the laws relating to tax forfeiture so that the state could give a merchantable title to forfeited lands. Nothing of importance resulted from these recommendations.

Legislation passed in 1899 represents the first real attempt to control delinquency through the threat of effective forfeiture to the state of lands upon which taxes were delinquent for three or more years. This law undoubtedly resulted from the business depression of 1893-1897, which was accompanied by extensive tax delinquency of "wild" lands in the northern part of the state. It proved ineffective, according to the minutes of the recently created State Forestry Board, because the county auditors failed to take action under its provisions. The board became interested in the matter because it thought the effective forfeiture of tax-delinquent land in the northeastern forested counties would provide the nucleus for a considerable area of state forests. The dream failed to materialize until many years later because of the lack of action by the county auditors, who unquestionably had the support of the local people in wanting to get the lands back on the tax rolls. Belief in their agricultural potentialities was still strong, and was fortified by the agricultural boom which took place in the early part of the century.

In addition to the unwillingness of the county auditors to take action, effective tax forfeiture was made virtually impossible by procedural defects in the legislation. As the Supreme Court stated in 1916, "there is no forfeiture of title [to the state] in fact. The owner still has title and the right to redeem until there has been a sale by the state to a private person, and notice of expiration of redemption given Until such time neither the state nor the purchaser, therefore, have more than a lien."

The situation worsened again during the agricultural depression of the 1920's. With the bursting of the cutover land boom, tax delinquency in the northeastern counties reached unparalleled proportions. Cutover land was often assessed at as much as three times its market value, and tax rates soared. In 1925, for example, the rate was 83.33 mills in Aitkin County, 129.70 mills in Cook County, and 134.80 mills in Koochiching County. In comparison, the rates were 31.06 mills in Murray County and 32.02 mills in Nobles County—agricultural counties in the southern part of the state. With each new increase in taxes, more and more landowners decided to quit paying and a still heavier burden was imposed on the remaining taxpayers. The vicious circle was in full swing.

In an effort to stem the swelling tide of tax delinquency and to get more land back on the tax rolls, the legislature in 1925 passed the first of the "bargain counter" tax laws. This law ordered the county auditors to sell tax-delinquent property to the highest bidder for not less than the sum of the delinquent taxes plus penalties, interest, and costs. However, if the cash value of any parcel was less than this sum, the tax lien could be settled by a payment equal to its fair cash value as determined by the county board and approved by the Minnesota Tax Commission. Furthermore, the law provided (1) that all parcels bid in for the state

for taxes for the year 1918 or prior years could be disposed of for one half of the taxes as originally assessed; and (2) that all unsold parcels which were subject to delinquent taxes for ten years or more and which had been subject to sale for three years or more could be disposed of for not less than one-fifth of the total taxes as originally assessed.

Other "bargain counter" provisions, similar to those contained in the 1925 law, were contained in laws passed in 1927, 1929, 1931, 1933, and 1935. At the same time a major effort was made to provide for absolute forfeiture to the state or to a purchaser of tax-delinquent lands not redeemed by the former owner within a specified time. A law passed in 1927 (Chapter 119) provided that all parcels of land which had been offered five times at successive annual tax-delinquent sales should become the absolute property of the purchaser or of the state, or of his or its assigns, without any right of redemption by the former owner. Notice to this effect must be included in each tax-judgment sale immediately above the signature of the clerk of the district court.

The law specified that title to all land acquired by the state through tax forfeiture shall be held in trust for each and all of the taxing districts having a financial interest in it. Furthermore, it provided that all land becoming the property of the state through tax forfeiture must be classified into agricultural and non-agricultural land by the county under the supervision of the State Auditor, and that all sales of lands must be at public auction for not less than their appraised value. Finally, the state and its subdivisions were authorized to purchase for public purposes any parcels of land offered for sale at a tax-forfeited land sale.

A law passed in 1929 (Chapter 415) resembled the 1925 and 1927 laws in aiming at the dual objective of getting tax-delinquent land back into private ownership by bargain-counter provisions and of providing for absolute forfeiture to the state or to a purchaser of tax-delinquent land not redeemed by the former owner within a specified time. In other words, the legislature attempted to deal with the tax-delinquency problem by a combination of concessions and threats. Results were disappointing. Former owners of lands which had been delinquent for many years had for the most part definitely abandoned them and were not interested in repossessing them even at bargain rates. The threat of absolute forfeiture proved less effective than had been hoped because of the friendly attitude of the courts toward landowners who wished to redeem parcels of land which by law they had absolutely forfeited. This attitude found concrete expression in the willingness of the courts to void tax titles wherever any mistake had been made in the tax-forfeiture procedure, no matter how minor that mistake might be.

W. K. Montague summarizes the situation in an article in Volume 18 of Minnesota Statutes Annotated: "For many years prior to 1936 there had been statutes (sometimes temporary in operation) for the sale of

long-time delinquent taxes, intended, in part, to give owners of land relief from tax forfeitures and the right to pay up delinquent taxes at discount rates. Their history is one of progressive deterioration of the collection of general property taxes, particularly in the northern part of the state, contributed to by the well-meant, but unsound tax policy. The inevitable climax was reached in 1935, and led to the abolition of discount forfeited tax sales. . . .

"These discount sales contributed to the almost complete collapse of the general property tax in the northern counties commonly referred to as 'the tax distress counties.' In many communities it became the general practice to permit taxes to become delinquent in order to take advantage of future discount rates sure to be authorized by the legislature."

SINCE 1935. The climax to which Mr. Montague refers resulted from an accumulation of more than 6,000,000 acres of tax-delinquent land in the northern counties, the failure of bargain laws to return much tax-delinquent land permanently to private ownership, and continuing doubt as to the validity of tax titles acquired by the state and by purchasers of tax-delinquent land. It led to the passage by the legislature in 1935 of three acts which are among the most important of those dealing with tax delinquency and tax forfeiture.

The first of these acts (Chapter 278) attempted to tighten up the procedure relating to tax forfeitures so that there might be no question as to the validity of tax titles. It limited to five years the redemption period for lands bid in for the state at the tax-judgment sales held in 1930 and thereafter. Notice of the expiration of the period within which the owner of a parcel may redeem it must be given him by the county auditor. Parcels bid in by an actual purchaser must be redeemed by the owner within 60 days, while parcels bid in by the state may be redeemed within one year. If redemption is not effected within the prescribed period, absolute title vests in the state, the purchaser, or its or his assigns. Anyone having an interest in the parcel is authorized to redeem it.

The second act (Chapter 386) provided in detail for the administration of parcels which forfeit to the state. Like the 1927 act, it required the county board to classify all tax-forfeited parcels as agricultural or non-agricultural. Such classification must be approved by the Conservation Commission (now the Commissioner of Conservation) before any lands are offered for sale. Sales must be made at or above the appraised value as determined by the county board, and either cash or partial payment is authorized. The county board may limit the use of the parcels offered for sale, and it may also limit the expenditure of public funds for facilities or services which the buyer may demand. Thus excessive costs for roads, schools, etc. may be avoided.

All parcels not sold or not offered for sale continue to be held in trust by the state for the taxing districts having an interest in them under

the supervision of the Commissioner of Conservation. The county auditor may sell hay stumpage and dead, down, or mature timber on tax-forfeited lands, or he may lease such lands, as directed by the county board. Sales of timber, as well as of timberlands, must be approved by the Commissioner of Conservation. Receipts from both sales and leases are deposited in a "Forfeited Tax Sale Fund," against which certain specified charges may be made. Any remainder is apportioned 10 per cent to the state, 30 per cent to the county, 20 per cent to the appropriate township, village, or city, and 40 per cent to the appropriate school district. In the sale of lands all minerals and mineral rights are reserved.

County boards are authorized to appoint land commissioners, who are to assist county auditors in the sale or rental of tax-forfeited lands and in other administrative activities connected with such lands. Forest management as a responsibility of the land commissioner is implied but not specified.

Lands which have become the absolute property of the state in the Red Lake Game Preserve, the reforestation and flood control areas, and the reforestation projects covered by the 1929, 1931, and 1933 laws are exempted from the provisions of the act.

The third act (Chapter 387) was the last of the "bargain counter" laws for the redemption of tax-delinquent lands. Essentially, it postponed application of the new tax-forfeiture law (Laws 1935, Chapter 278) until July 1, 1936. Since that date there have been no discount tax sales.

Under the new policy the state really began to take title to tax-forfeited lands in 1936. During the next two years the forfeiture of lands delinquent on the 1927-1930 tax rolls brought approximately 4.2 million acres into state ownership, and by June 30, 1944, the state had taken title to 4.5 million acres delinquent on the 1927-1936 tax rolls. In spite of the removal of this large acreage from the tax rolls, the Department of Taxation reported that at the beginning of 1944 "an estimated 2,008,077 acres were still delinquent on the 1942 tax and 4,793,958 acres delinquent for all years."

That the situation was not satisfactory was recognized by the legislature, which continued at every session to pass legislation relating to tax delinquency. One of the most important of these laws, passed in 1939 (Chapter 328), constituted a major revision of the 1935 act providing for the administration of tax-forfeited lands. It required county boards to classify tax-forfeited lands as conservation and non-conservation lands. The former, in spite of the similarity in name, have no relation whatever to the conservation areas established by the acts of 1929, 1931, and 1933, which are free from any trust in favor of any taxing district. The classification required by the 1939 act will be dis-

cussed later. Receipts from both conservation and non-conservation lands were to be handled practically as prescribed by the 1935 act (Chapter 386).

Subsequent legislation deals chiefly with the details of administration of tax-forfeited lands rather than with matters of basic policy. Mention should, however, be made of a 1957 law (Chapter 844) which attempts to provide an effective method of preventing the breaking of the state's title to a tax-forfeited parcel of land by or in the name of the last owner of record at the time the parcel became delinquent. Facts and claims to be presented to the court are indicated, and the procedures to be followed are stated in detail. The aim of the law is to invalidate most of the grounds previously used to break the title of the state to parcels of tax-forfeited lands which have a higher value than the total amount of the taxes accumulated against them and which the county board refuses to approve for "repurchase." How successful it will be remains to be seen, but there is a general feeling that still further legislation may be needed to make the state's title water-tight.

CONSERVATION LANDS AND MEMORIAL FORESTS

The requirement imposed on county boards in 1939 to classify all tax-forfeited lands as conservation lands and non-conservation lands indicates a realization on the part of the legislature that "conservation lands," essentially equivalent to "non-agricultural lands," have actual and potential values which can best be developed by their retention, for the time being at least, in public ownership. This is shown both by the criteria established for the classification of tax-forfeited lands and by the proviso that timber on conservation lands shall be managed under the general supervision of the Commissioner of Conservation.

Non-conservation lands may be sold at the discretion of the county board, at either public or private sale; but any standing timber thereon must be appraised separately, and its appraised value must be approved by the Commissioner of Conservation prior to its sale. Conservation lands are to remain in public ownership unless and until reclassified. The county board may, however, with the approval of the Commissioner of Conservation, sell any conservation lands which it believes should be placed in private ownership for the purpose of timber production, provided the lands lie within areas which have been zoned for restricted uses. As long as the land remains in public ownership all timber sales, stumpage appraisals, and forestry practices must be approved by the Commissioner of Conservation, who is, however, authorized by subsequent legislation (1943 and 1947) to delegate such approval to competent field officers of the Conservation Department or to waive it entirely at his discretion.

Recognition of the fact that forest management requires money was contained in a 1947 law authorizing county boards, before making their

annual apportionment of the net amount in the forfeited tax sale fund to the state and other governmental units, to set aside 10 per cent of that amount for use in developing the timber resources on tax-forfeited lands outside of memorial forests. Two years later the authorization was extended to include memorial forests. Projects on which such money is spent must have the approval of the Commissioner of Conservation. If the county board finds that such funds are insufficient for the purpose of timber management, it may levy a tax of not to exceed one mill upon the real and personal property of the county for that purpose, but such levy shall not exceed \$15,000 annually.

The same act which authorized this levy (1951, Chapter 365) also authorized the Office of Iron Range Resources and Rehabilitation, when requested by the county, to assist the county in carrying out projects aimed at the long-range development of its timber resources through matching of funds or otherwise, provided that any such project is first approved by the Commissioner of Conservation. This specific authorization, however, was not to be construed as limiting or abrogating the authority of the Office of Iron Range Resources and Rehabilitation to give temporary assistance to any county in the development of its land-use program.

Acts passed in 1947 and 1953 had authorized county boards to sell tax-forfeited lands primarily valuable for timber production which they felt should be in private ownership, either with or without a requirement that they be placed in an auxiliary forest. This implicit encouragement to transfer some timberlands from county to private ownership was made more explicit by the following declaration by the 1959 legislature: "Except as ownership of particular tracts of land should be held by the state or its subdivisions for a recognized public purpose and public access, it is the general policy of this state to encourage return of tax-forfeited lands to private ownership and the tax rolls through sales, and classification of lands according to this chapter is not in contravention of this policy."

Legislative interest in the permanent management of timberlands in county ownership was demonstrated by a law passed in 1945 providing for the establishment of "memorial forests." This law authorized county boards to "set aside tax-forfeited land which is more suitable for forest purposes than for any other purpose and dedicate said lands as a memorial forest and manage the same on forestry principles. Any moneys received as income from the lands so dedicated and set aside may be expended from the forfeited tax sale fund for the development and maintenance of the dedicated forest." In practice, income from memorial forests is expended under the authorization of the county boards to use 10 per cent of the net amount in the forfeited tax sale fund for forestry purposes.

Another law which should be mentioned in this connection is one passed in 1949 authorizing county boards to relinquish the county's equity in tax-forfeited lands that have been classified as conservation lands. If such lands are accepted by the Commissioner of Conservation, they shall thereafter be devoted to the purposes of forestry, water conservation, flood control, parks, game refuges, controlled game management areas, public shooting grounds, or other public recreational or conservation uses. The lands are held by the state free from any trust in favor of any and all taxing districts, and the county receives 50 per cent of the gross income from them. The apparent intent of the law was to relieve counties which so desired from the responsibility of managing tax-forfeited timberlands while at the same time assuring their continuance in public ownership under the administration of the Department of Conservation.

ZONING

Zoning was authorized by the legislature in 1939 "for the purpose of promoting health, safety, morals, public convenience, general prosperity, and public welfare." To this end the county board of any county in which there is located a state forest, a federal forest, or a state conservation area was "empowered to regulate and restrict within the county the location and use of buildings and structures and the use, condition of use or occupancy of lands for residences, recreation, agriculture, water conservation, forestry, and other purposes." Among the specific purposes for zoning listed by the legislature are the following:

To protect and guide the development of nonurban areas.

To encourage a distribution of population and a mode of land utilization that will facilitate the economical and adequate provision of transportation, roads, water supply, drainage, sanitation, education, recreation, and other public requirements.

To develop and conserve natural resources.

To prevent soil erosion.

The county board works in conjunction with town boards in establishing zoned districts and in prescribing regulations for their use. In unincorporated portions of the county it may establish districts of such number, shape, and area as it deems necessary and enact regulations to control their use. In both cases, regulations of the board have the force of law. Uses which are excepted from the operation of the law are hunting and fishing cabins on private land; mines, quarries, and gravel pits; hydro dams, private dams, flowage areas, transmission lines, and substations; and the harvest of any wild crop.

The authority to zone was considerably strengthened by an act passed in 1959 (Chapter 559). It is not, of course, limited to county lands but extends also to private lands. It provides a powerful tool for assuring

the use of lands for the purposes for which they are best suited. Rather surprisingly, in view of the control exercised by the state over tax-forfeited lands, no provision is made for the review or approval of county zoning by any state agency. Perhaps the reason is that zoning has so far been used chiefly as a device for saving expenditures for roads, schools, and other services, and is consequently regarded as of primary concern to the local communities.

Land classification committees were established in 1933 in each county having 25 per cent or more of its land area delinquent for taxes, or where more than 25 per cent of its land area was owned by the state or the United States. They were quite active until 1940 but not since that date. No mention of them is made in the legislation dealing with zoning or with the classification of tax-forfeited lands as conservation and non-conservation lands — areas in which it would appear that their services might have been of special value.

SUMMARY

The terms "county lands" and "county policy" imply more control by the counties over both lands and policy than actually exists. County lands are tax-forfeited lands to which the state holds a title which is absolute but impressed with a trust in favor of the counties and other local taxing districts. Basic policy for the handling of these lands is determined by the state legislature. Considerable discretion in the application of general policies to specific tracts is granted the counties, and their wishes are certainly given consideration in the enactment of legislation; but ultimate control rests with the state. Use of the terms is nevertheless convenient and is not apt to cause confusion if these facts are understood.

Until well into the present century, permanent public ownership of lands acquired by tax-forfeiture was neither anticipated nor desired. Innumerable laws were enacted to prevent lands from becoming tax delinquent and to get them back into private ownership when they did. Gradually, however, it became apparent that tax delinquency, tax forfeiture, and consequent public ownership were permanent phenomena which could not be wished or even legislated out of existence. Realization of this fact led in 1935 to legislation which it was hoped would provide an unbreakable title to tax-forfeited land, whether bid in by the state or by a private purchaser, and which actually did go far in that direction.

Three main lines of action were open with respect to the tax-forfeited lands — they could be placed in complete state ownership and management, with some form of liquidation of the equities of the counties and other local taxing districts; they could be placed in ownership of the

state as trustee, with provision for county administration and management under state supervision; or they could be sold to private purchasers, if necessary at bargain rates. The legislature chose the second of these alternatives, but with the inclusion of some aspects of the first and third. Thus, the counties were authorized to relinquish their equities to the state in return for receiving 50 per cent of the gross receipts from the relinquished lands; and the door was left open for the sale of both agricultural and forest lands, with a recent declaration that it is the general policy of the state to encourage the return of tax-forfeited lands to private ownership.

So far as the counties themselves are concerned, the prevailing sentiment is in favor of retaining county administration over the bulk of the tax-forfeited lands, but with limited transfers to the state and to private owners where local conditions warrant these courses of action. Management is gradually improving. There is, however, more interest in current than in potential future returns. The state still feels it necessary to keep a fairly close rein both on the sale and management of timberlands through the Commissioner of Conservation, and to provide liberal technical assistance through the Office of Iron Range Resources and Rehabilitation. Not all of the tax-forfeited lands have yet been classified as conservation or non-conservation, relatively few memorial forests have been established, only nine of the counties have appointed land commissioners, and only ten men with professional training in forestry are in county employ. Far from full use has been made by the counties of their zoning authority.

In a word, county land policies, at both the state and the county level, are still at a relatively early stage of evolution.

PRIVATE LAND POLICIES

Private ownership of land, resulting from both federal and state sales and grants, overwhelmingly predominates in Minnesota. Of the total land area, 73 per cent is in private ownership and 64 per cent in farm ownership. However, of the commercial forest area, only 44 per cent is in private ownership and 27 per cent in farm ownership. Forest owners, with whom this study is particularly concerned, fall into two main classes — those who acquired the land primarily for the production of agricultural crops with timber production an item of secondary consideration, and those who acquired the land primarily for its timber values with farming a secondary or negligible consideration.

FARM OWNERS

So far as this group is concerned, forest lands for the most part have continued to be a secondary consideration. Farmers as a rule are interested in harvested crops and livestock products rather than in timber.

This attitude is naturally reflected in the character of management of their forest lands. A study made by the Forest Service in 1945 classified the cutting on commercial forest lands in the Lake States (separate figures are not available for Minnesota) as poor or destructive on 79 per cent of the area owned by farmers. A later study made in 1953 and using a different basis of classification showed that productivity was medium or lower on 41 per cent of the farm woodlands in the Lake States.

Farmers are slowly but surely showing an increasing interest in their woodlands. The changing attitude is due in part to the educational and service activities of the state and federal governments, to the soil conservation, small watershed, soil bank, and agricultural conservation programs, and to the tree farm program of the forest products industries. It is also due to a growing realization of the potential value of forest lands when managed as an integral part of the farm operation. A policy of virtual neglect is gradually evolving into one of at least mild interest.

INDUSTRIAL AND OTHER OWNERS

This group is a more heterogeneous one with more varied policies. Those included in it, however, originally had this in common: Their initial acquisition of forest lands was primarily for the purpose of harvesting the timber on them and not for the purpose of producing successive crops of timber. Sustained-yield forest management was far in the offing. The general policy was to remove the merchantable timber and to sell the land to settlers or speculators. Lumbermen, like practically every one else, had a confidence in the agricultural potentialities of the cutover lands that was as unbounded as it was unjustified. When the land could not be sold, taxes were commonly allowed to go delinquent. Purchasers who were unable to make a living out of the cutover lands, as was too frequently the case, also allowed them to become tax delinquent.

The result was to decrease materially, and apparently permanently, the amount of forest and related lands in non-farm private ownership. The trend was particularly marked during the depression of the 1930's, when timber ownership was often regarded as a liability rather than an asset, farming in the northern country was not profitable, tax delinquency mounted, and the state assumed real rather than nominal ownership of the tax-forfeited lands under the tax-forfeiture law of 1935.

Then came a change both in the situation and in the attitude of the larger forest owners. Stumpage values went up, the technology of wood utilization improved, and the need for continuing supplies of raw material to meet the needs of the wood-using industries became more apparent. In the early 1940's industrial owners, particularly in the pulp and paper industry, began to take a genuine interest in sustained-yield forest management as both an essential and a profitable enterprise; and

in the late 1940's they began to hire professional foresters in considerable numbers to develop and supervise plans of forest management that would be both technically and economically sound.

The change in forest practice has led to a change in policy. Industrial owners, who now hold only 3 per cent of the commercial forest area of the state, would like to increase their holdings substantially. That some progress in this direction is being made is indicated by the fact that owners of 5,000 acres or more have increased their holdings by some 100,000 acres in the last five years; but they would like to go considerably further than has so far been possible.

Much less is known concerning trends in policy on the part of other non-farm forest owners. These owners constitute a miscellaneous group from all walks of life, whose motives and objectives as forest owners are often not clear. Many of them are non-residents, and some of them may never have even seen their properties. In general, their interest in forest management has been low, with little evidence that it is being increased to any considerable extent by educational programs.

SUMMARY

Until less than twenty years ago the policy of most private owners of forest land was to harvest the merchantable timber whenever there was a profitable market for it and then to let nature take its course. If continued ownership did not promise to be financially remunerative, it was commonly allowed to become tax delinquent, often to the point of tax forfeiture.

There has recently been a radical change in attitude on the part of the larger owners, particularly in the pulp and paper industry, with emphasis on sustained-yield forest management and expansion of present holdings. No substantial or widespread change has yet taken place in the attitude of farmers and other small forest owners, whose general policy continues to be one of laissez faire. There is, however, some evidence that an increased interest in forest management may be in the offing as a result of public education and service programs and an improved market for forest products.

PART III

PRESENT PATTERN OF LAND OWNERSHIP

It will be helpful in considering current problems in land ownership to have a clear picture of the pattern which has evolved in the century that has elapsed since Minnesota entered the Union.

OVER-ALL VIEW

Table 44 and Figure 30 show the ownership of all land in the state by classes of owners. The most striking fact brought out by the table and the chart is that nearly two-thirds of the total area is held by farmers. Other private ownership includes practically all of the urban and suburban land and a considerable area of nonfarm forest and related lands in the northern part of the state. Public ownership comprises 27 per cent of the entire area, about evenly divided between the federal government, the state, and the counties.

Table 44. Ownership of All Land by Classes of Owners, 1953.

CLASS OF OWNER	THOUSAND ACRES	PER CENT OF TOTAL
Public		
Federal ¹	3,812	8
State	5,028	10
County ²	4,799	9
	13,639	27
Private		
Farm	32,883	64
Other	4,684	9
	37,567	73
Total	51,206	100

¹ Includes Indian lands under supervision of the federal government.

² Includes the very small area owned by municipalities and other local governmental units.

Source: "Minnesota's Forest Resources" (39).

When only commercial forest land is taken into consideration, quite a different picture emerges (Table 45, Figure 30). With this class of land, public ownership rises to 56 per cent of the total area, with federal, state, and county ownership occupying about the same relative positions as for all land. Farm ownership drops to 27 per cent of the total area, but still constitutes substantially the largest single class of ownership,

Table 45. Ownership of Commercial Forest Land by Classes of Owners, 1953.

CLASS OF OWNER	THOUSAND ACRES	PER CENT OF TOTAL
Public		
Federal	3,055	17
State	3,484	19
County	3,619	20
	10,158	56
Private		
Farm	4,881	27
Other	3,059	17
	7,940	44
Total	18,098	100

Source: "Minnesota's Forest Resources" (39).

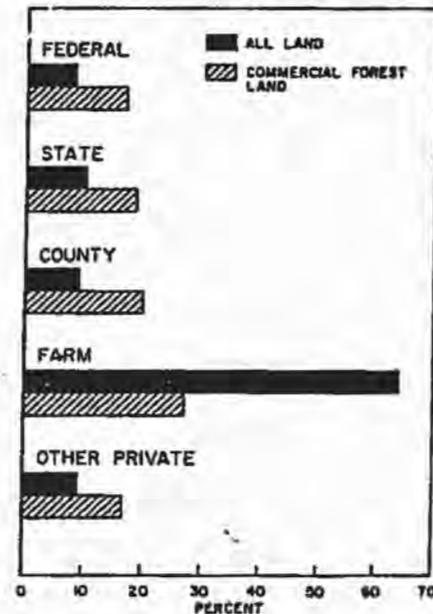


Figure 30. Ownership of all land and of commercial forest land by classes of owners, 1953.

exceeding the next largest class (county land) by 1,262,000 acres, or 35 per cent.

Distribution of all land and of commercial forest land by regions is shown in Table 46 and Figure 31. The regions are based on the "economic areas" used in the U. S. Census of Agriculture. They include the following counties:

Northeastern Region — Aitkin, Beltrami, Carlton, Cass, Clearwater, Cook, Crow Wing, Hubbard, Itasca, Koochiching, Lake, Lake of the Woods, Pine, and St. Louis.

Central Region — Becker, Benton, Chisago, Douglas, Isanti, Kanabec, Mahanomen, Mille Lacs, Morrison, Otter Tail, Sherburne, Todd, and Wadena.

Northwestern Region — Clay, Kittson, Marshall, Norman, Pennington, Polk, Red Lake, Roseau, and Wilkin.

Southern Region — all other counties in the state.

Table 46 shows for each of the four regions the percentage of all land and of commercial forest land held by each of the five classes of owners. Particularly striking are:

1. The preponderance of public ownership both of the total land area (63 per cent) and of the commercial forest land (66 per cent) in the northeastern region, with an approximately even division of ownership between the federal, state, and county governments.

Table 46. Ownership of All Land and of Commercial Forest Land by Regions and Classes of Owners, 1953.

REGION	THOUSAND ACRES	ALL LAND					TOTAL
		FEDERAL	STATE	COUNTY	FARM	OTHER PRIVATE	
		PER CENT OF REGION					
Northeastern	18,252	20	23	20	19	18	100
Central	6,363	2	2	9	81	6	100
Northwestern	6,625	1	8	7	82	2	100
Southern	19,966	*	1	*	94	4	100
	51,206	8	10	9	64	9	100
REGION	THOUSAND ACRES	COMMERCIAL FOREST LAND					TOTAL
		FEDERAL	STATE	COUNTY	FARM	OTHER PRIVATE	
		PER CENT OF REGION					
Northeastern	13,938	21	23	23	13	20	100
Central	1,905	6	3	19	64	8	100
Northwestern	987	1	19	6	66	8	100
Southern	1,268	1	1	*	90	8	100
	18,098	17	19	20	27	17	100

* Less than 0.5 per cent.

Source: Lake States Forest Experiment Station (unpublished data).

MINNESOTA LANDS

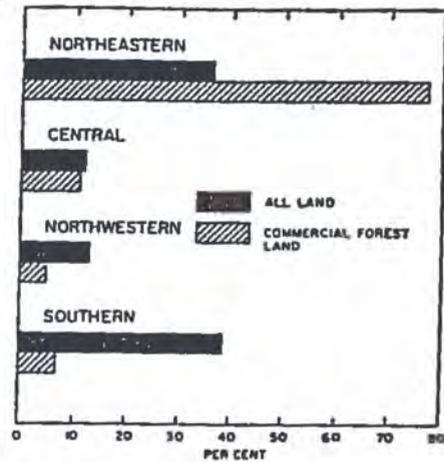


Figure 31. Distribution of all land and of commercial forest land by regions, 1953.

2. The relative insignificance of public ownership both of the total land area (6.7 per cent) and of the commercial forest land (19.5 per cent) in the central, northwestern, and southern regions combined; and the virtual lack of public ownership in the southern region (1.4 per cent).

3. The relatively small extent of industrial, urban, suburban, and other non-farm ownership, which includes only 18 per cent of the total land area and only 20 per cent of the commercial forest land in the northeastern region, and only 4.3 per cent and 7.9 per cent, respectively, in the other three regions.

Table 47 rearranges the same basic information so as to show for each class of ownership its distribution by regions. Here the following facts stand out:

1. Federal holdings are concentrated in the northeastern region, where they comprise 93 per cent of all federal ownership in the state and 96 per cent of federal ownership of commercial forest lands.

2. State and county ownership of both total land area and commercial forest land is also located predominantly in the northeastern region, although not to quite the same extent as federal ownership. Their occurrence in the southern region is negligible.

3. More than half of the farm land is located in the southern region, but there are substantial quantities in each of the other regions; and more of the commercial forest land in farm ownership lies in the northeastern region than in any one of the other three regions.

4. The bulk of the nonfarm land in private ownership lies in the northeastern region. Most of the 19 per cent which is located in the southern region doubtless consists of urban and suburban property. Of the commercial forest land in this class of ownership, 89 per cent is located in the northeastern region.

PRESENT PATTERN OF LAND OWNERSHIP

In broad terms, for both total area and commercial forest land, public ownership prevails in the northeastern region; farm ownership is overwhelmingly predominant in the central, northwestern, and southern regions; and non-farm private ownership is relatively insignificant except in the northeastern region, where it is prominent but still slightly less than federal, state, or county ownership.

Table 47. Ownership of All Land and of Commercial Forest Land by Classes of Owners and Regions, 1953.

CLASS OF OWNER	THOUSAND ACRES	ALL LAND				TOTAL
		NORTH-EASTERN	CEN-TRAL	NORTH-WESTERN	SOUTH-ERN	
		PER CENT OF OWNERSHIP				
Federal	3,812	93	3	2	2	100
State	5,028	85	3	10	2	100
County	4,799	76	12	10	2	100
Farm	32,883	11	16	16	57	100
Other Private	4,684	70	8	3	19	100
	51,206	36	12	13	39	100

CLASS OF OWNER	THOUSAND ACRES	COMMERCIAL FOREST LAND				TOTAL
		NORTH-EASTERN	CEN-TRAL	NORTH-WESTERN	SOUTH-ERN	
		PER CENT OF OWNERSHIP				
Federal	3,055	96	3	*	*	100
State	3,484	93	2	5	*	100
County	3,619	88	10	2	*	100
Farm	4,881	38	25	14	23	100
Other Private	3,059	89	5	2	4	100
	18,098	77	11	5	7	100

* Less than 0.5 per cent.

Source: Lake States Forest Experiment Station (unpublished data).

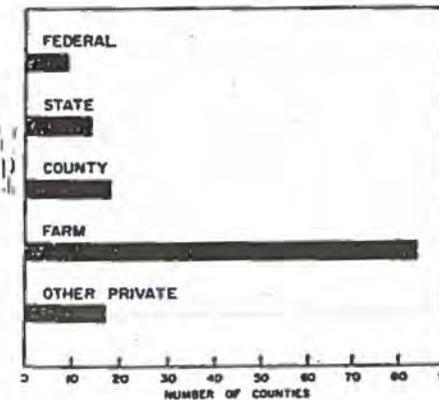


Figure 32. Number of counties in which each class of owners holds more than 10 per cent of the land in the county.

Tables 1-2 and Figures 1-13 in Appendix I provide more detailed information on land ownership by counties. The following figures showing the number of counties in which the different classes of owners account for more than 10 per cent of the land area of the county emphasize the predominance of farm ownership throughout the state (Fig. 32):

Federal	9
State	14
County	18
Farm	84
Other private	17

In 54 counties (5 in the northwestern region, 3 in the central region, and 46 in the southern region) farmers own more than 90 per cent of the land area. In nearly four-fifths of these counties, the entire area of commercial forest land is in farm ownership. Federal ownership reaches a maximum of 71 per cent in Cook County, state ownership 57 per cent in Lake of the Woods County, county ownership 30 per cent in Mille Lacs County, and nonfarm private ownership (outside of Ramsey and Hennepin counties) 32 per cent in Crow Wing County. In the north-eastern region, farm ownership reaches its maximum of 39 per cent in Carlton County.

All of the figures presented here were obtained by the Forest Service and apply to the year 1953. Some changes have taken place since that time, a few of which will be mentioned later, but they make no material change in the situation pictured in these tables and charts.

FEDERAL LANDS

Federal holdings in Minnesota in 1958 comprised 8 per cent of the total land area of the state including Indian trust properties, or 6.5 per cent excluding such properties (Table 48 and Figure 33). The Department of Agriculture, which administers the national forests, was by far the largest of the federal owners. Six agencies — Department of Justice, Post Office Department, Treasury Department, Veterans Administration, General Services Administration, and Housing and Home Finance Agency — accounted for less than 0.2 per cent of all federal holdings.

These holdings are almost wholly rural in character. A 1955 inventory of federal real property compiled by the General Services Administration classified only 5,057 acres (only about 0.1 per cent of the total area) as urban. The same inventory showed that 98 per cent of all federal lands, exclusive of trust properties, were used for the production of forests and wildlife, 1 per cent for grazing, 1 per cent for flood control and navigation, and only 0.4 per cent for all other purposes combined.

Table 48. Federal Ownership of Land by Departments, Including Trust Properties, as of the Date Indicated.

DEPARTMENT	ACRES	PER CENT OF FEDERAL HOLDINGS	PER CENT OF STATE AREA
Agriculture (1958)	2,782,274	69	5
Interior (1958 & 1959)	978,314	24	2
Defense (1959)	282,635	7	1
Other (1953)	5,845	*	*
	4,049,068	100	8

* Less than 0.5 per cent.

Source: Departments of Agriculture, Interior, and Defense, and House Committee on Government Operations.

Federal ownership of land and of commercial forest lands in 1953 by regions and counties is shown in Tables 1 and 2 and Figures 2 and 9 in Appendix I. In this connection, it should be noted that figures for the same item for different years and from different sources do not always agree. The discrepancies are due both to actual changes and to revised estimates by the agencies concerned. They are seldom of sufficient magnitude to have any appreciable effect upon the general picture and need cause no concern.

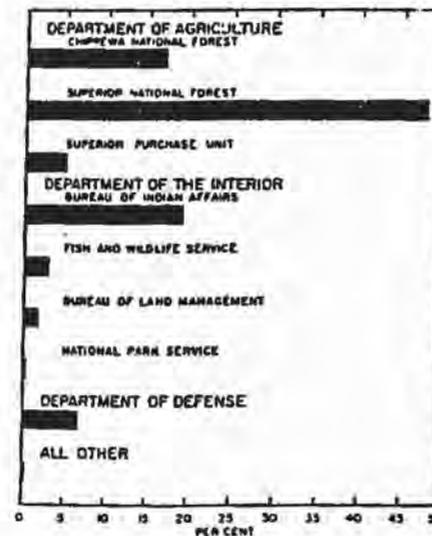


Figure 33. Federal ownership of land by departments, including trust properties.

The approximate location of national forests, purchase units, national monuments, and wildlife refuges is shown in Figure 34, of public domain lands in Figure 35, and of Indian reservations in Figure 36.

MINNESOTA LANDS

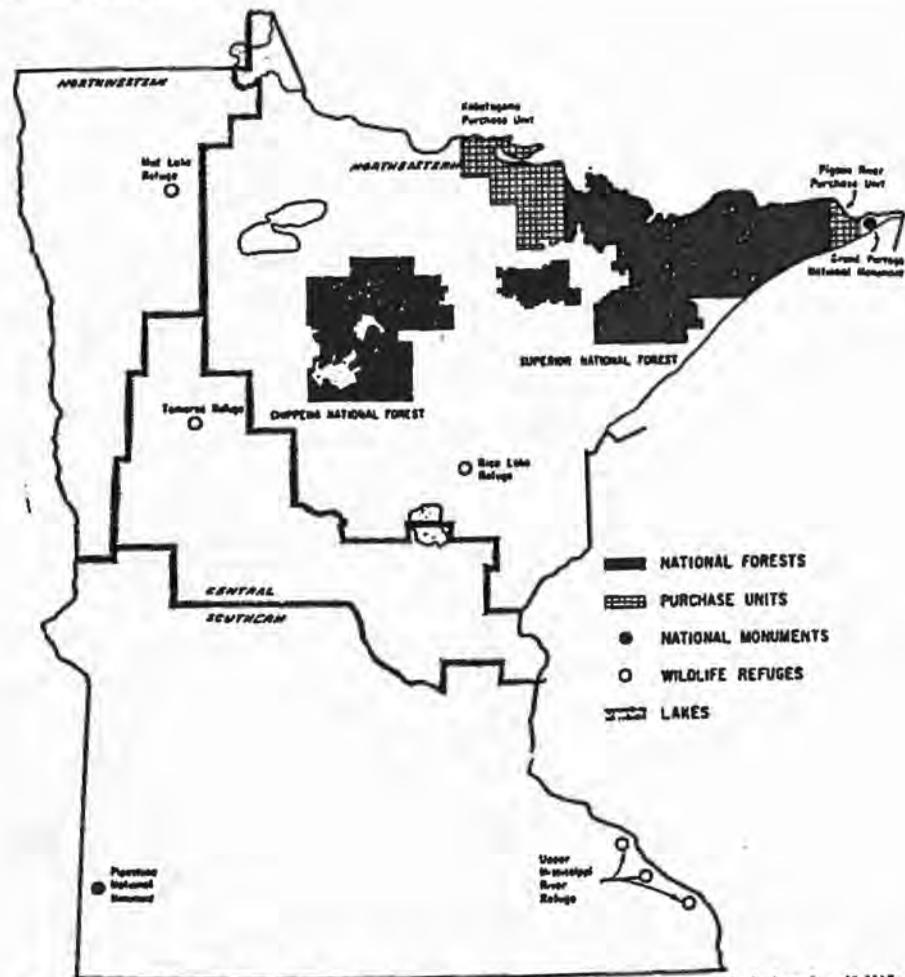


Figure 34. National forests, purchase units, national monuments, and federal wildlife refuges, 1958.

PUBLIC DOMAIN

Table 49 shows the present status of the original public domain, which at one time included the entire area of the state. As a result of federal grants, sales, and reservations, it now comprises less than 0.2 per cent of that area, about two-thirds of which is in Koochiching County. Further reductions resulting from sales and from state acquisition of school selections and "Volstead lands" are inevitable. For all practical purposes the unreserved public domain is a thing of the past.

The distribution by counties of the 82,139 acres still remaining in this category is shown in Figure 35.

PRESENT PATTERN OF LAND OWNERSHIP

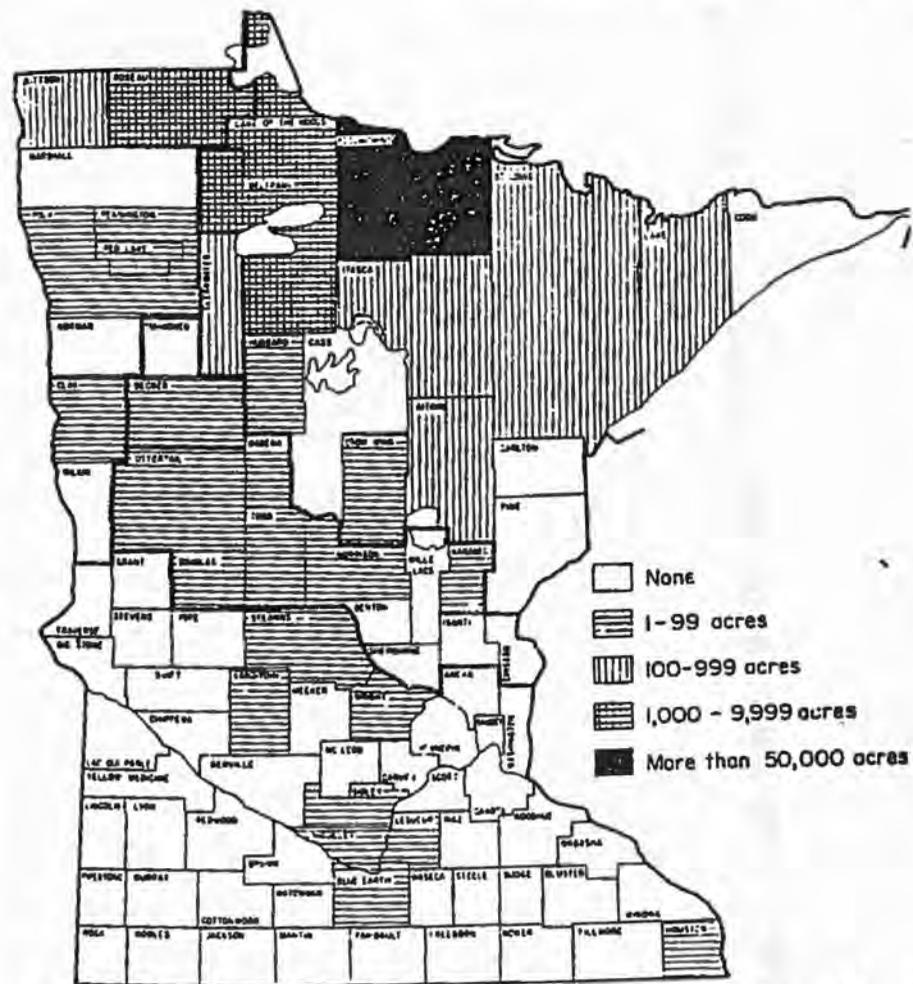


Figure 35. Distribution of land under the jurisdiction of the Bureau of Land Management by Counties, 1958.

INDIAN RESERVATIONS

"Indian title" to land in Minnesota — the right of occupancy — was extinguished rapidly during the 1850's and 1860's. The cessions by which this result was achieved were usually accompanied by reservations, which the Public Land Commission estimated to aggregate 5,026,447 acres in 1880, or 10 per cent of the land area of the state. Nearly two-thirds of the reserved area (3,200,000 acres) was in the tract which had been withheld by the Red Lake and Pembina bands of Chippewas (No. 14, Fig. 21) from their cession of October 2, 1863 (No. 11, Fig. 21). Sub-

MINNESOTA LANDS

Table 49. Lands under Jurisdiction of the Bureau of Land Management, Department of the Interior, by Counties, October 1, 1958.

COUNTY	WITH-DRAWALS	VOLSTEAD LANDS	SCHOOL SELEC-TIONS	NATL. FOR. EX-CHANGES	VACANT	TOTAL
Aitkin	*	710			*	710
Becker			*			*
Beltrami		7,684	40		1,037	8,761
Blue Earth			16			16
Clay					40	40
Clearwater		200			*	204
Crow Wing					38	38
Douglas					*	*
Houston			40			40
Hubbard			42		*	50
Itasca	40		87		54	181
Kandiyohi			40			40
Kanabec					40	40
Kittson					200	200
Koochiching	18,929	14,600	2,579		16,878	52,986
Lake			40	164	40	244
Lake of the Woods	487	1,467	2,386		4,517	8,956
Lesueur					*	*
Marshall		432			10	442
Morrison					96	96
Nicollet					22	22
Ottertail			40		*	42
Pennington		*				*
Polk			80		*	80
Red Lake		95				95
Roseau		7,632	*		322	7,962
Sibley			40			40
Stearns					*	*
St. Louis		118		279	352	749
Todd			41			41
Wadena					34	34
Wright					17	17
	19,456	33,019	5,399	443	23,822	82,139

* Less than 10 acres.

Source: Bureau of Land Management, Eastern States Office (unpublished data).

sequent large cessions in 1889 and 1904 reduced this tract to the solid block surrounding Red Lake (No. 18-b, Fig. 22), plus the ceded lands which were restored to the tribe following the Indian Reorganization Act of 1934. The other reservations were also greatly reduced in size by allotments to individual Indians which the allottees usually disposed of as promptly as the law and regulations allowed.

PRESENT PATTERN OF LAND OWNERSHIP

By 1959, the area owned by Indian tribes and individual allottees had been reduced to 728,644 acres, or about 0.4 per cent of the total area of the state (Table 50). In addition, the federal government owned 28,664 acres within reservations, most of which consisted of submarginal land in the White Earth Reservation purchased by the Resettlement Administration. Although this land is administered by the Bureau of Indian Affairs, receipts from it are covered into the Treasury of the United States and are not available for the benefit of the Indians.

Figure 36 shows the location of existing reservations, while Tables 50 and 51 contain information concerning their ownership and distribution by counties. "Public Domain" comprises land outside of established reservations which was selected by allottees. "Government" land includes the Resettlement Administration purchases in the White Earth Reservation and small areas used for administrative purposes.

Of the total area under the administration of the Bureau of Indian Affairs 87 per cent is in tribal ownership, 9 per cent in individual ownership, and 4 per cent in government ownership. The predominance of tribal ownership is due largely to the fact that the relatively enormous

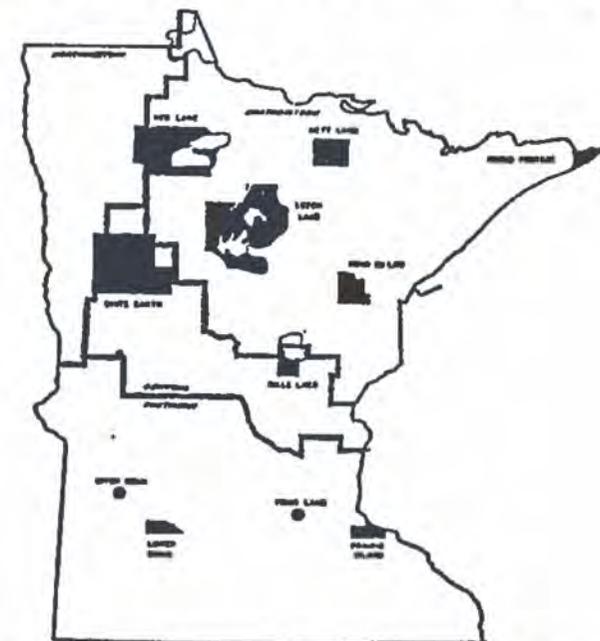


Figure 36. Indian reservations, 1958. The Red Lake Band of Chippewas owns a large area of scattered holdings north of the established reservation, including most of the Northwest Angle.

MINNESOTA LANDS

Table 50. Indian Reservations by Class of Ownership, December 31, 1959.

RESERVATION	INDIVIDUAL ALLOTMENT GOVERNMENT			TOTAL ACRES	PER CENT
	TRIBAL	ACRES	ACRES		
Chippewas					
Fond du Lac	3,932	17,895	0	21,827	3
Grand Portage	32,234	8,715	79	41,028	5
Leech Lake	12,240	12,515	4	24,759	3
Mille Lacs	3,252	132	6	3,390	*
Nett Lake	25,976	15,506	5	41,487	6
Red Lake	564,362	102	0	564,464	75
White Earth	25,382	2,070	28,570	56,021	7
Public Domain ¹	0	1,050	0	1,050	*
	667,378	57,985	28,664	754,027	99
Sioux					
Upper Sioux	746	0	0	746	*
Lower Sioux	1,743	0	0	1,743	*
Prior Lake	258	0	0	258	*
Prairie Island	534	0	0	534	*
	3,281	0	0	3,281	*
Grand Total	670,659	57,985	28,664	757,308	100

* Less than 0.5 per cent.

¹ Includes allotted lands outside of reservations.

Source: Bureau of Indian Affairs, Minneapolis Office (unpublished data).

Red Lake Reservation (74 per cent of the total area) is completely owned by the tribe except for a single allotment of 102 acres. Individual allotments play a far less prominent part in the picture than was formerly the case. The second Public Lands Commission reported that allotments to individual Indians totaled 629,423 acres on June 30, 1904, as against 65,892 acres today — a decrease of 90 per cent. Clearly the allotment policy adopted in 1887 failed to make the individual Indian the permanent landowner whom it envisioned.

The great bulk of the land in Indian ownership (92 per cent) lies in the fourteen counties in the northeastern region. From the point of view of ownership, the map (Fig. 36) is somewhat misleading, since it shows only the exterior boundaries of reservations without reference to the ownership of the land therein. It also fails to show the allotted public domain land and the tribal ceded land which was restored to the Red Lake band following passage of the Indian Reorganization Act of 1934. Leech Lake, with the largest gross area of any reservation in the state, has only 26,537 acres in Indian ownership, as compared with 48,171 acres in the Nett Lake Reservation and 408,000 acres in the solid block of Red Lake Reservation land shown on the map and an additional 156,000

PRESENT PATTERN OF LAND OWNERSHIP

Table 51. Indian Reservations by Regions and Counties, December 31, 1959.

REGION AND COUNTY	ACRES	PER CENT
Northeastern		
Aitkin	583	*
Beltrami	306,227	40
Carlton	10,053	1
Cass	13,150	2
Clearwater	129,505	17
Cook	41,028	5
Crow Wing	106	*
Hubbard	158	*
Itasca	7,901	1
Koochiching	52,820	7
Lake of the Woods	110,062	15
Pine	1,169	*
St. Louis	24,292	3
	697,054	92
Central		
Becker	7,420	1
Mahnomen	39,952	5
Mille Lacs	1,833	*
	49,205	6
Northwestern		
Marshall	240	*
Pennington	129	*
Red Lake	47	*
Roseau	7,351	1
	7,768	1
Southern		
Goodhue	534	*
Redwood	1,743	*
Scott	258	*
Yellow Medicine	746	*
	3,281	*
Total	757,308	100

* Less than 0.5 per cent.

Source: Bureau of Indian Affairs, Minneapolis Office (unpublished data).

acres of scattered land outside of that block. The 110,062 acres of Indian ownership in Lake of Woods County shown in Table 51, but not on the map, consists entirely of restored ceded lands.

The four small reservations in the southern district are the remnants of the domain once occupied by the Sioux, who at one time were recognized as possessing "Indian title" to nearly half of the state. Their population and influence decreased almost to the vanishing point after the Sioux Outbreak of 1862, which led to their wholesale removal to Dakota.

NATIONAL MONUMENTS

Minnesota has two national monuments:

Pipestone National Monument of 276 acres in Pipestone County, 98 per cent of which is in federal ownership.

Grand Portage National Monument of nearly 700 acres in Cook County, most of which is now in the Grand Portage Indian Reservation. Both the Grand Portage Band and the Minnesota Chippewa Tribe have agreed to transfer all of the land in question to the government without charge.

Table 52. Fish and Wildlife Refuges by Method of Acquisition, 1958.

REFUGE	PUBLIC		ARMY ENGRS. ACRES	MEANDERED WATERS	TOTAL ACRES	PER CENT
	DOMAIN	PURCHASE ¹				
Upper Mississippi River Wildlife and Fish Refuge— Houston, Wabasha, and Winona Counties	242	17,016	15,642	—	32,900	24
Tamarac Refuge— Becker County	40	27,873	—	1,196	29,109	21
Rice Lake Refuge— Aitkin County	—	12,056	—	3,781	15,837	11
Mud Lake Refuge— Marshall County	—	60,376	—	368	60,744	44
Mille Lacs Refuge— Mille Lacs County	1	—	—	—	1	*
	283	117,321	15,642	5,345	138,591	100
Per Cent of Total Area	*	85	11	4	100	

¹ Including land utilization projects.

* Less than 0.5 per cent.

Source: Bureau of Sport Fisheries and Wildlife, Minneapolis Office (unpublished data).

FISH AND WILDLIFE REFUGES

Table 52 summarizes the present status of fish and wildlife refuges, including methods of acquisition. Nearly 90 per cent of the total area has been acquired by purchase, including the meandered waters over which the government obtained control by becoming the riparian owner of the surrounding lands. Well over half of the purchased area — 7,786 acres in the Rice Lake Refuge and 60,216 acres in the Mud Lake Refuge — was bought by the Resettlement Administration and later transferred to the Fish and Wildlife Service.

Nearly half of the Upper Mississippi River Wildlife and Fish Refuge was made available for refuge purposes by the Corps of Army Engineers, which retains primary jurisdiction. This refuge is the longest in the United States, including intermittent tracts along 284 miles of the Mississippi River from Wabasha, Minnesota, to Rock Island, Illinois. Only about 15 per cent of the refuge is in Minnesota.

More than three-fourths of the total area in wildlife refuges is in the northwestern part of the state, where the refuges are of primary value as breeding grounds for waterfowl. It is in this region that the Bureau of Sport Fisheries and Wildlife hopes to expand its holdings with the funds made available by the increase in the price of the migratory bird hunting stamp. The Upper Mississippi Refuge is chiefly of value as a resting area for waterfowl during the spring and fall migrations. The one acre in the Mille Lacs Refuge provides protection for breeding colonies of gulls and terns.

NATIONAL FORESTS

Tables 53, 54, and 55 show the status of the Chippewa and Superior National Forests and the Superior Purchase Unit in 1958 and the method of acquisition. The latter is also shown graphically in Figure 37. The much larger area of the Superior National Forest and the much greater percentage of federal land within its boundaries are striking. The small percentage of federal land within the Superior Purchase Unit throws light on the decision of the National Forest Reservation Commission to abandon most of that area as a purchase unit when administrative considerations permit.

Another item of interest is that 66 per cent of the federally owned lands in the Chippewa National Forest, 51 per cent in the Superior National Forest, and 87 per cent in the Superior Purchase Unit have been acquired by purchase (Table 55 and Figure 37). More than a third of all the purchases have been in St. Louis County, which is perhaps natural in view of its size. Exchanges have been of minor importance from the standpoint of area, but of considerable importance from the standpoint of protection and administration. Most of them have been with private owners.

Acquisition has proceeded farthest in the Boundary Waters Canoe

MINNESOTA LANDS

Area under the stimulus of specific appropriations by Congress for purchases in that area. In 1958 only the following lands were not in federal ownership:

TYPE OF PROPERTY	NO. OF OWNERS	ACREAGE
Resorts	18	1,041
Cabins	74	2,377
Unimproved	92	140,862
	184	144,280

Of the unimproved property, 110,739 acres were owned by the state, 15,689 acres by Cook, Lake, and St. Louis counties, and 9,096 acres by industry. The Forest Service proposes to acquire these lands by purchase or exchange. Purchase of most of the smaller ownerships will be necessary, with exchange constituting the usual method of acquiring land from the state and industrial owners.

By counties the net area of federal ownership is greatest in Lake, St. Louis, and Cook counties in that order (Table 52 and Fig. 38). Only 2 per cent of the federal ownership is located in Beltrami County and less than 0.1 per cent in Koochiching County.

Table 53. Gross and Net Areas of National Forests and Purchase Units by Counties, 1958.

FOREST AND COUNTY	GROSS AREA ACRES	NET AREA	
		ACRES	PER CENT OF STATE PER CENT OF UNIT TOTAL
Chippewa National Forest			
Beltrami County	135,202	59,102	42 2
Cass County	555,824	280,739	51 10
Itasca County	622,617	297,243	48 11
	1,313,643	637,084	48 23
Superior National Forest			
Cook County	779,672	596,945	77 21
Koochiching County	676	676	100 *
Lake County	1,050,572	720,512	69 26
St. Louis County	1,066,112	638,103	60 23
	2,897,032	1,956,236	68 70
Superior Purchase Unit			
Cook County	103,435	24,206	23 1
Koochiching County	143,721	1,665	1 *
St. Louis County	607,444	163,083	27 6
	854,600	188,954	22 7
State Total	5,065,275	2,782,274	55 100

* Less than 0.5 per cent.

Source: Forest Service, Washington Office (unpublished data).

PRESENT PATTERN OF LAND OWNERSHIP

Table 54. Net Area of National Forests and Purchase Units by Counties and Method of Acquisition, 1958.

FOREST AND COUNTY	PUBLIC DOMAIN	EXCHANGE	PURCHASE	DONATION	TOTAL	PER CENT
	ACRES	ACRES	ACRES	ACRES	ACRES	PER CENT
Chippewa National Forest						
Beltrami County	5,505	1,077	52,102	358	59,102	9
Cass County	107,926	5,357	167,452	4	280,739	44
Itasca County	80,292	13,890	203,059	2	297,243	47
Superior National Forest	193,723	20,324	422,673	364	637,084	100
Cook County	275,528	53,096	268,211	110	596,945	30
Koochiching County	676	—	—	—	676	*
Lake County	348,357	42,690	328,329	1,136 ¹	720,512	37
St. Louis County	225,954	17,733	393,992	424	638,103	33
Superior Purchase Unit	850,515	113,519	990,532	1,670	1,956,236	100
Cook County	3,457	—	20,749	—	24,206	13
Koochiching County	785	—	880	—	1,665	1
St. Louis County	21,025	—	142,053	5	163,083	86
State Total	25,267	133,843	1,576,887	2,039	1,889,954	100
	1,059,505	—	—	—	2,782,274	—

* Less than 0.5 per cent.

¹ Includes 103 acres transferred from another federal agency. Source: Forest Service, Washington Office (unpublished data).

Table 55. Method of Acquisition of Land in National Forests and Purchase Units to June 30, 1958.

METHOD OF ACQUISITION	CHIPPEWA FOREST	SUPERIOR FOREST	SUPERIOR PUR. UNIT	STATE
	PER CENT			
Public Domain	30	43	13	38
Exchange	3	6	—	5
Purchase	66	51	87	57
Donation	*	*	*	*
	100	100	100	100

* Less than 0.5 per cent.
 Source: Forest Service, Washington Office (unpublished data).

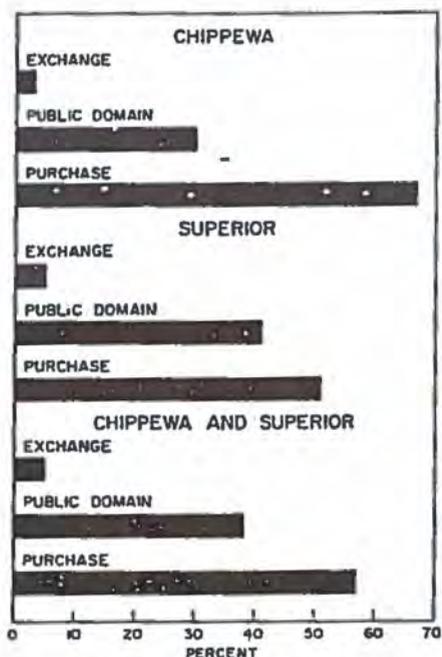


Figure 37. Method of acquisition of federal land in the Chippewa and Superior National Forests to June 30, 1958. The figures under the heading "Superior" include only the Superior National Forest; under the heading "Chippewa and Superior" they include also the Superior Purchase Unit.

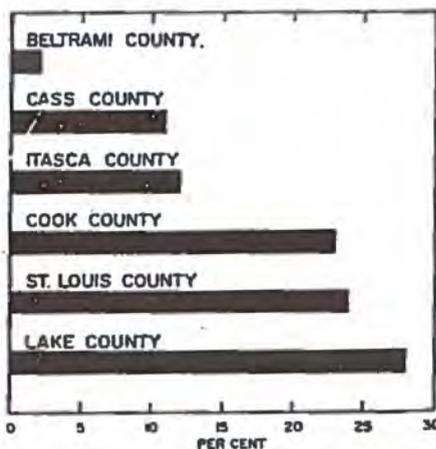


Figure 38. Distribution of national-forest land by counties, June 30, 1958.

DEPARTMENT OF DEFENSE

Lands controlled by the Department of Defense are shown in Tables 56 and 57. For military purposes these lands total only 7,199 acres, of which 72 per cent has been acquired and the remainder is controlled under easements and leases. Most of the area is in the vicinity of the Twin Cities, with a much smaller area near Duluth.

Table 56. Land Controlled by the Department of Defense for Military Purposes, 1959.

DEPARTMENT	FEDERAL OWNERSHIP	EASEMENTS AND LEASES	TOTAL CONTROLLED	
	ACRES	ACRES	ACRES	PER CENT
Army	2,819	270	3,089	43
Navy	173	27	200	3
Air Force	2,220	1,690	3,910	54
	5,212	1,987	7,199	100

Source: Department of Defense, Office of the Assistant Secretary (unpublished data).

Quite a different picture is presented by the lands used for civilian functions by the Army Corps of Engineers. These total more than 100,000 acres, the bulk of which are in the northern part of the state, where they are used for headwater, flood control, and multi-purpose reservoirs. There is, however, a sizable area used for locks and dams in the southeast section of the state. More than three-fifths of the area consists of lands in federal ownership, including 234,904 acres of original public domain, which has been made available by other government agencies, while nearly a third is controlled by easements and leases.

The holdings of the Corps of Engineers include 15,642 acres in the Upper Mississippi River Wildlife and Fish Refuge which are under the secondary jurisdiction of the Bureau of Sport Fisheries and Wildlife. With this exception, the lands are used exclusively by the Corps of Engineers in the discharge of its civil functions, which are concerned primarily with flood control and navigation. Some acquisition is currently in progress in connection with three projects.

STATE LANDS

State ownership of forest and related lands, like federal ownership, has increased markedly in the last quarter century. The area has, in fact, practically doubled since 1912, when state ownership of federal grants had been reduced to 2,500,000 acres. The increase has been due chiefly to the failure of buyers to complete their purchases, to the acquisition of tax-forfeited "conservation areas" and "50-50 lands" with no trust in favor of local taxing districts, and to gifts and purchases.

As a result, the state now owns approximately 10 per cent of the land area of Minnesota. Of this total, about 53 per cent consists of trust funds, 33 per cent of conservation areas, and 14 per cent of acquired lands.

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Table 57. Lands Controlled by the Army Corps of Engineers for Civilian Functions, 1959.

COUNTY	HEADWATERS RESERVOIRS		TOTAL CONTROLLED	
	FEDERAL OWNERSHIP ACRES	EASEMENTS AND LEASES ACRES	ACRES	PER CENT
Aitkin	5,585	5,316	10,901	3
Beltrami	20,081	711	20,792	5
Cass	125,982	31,833	157,815	39
Crow Wing	9,228	13,513	22,741	6
Hubbard	4,628	4,274	8,902	2
Itasca	62,831	14,896	77,727	19
	228,335	70,543	298,878	74
FLOOD CONTROL AND MULTI-PURPOSE RESERVOIRS				
Big Stone, Chippewa, Lac qui Parle, and Swift	516	19,676	20,192	5
Koochiching	—	58	58	*
Lake of the Woods	7,844	12,812	20,656	5
Otter Tail	1,985	—	1,985	*
Roseau	3,830	6,879	10,709	3
Traverse	811	2,564	3,375	1
Wilkin	—	209	209	*
	14,986	42,198	57,184	14
HARBORS				
Cook, Lake, St. Louis, Chisago, Hennepin, Ramsey, Washington, Dakota, Goodhue, Wabasha, and Winona	122	212	334	*
LOCKS AND DAMS				
Hennepin, Ramsey, Washington, Dakota, Goodhue, Wabasha, Winona, and Houston	33,980	10,951	44,931	12
State Total	277,423 ¹	123,904	401,327	100

* Less than 0.5 per cent.

¹ Of this area, 27,445 acres consists of public domain.

Source: Department of Defense, Office of the Assistant Secretary (unpublished data).

TRUST FUND LANDS

Trust fund lands are those received by grant from the federal government impressed with a trust that receipts from them be used permanently for certain specified purposes. Their present area and distribution are

PRESENT PATTERN OF LAND OWNERSHIP

shown by regions and classes in Table 58, and by counties in Table 59 in Appendix I. The most striking fact concerning their distribution is that 92 per cent of the total area is in the fourteen northeastern counties, with 51 per cent in the two counties of Koochiching and St. Louis. There is no trust fund land in thirty counties in the southern part of the state, and in none of the twenty-one southern counties in which it occurs, does it comprise as much as 0.5 per cent of the total area of the county. Just about half of the trust fund lands are in state forests.

Table 58. Distribution of Trust Fund Lands by Regions and Classes, 1958.

REGION	SCHOOL	SWAMP	INTERNAL IMPROVEMENT		TOTAL	
			UNIVERSITY ACRES	ACRES	ACRES	PER CENT
Northeastern	904,306	1,497,848	19,334	5,546	2,427,034	92
Central	37,509	17,707	6,341	1,360	62,917	2
Northwestern	50,387	91,609	—	120	142,116	5
Southern	3,640	269	40	51	4,000	*
	995,842	1,507,433	25,715	7,077	2,636,067	100
State Per Cent	38	61	1	*	100	

* Less than 0.5 per cent.

Source: Department of Conservation, Division of Lands and Minerals (unpublished data).

The great preponderance of swamp lands is striking. Of the school lands, approximately a third consists of indemnity selections.¹ Internal improvement lands have almost disappeared, and university lands now constitute only 1 per cent of the total area of trust fund lands.

As trust fund lands are sold, the proceeds are invested in permanent funds, the principal of which is held inviolate. Part of the receipts from the iron ore occupation tax is also allocated to the permanent funds, and income from their investment is augmented by current receipts from leases of trust fund lands and from sales of timber, minerals, and other products. The permanent trust funds have reached sizable amounts, as is indicated by the following figures of their status as of June 30, 1958:

School Fund	\$223,075,502
Swampland Fund	26,437,737
University Fund	44,789,186
Internal Improvement Land Fund	402,833
	<u>\$294,705,258</u>

¹ As of April, 1959, claims for additional indemnity selections aggregating about 12,000 acres were pending against the federal government.

MINNESOTA LANDS

Although not regarded as trust fund lands, the salt spring lands granted by the federal government are in much the same category. They were turned over to the University for the support of its Geological and Natural History Survey, and proceeds from the lands are still used for that purpose. The area has been reduced by sales from an original 46,038 acres to 5,751 acres.

STATE FORESTS

State forests now include within their exterior boundaries more than 5 million acres, of which 44 per cent is in state ownership. Details of their location by counties and classes of land are given in Table 59, and of the size and ownership of each forest in Table 60. Particularly strik-

Table 59. State Forests by Regions, Counties, and Classes of Land, 1958.

REGION AND COUNTY	TRUST FUND CONSERVATION ACQUIRED			TOTAL	
	LAND ACRES	LAND ACRES	LAND ACRES	ACRES	PER CENT
Northeastern					
Aitkin	68,694	182,216	—	250,910	11
Beltrami	25,462	38,326	1,734	65,522	3
Carlton	6,544	—	43,162	49,706	2
Cass	80,581	—	8,184	88,765	4
Clearwater	9,530	—	800	10,330	4
Cook	99,762	—	3,268	103,030	4
Crow Wing	4,885	—	65	4,950	*
Hubbard	15,317	—	48,700	64,017	3
Itasca	148,544	—	19,196	167,740	7
Koochiching	538,522	48,017	25,305	611,844	26
Lake	61,559	—	9,531	71,090	3
Lake of the Woods	1,100	228,920	59,114	289,134	13
Pine	11,320	—	80,168	91,488	4
St. Louis	246,893	—	47,958	294,851	13
	<u>1,318,713</u>	<u>497,479</u>	<u>347,185</u>	<u>2,163,377</u>	<u>94</u>
Central					
Becker	6,862	—	11,955	18,817	1
Kanabec	640	—	6,289	6,929	*
Mahnomen	1,960	—	560	2,520	*
Mille Lacs	2,840	—	13,880	16,720	1
Sherburne	938	—	2,780	3,718	*
Wadena	1,197	—	160	1,357	*
	<u>14,437</u>	<u>—</u>	<u>35,624</u>	<u>50,061</u>	<u>2</u>
Northwestern					
Roseau	—	71,186	27,923	99,109	4
State Total	<u>1,333,150</u>	<u>568,665</u>	<u>410,732</u>	<u>2,312,547</u>	<u>100</u>
State Total—Per Cent	<u>58</u>	<u>24</u>	<u>18</u>	<u>100</u>	

* Less than 0.5 per cent.

Source: Department of Conservation, Division of Forestry (unpublished data).

PRESENT PATTERN OF LAND OWNERSHIP

ing is concentration of the state forests in the fourteen northeastern counties, where 94 per cent of the total area is located. The occurrence

Table 60. State Forests by Gross Areas and Ownerships, 1958.

STATE FOREST	DATE OF ESTABLISHMENT	GROSS AREA ACRES	PER CENT OF OWNERSHIP				TOTAL
			STATE	COUNTY	FEDERAL	PRIVATE	
Beltrami Island ¹	1933	479,625	83	—	12	5	100
Blackduck	1935	85,635	7	46	*	47	100
Rowstring ²	1927	119,742	100	—	—	—	100
Buena Vista	1935	69,849	12	26	—	62	100
Burntside ³	1905	19,989	100	—	—	—	100
Chengwatana	1953	15,464	72	11	2	15	100
Cloquet Valley	1933	300,881	8	70	*	22	100
Crow Wing	1935	95,200	5	15	*	80	100
D.A.R. Memorial	1943	240	100	—	—	—	100
Finland	1933	148,680	20	27	12	41	100
Fond du Lac	1933	71,480	57	2	4	37	100
Foothills	1933	192,170	10	37	6	47	100
Gen. C. C. Andrews	1943	8,325	51	—	—	49	100
George Washington	1943	352,840	28	41	1	30	100
Grand Portage	1933	99,516	30	4	24	42	100
Kabetogama	1933	717,885	23	17	25	35	100
Koochiching	1943	208,071	75	17	*	8	100
Land o' Lakes	1933	129,507	8	65	—	27	100
Mille Lacs	1935	27,620	35	2	—	65	100
Minnesota ³	1917	187,174	100	—	—	—	100
Mississippi Headwaters	1935	87,810	9	39	—	52	100
Nemadji	1935	150,537	40	27	*	33	100
Northwest Angle	1935	79,276	14	—	70	16	100
Paul Bunyan	1935	146,970	40	28	*	32	100
Pillsbury	1900	45,359	8	10	—	82	100
Pine Island	1933	586,968	81	10	1	8	100
Rum River	1935	55,124	43	14	—	43	100
Sand Dunes	1943	10,698	35	—	—	65	100
Savanna	1943	299,900	61	15	*	24	100
Smoky Hills	1935	96,004	11	33	1	55	100
St. Croix	1943	78,282	33	29	—	38	100
Third River	1933	45,416	50	12	21	17	100
White Earth	1933	193,510	10	44	4	42	100
White Pine	1955	73,242	80	—	*	20	100
		<u>5,278,989</u>	<u>44</u>	<u>22</u>	<u>7</u>	<u>27</u>	<u>100</u>

* Less than 0.5 per cent.

¹ Land within this state forest leased to the Division of Game and Fish by the Department of the Interior is classified as state land.

² Includes only land owned by the state within the boundaries of the Chippewa National Forest when that forest was established.

³ Includes only land owned by the state within the boundaries of the Superior National Forest when that forest was established.

Source: Department of Conservation, Division of Forestry (unpublished data).

of more than a fourth of the total area in Koochiching County alone is a consequence of the concentration of trust fund lands in that county. Among these lands, swamplands comprise 64 per cent of the total and school lands 36 per cent, with only token representation of university and internal improvement lands. The location of 72 per cent of the "conservation lands" in two counties — Aitkin and Lake of the Woods — is noteworthy.

The "acquired lands" include 164,523 acres of tax-forfeited lands released by the counties to the state ("50-50 lands"), 136,533 acres obtained by gift and purchase, and 109,697 acres in wildlife management areas and state parks administered by the Division of Game and Fish and the Division of State Parks. The area of 50-50 lands increased by about 25,000 acres between October, 1958, and October, 1959.

Individual forests vary greatly in size, from 240 acres to 587,000 acres. State ownership varies from 7 per cent (Blackduck) to 83 per cent (Beltrami Island). The figure of 100 per cent given from the Bowstring, Burntside, and Minnesota state forests results from the fact that only land actually owned by the state was included in these forests at the time of their establishment. If an exterior boundary were drawn around these tracts they would not constitute a solid block in state ownership. Their inclusion in the tabulation makes the percentage of state ownership look larger than is actually the case. If they were excluded, state ownership would amount to only 40 per cent, instead of 44 per cent, of the total.

Both county ownership and private ownership are prominent in most of the state forests. County ownership exceeds state ownership in twelve of the state forests, running as high as 70 per cent of the total in the Cloquet Valley and 65 per cent in the Land o' Lakes. Private ownership exceeds state ownership in eighteen of the forests, running as high as 82 per cent in the Pillsbury, 80 per cent in the Crow Wing, 65 per cent in the Sand Dunes, and 55 per cent in the Smoky Hills. With the exception of the Northwest Angle State Forest, where Indian lands aggregate 61 per cent of the total area, federal ownership reaches maxima of only 25 per cent in the Kabetogama, 24 per cent in the Grand Portage, and 21 per cent in the Third River state forests — all in the form of national forest land.

In eleven of the thirty-four state forests, state ownership constitutes less than 15 per cent of the gross area, with a minimum of 5 per cent in the Crow Wing State Forest. These forests have an aggregate gross area of 1,375,201 acres (26 per cent of the total gross area) of which only 9 per cent is owned by the state, excluding tax-forfeited land administered by the counties. Their combined net area is only 125,932 acres (5 per cent of the total net area), but the individual tracts are so scattered as to make administration difficult. What should be the future of "paper forests" of this sort is a question of considerable importance.

STATE PARKS

State parks, from the standpoint of area, are concentrated in the northeastern and central regions, which together contain 93 per cent of the total state park area (Table 61). This situation is due to the presence in those regions of the four largest parks in the state — Itasca (with a third of the total area), St. Croix, Jay Cooke, and Mille Lacs Kathio. Nearly all of the undeveloped park area is also in these regions.

Table 61. State Parks by Regions and Counties, 1959.

REGION, COUNTY, AND PARK	DATE ESTABLISHED	ACRES	PER CENT
Northeastern			
Beltrami—Lake Bemidji	1925	317	*
Carlton—Jay Cooke	1915	8,920	9
Cass—Crow Wing ¹	1959	191	*
Schoolcraft	1959	215	*
Clearwater—Itasca	1891	22,894	23
Cook—Kodonce River ¹	1947	128	*
Bois Brule ¹	1957	940	1
Cascade River	1957	1,894	2
Temperance River	1957	223	*
Crow Wing—Crow Wing ¹	1959	689	1
Hubbard—Itasca	1891	5,600	5
Itasca—Scenic	1921	2,122	2
Schoolcraft	1959	79	*
Lake—Gooseberry Falls	1937	1,318	1
Baptism Falls ¹	1945	706	1
George Crosby-Manitou ¹	1955	4,460	4
Lake of the Woods—Zippel Bay	1959	2,608	3
Pine—St. Croix	1943	30,557	30
St. Louis—Jay Cooke	1915	80	*
McCarthy Beach	1945	135	*
		<hr/>	
		84,076	82
Central			
Becker—Itasca	1891	3,720	4
Chisago—Interstate	1895	167	*
Douglas—Lake Carlos	1937	404	*
Mille Lacs—Mille Lacs Kathio	1957	6,826	7
Morrison—Charles A. Lindbergh	1931	110	*
Crow Wing ¹	1959	376	*
		<hr/>	
		11,603	11
Northwestern			
Clay—Buffalo River	1937	247	*
Kittson—Lake Bronson	1937	746	1
Marshall—Old Mill	1937	285	*
		<hr/>	
		1,278	1

MINNESOTA LANDS

Table 61. (Continued)

REGION, COUNTY, AND PARK	DATE ESTABLISHED	ACRES	PER CENT
Southern			
Blue Earth—Minneopa	1905	116	*
Brown—Flandrau	1937	836	1
Freeborn—Helmer Myre	1947	120	*
Goodhue—Frontenac ¹	1957	950	*
Houston—Beaver Creek Valley	1937	393	*
Jackson—Kilen Woods	1945	201	*
Kandiyohi—Sibley	1919	898	*
Lac qui Parle—Lac qui Parle	1959	438	*
Lyon—Camden	1935	470	*
Murray—Lake Shetek	1937	263	*
Nicollet—Fort Ridgely	1911	225	*
Pipestone—Split Rock Creek	1937	228	*
Renville—Birch Coulee	1893	82	*
Rice—Nerstrand Woods	1945	525	1
Rock—Mound Springs	1937	246	*
Steele—Kaplan Woods	1935	180	*
Stevens—Pomme de Terre	1937	364	*
Swift—Monson Lake	1936	199	*
Wabasha—James A. Carley ¹	1949	211	*
Washington—William O'Brien	1945	486	*
Winona—Whitewater	1919	688	*
John A. Latsch	1925	350	*
		8,469	7
State		105,426	100

* Less than 0.5 per cent.

¹ Undeveloped. The area of developed parks is 86 per cent of the total area, and that of undeveloped parks 14 per cent.

Note. Areas shown include water areas, which are prominent in six parks (notably Itasca) and constitute about 10 per cent of the total area.

Source: Department of Conservation, Division of State Parks (unpublished data).

From the standpoint of number, the parks are almost evenly divided between the northern and southern parts of the state, with 22 parks in 21 of the 51 southern counties, and 24 parks in the 36 northern counties. The southern parks average much smaller than the northern ones, with a maximum area of only 950 acres (Frontenac Park in Goodhue County). Nerstrand Woods, a park of 525 acres in Rice County, was originally purchased by the Forest Service and later acquired by the state through a land exchange.

In addition to the state parks, the state has 11 developed and 2 undeveloped waysides totaling about 700 acres, and 9 monuments totaling 10 acres.

PRESENT PATTERN OF LAND OWNERSHIP

WILDLIFE AREAS

Under this general heading are included game refuges, wildlife management areas, public hunting grounds, and access areas. Wildlife man-

Table 62. State-owned or Controlled Wildlife Management Areas and Public Hunting Grounds by Regions, Counties, and Areas, 1959.

REGION, COUNTY, AND AREA	ACRES	PER CENT ¹
Northeastern		
Beltrami—Red Lake	291,520	Omitted
Cass—Mud Goose	8,000	4
Lake of the Woods—Red Lake	135,360	Omitted
	434,880	4
Central		
Becker—Hubbel Pond	1,525	1
Chisago—Carlos Avery	5,381	3
Isanti—Spectacle Lake	378	*
Kanabec—Mille Lacs	5,488	3
Mille Lacs—Mille Lacs	31,367	16
Otter Tail—Orwell	1,690	1
	45,829	23
Northwestern		
Clay—Barnesville	581	*
Kittson—Twin Lakes	5,518	3
Marshall—Thief Lake	18,021	9
Roseau—Roseau River	52,775	26
Wilkin—Rothsay	2,827	1
	78,993	39
Southern		
Anoka—Carlos Avery	15,424	8
Cottonwood—Talcot Lake	2,753	1
Faribault—Walnut Lake	853	*
Goodhue—Gores-Pool ³	3,216	2
Kandiyohi—Dietrich Lange	1,045	1
Lac qui Parle, Big Stone, Swift, and Chippewa—Lac qui Parle ²	22,525	11
Olmsted—Whitewater	640	*
Wabasha—Whitewater	3,960	2
Winona—Whitewater	18,000	9
	67,900	34
State Total, excluding Red Lake	200,722	100
State Total, including Red Lake	627,602	

* Less than 0.5 per cent.

¹ Excluding Red Lake Refuge.

² Area by counties not known.

Source: Department of Conservation, Division of Game and Fish.

MINNESOTA LANDS

agement areas and public hunting grounds owned or controlled by the state are shown in Table 62. The 18 refuges are fairly well distributed throughout the state except in the northeast corner, but the Red Lake Refuge occupies 68 per cent of the total area. Because of this fact it is omitted in calculating the percentages given in the table.

In addition to the reservations shown in Table 62, the state owns a large number of wetlands which are used for wildlife management and public hunting. These vary in size from 13 to 1,801 acres. They are distributed through 55 counties, with approximately two-thirds of the total number of counties in the southern part of the state. Distribution by regions and areas is summarized in Table 63.

Acquisition of wetlands has been, and continues to be, an important part of the state's wildlife program. Table 64 shows that up to November 30, 1958, purchases had been made or options taken out on 636 tracts in 61 counties. The average size per tract was 90 acres, and purchases were

Table 63. Distribution of State-owned Wetland Areas by Regions, 1958.

REGION	NUMBER OF COUNTIES	ACRES	AREA PER CENT
Northeastern	1	40	*
Central	10	14,247	38
Northwestern	7	3,085	8
Southern	37	19,907	53
	55	37,279	100

* Less than 0.5 per cent.

Source: Department of Conservation, Division of Game and Fish.

Table 64. Acquisition of Wetlands by Regions to November 30, 1958.

REGION	PURCHASED AND OPTIONED			PURCHASED PER CENT OF AREA PURCHASED AND OPTIONED		
	NO. OF COUNTIES	NO. OF TRACTS	ACRES	NO. OF TRACTS	ACRES	PER CENT
Northeastern	3	3	1,192	1	40	3
Central	10	97	14,966	81	13,591	91
Northwestern	8	82	14,863	60	9,873	66
Southern	40	454	26,525	365	21,381	81
	61	636	57,546	507	44,885	78

Source: Department of Conservation, Division of Game and Fish (unpublished data).

PRESENT PATTERN OF LAND OWNERSHIP

keeping up pretty well with options. Projects were also proposed in four additional counties — Aitkin, Carlton, Pine, and St. Louis — in which no options had yet been taken out.

In addition to the wildlife management areas administered by the Division of Game and Fish, all state parks are game refuges. There are also many "statutory game refuges," chiefly in federal, county, and private ownership, in 69 counties, with an aggregate area of well over a million acres.

Public access to Minnesota lakes and streams is provided by some 486 access areas located in 41 counties in all parts of the state. These areas are under a variety of ownerships, including several divisions in the State Department of Conservation, State Highway Department, counties, towns, U. S. Forest Service, U. S. Army, and private owners. All, however, are open to the public as a means of providing access to adjacent lakes and streams.

CONSERVATION AREAS

The location of the conservation areas established by the acts of 1929, 1931, and 1933 and their areas in 1959 are shown in Table 65. Nearly two-thirds of the area is administered by the Division of Lands and Minerals and slightly more than a third by the Division of Forestry. Of the total area of 1,651,000 acres, the Division of Game and Fish manages the wildlife resources on 363,160 acres of game refuges and public hunting grounds in Marshall, Mahnomen, Beltrami, and Lake of the Woods counties, but most of the responsibility for their general administration rests with the Division of Lands and Minerals and the Division of Forestry.

Table 65. Conservation Areas Established by the Acts of 1929, 1931, and 1933.

COUNTY	ADMINISTERED BY		TOTAL ACRES	PER CENT
	DIVISION OF LANDS AND MINERALS ACRES	DIVISION OF FORESTRY ACRES		
Marshall	75,800	—	75,800	5
Mahnomen	3,500	—	3,500	*
Roseau	79,500	71,200	150,700	9
Beltrami	474,100	48,600	522,700	32
Koochiching	186,600	40,800	227,400	14
Lake of the Woods	185,900	234,400	420,300	25
Aitkin	69,200	181,400	250,600	15
	1,074,600	576,400	1,651,000	100

* Less than 0.5 per cent.

Source: Department of Conservation, Division of Lands and Minerals (unpublished data).

COUNTY LANDS

Table 66 provides information concerning all land and commercial forest land owned by the counties as determined by the Forest Service in 1953. There have been numerous changes in area since that time, but not of sufficient magnitude to affect materially the general picture or to alter substantially the percentage relationships. Particularly striking is the concentration of county ownership in the northeastern region. The fourteen counties in that region own 76 per cent of all land in county ownership and 88 per cent of the commercial forest land in county ownership.

Figures are not given for individual counties in the southern region because of the insignificance of county ownership in that region. Only one county (Swift) owns as much as 4 per cent of its total land area, another (Anoka) owns 3 per cent, and a third (Kandiyohi) owns 2 per cent. Of the remaining counties, 10 own 1 per cent and 38 own less than 0.5 per cent of the land area. There are only about 2,000 acres of county-owned commercial forest land in the region, all of it located in Hennepin, Ramsey, and Olmsted counties.

County boards are required by law to classify tax-forfeited lands held by the state under a trust in favor of the local taxing districts as "conservation" and "non-conservation" lands. The purpose of the classification is "to encourage and foster a mode of land utilization that will

Table 66. County Ownership of All Land and of Commercial Forest Land by Regions, 1953.

REGION AND COUNTY	ALL LAND		COMMERCIAL FOREST LAND		
	M ACRES	PER CENT OF LAND AREA	M ACRES	PER CENT OF ALL COM'C'L FOREST LAND	PER CENT OF ALL COUNTY-OWNED LAND
Northeastern					
Aitkin	311	27	275	31	88
Beltrami	189	12	167	14	88
Carlton	155	28	133	36	86
Cass	298	23	263	26	88
Clearwater	107	17	82	22	77
Cook	19	2	17	2	89
Crow Wing	176	28	136	30	77
Hubbard	156	26	135	31	87
Itasca	438	26	393	27	90
Koochiching	302	15	262	17	87
Lake	213	16	210	19	99
Lake of the Woods	4	*	*	*	*
Pine	243	27	207	39	85
St. Louis	1,014	25	918	28	90
	<u>3,625</u>	<u>20</u>	<u>3,198</u>	<u>23</u>	<u>88</u>

PRESENT PATTERN OF LAND OWNERSHIP

Table 66 (continued)

REGION AND COUNTY	ALL LAND		COMMERCIAL FOREST LAND		
	M ACRES	PER CENT OF LAND AREA	M ACRES	PER CENT OF ALL COM'C'L FOREST LAND	PER CENT OF ALL COUNTY-OWNED LAND
Central					
Becker	93	11	81	23	87
Benton	4	2	*	*	*
Chisago	2	1	1	2	50
Douglas	1	*	—	—	—
Isanti	17	6	2	3	12
Kanabec	73	22	62	37	85
Mahnomen	65	18	22	15	34
Mille Lacs	109	30	81	47	74
Morrison	129	18	76	31	59
Otter Tail	28	2	2	1	7
Sherburne	20	7	—	—	—
Todd	27	4	17	10	63
Wadena	26	8	15	11	58
	<u>594</u>	<u>9</u>	<u>359</u>	<u>19</u>	<u>60</u>
Northwestern					
Clay	28	4	—	—	—
Kittson	118	16	—	—	—
Marshall	76	6	46	20	66
Norman	21	4	—	—	—
Pennington	35	9	—	—	—
Polk	78	6	—	—	—
Red Lake	16	6	—	—	—
Roseau	103	10	14	5	14
Wilkin	11	2	—	—	—
	<u>480</u>	<u>7</u>	<u>60</u>	<u>6</u>	<u>13</u>
Southern					
State	94	*	2	*	2
	<u>4,793</u>	<u>9</u>	<u>3,619</u>	<u>20</u>	<u>76</u>

* Less than 0.5 per cent or less than 500 acres.

Source: Lake States Forest Experiment Station (unpublished data).

facilitate the economical and adequate provision of transportation, roads, water supply, drainage, sanitation, education, and recreation; to facilitate reduction of governmental expenditures; to conserve and develop the natural resources; and to foster and develop agriculture and other industries in the districts and places best suited thereto."

In organized towns the classification, and any subsequent reclassification, must be approved by the town board. It must also be approved by the Commissioner of Conservation before any lands can be offered for sale. The counties have been slow to comply with the legal requirement, and considerable areas remain unclassified until a sale is contemplated, when classification and its approval by the Commissioner of Conserva-

tion become prerequisites for the sale. Only fragmentary information is available as to the areas which have actually been classified.

Confusion sometimes arises because the law refers to tax-forfeited lands owned by the state but administered by the counties as "conservation lands" and "non-conservation lands," while in common usage the terms "conservation lands," "conservation areas," and "consolidated conservation areas" are ordinarily restricted to lands in seven counties which have been acquired by the state in connection with the redemption of drainage bonds and which are held by the state free from any trust in favor of any taxing district. Information concerning these latter lands appears earlier in the present report.

Memorial forests, the establishment of which is optional with the counties, exist in fourteen counties. They comprise 935,000 acres (Table 67), of which 54 per cent is in St. Louis County, with an additional 37 per cent in Itasca, Cass, and Becker Counties. The percentage of the commercial forest area in county ownership which has been placed in memorial forests varies from 0 to 100 per cent, with an average of 36 per cent for all counties having memorial forests. No memorial forests were reported in the northwestern and southern regions.

Table 67. Memorial Forests by Regions and Counties, 1958.

REGION AND COUNTY	M ACRES	PER CENT OF COUNTY-OWNED COM'CL FOREST LAND
Northeastern		
Beltami	18	11
Carlton	2	2
Cass	116	44
Clearwater	1	1
Crow Wing	10	7
Hubbard	42	31
Itasca	139	35
Lake	*	*
St. Louis	504	55
	832	34
Central		
Becker	88	100
Isanti	*	2
Kanabec	*	*
Mahnomen	*	2
Wadena	15	100
	103	57
State	935	36

* Less than 0.5 per cent or less than 500 acres.

Source: Replies by counties to questionnaire used in present study.

PRIVATE LANDS

The extent of private land ownership and its distribution between farmers and other private owners are shown in Table 68. The figures are based on Forest Service estimates for 1953, and subsequent changes have not materially altered the situation. Nearly three-fourths of all land in the state is in private ownership, with 88 per cent of this area in the hands of farmers. Outside of the northeastern region, where farmers hold only about half of the area in private ownership, farm ownership comprises well over 90 per cent of the total area in private ownership.

When only commercial forest lands are taken into consideration, quite a different picture appears. With these lands, for the state as a whole, private ownership drops to less than half of the total, only 62 per cent of which is in the hands of farmers. Average figures are greatly influenced by the situation in the northeastern region, which contains 58 per cent of all of the commercial forest land in the state, with only a third of the area in farm ownership. In the other three regions farm

Table 68. Private Land Ownership by Regions, 1953.

REGION	M ACRES	ALL LAND		
		PER CENT OF TOTAL AREA	FARM OWNERSHIP	OTHER PRIVATE
Northeastern	6,808	37	52	48
Central	5,512	87	93	7
Northwestern	5,551	84	97	3
Southern	19,696	98	96	4
	37,567	73	88	12
		COMMERCIAL FOREST LAND		
		PER CENT OF TOTAL AREA	FARM OWNERSHIP	OTHER PRIVATE
Northeastern	4,592	33	41	59
Central	1,376	72	89	11
Northwestern	728	74	90	10
Southern	1,244	98	91	9
	7,940	44	62	38

Source: Lake States Forest Experiment Station (unpublished data).

MINNESOTA LANDS

ownership is predominant, particularly in the southern region, where it is almost complete.

Table 69 emphasizes the predominance of small holdings of the commercial forest lands in private ownership. Owners of tracts of less than 500 acres in size comprise 99.6 per cent of the total number of private owners, with 87 per cent of the total area. More recent figures show that between 1953 and 1958 the number of owners of tracts of 5,000 or more acres in size decreased from 19 to 15, while their holdings increased from 744,000 acres to about 887,000 acres. Of the large private holdings, 97 per cent are in the northeastern region, with 75 per cent in St. Louis, Koochiching, and Lake counties.

Table 70 compares the ownership of live sawtimber and of growing stock by private and public owners. The fact that private owners have 51 per cent of the live sawtimber and only 44 per cent of the growing stock indicates that the timber on their holdings averages slightly larger than that in public ownership. The contrast is particularly marked with the state and counties, which own only 25 per cent of the live sawtimber as against 32 per cent of the growing stock.

Table 69. Commercial Forest Land in Private Ownership by Size Class of Ownership, 1953.

SIZE CLASS	OWNERS		AREA	
	NUMBER	PER CENT	M ACRES	PER CENT
Under 100 acres	123,431	88	4,168	53
100—499 acres	16,564	12	2,699	34
500—4,999 acres	548	*	329	4
5,000 acres or more	19	*	744	9
	140,562	100	7,940	100

* Less than 0.5 per cent.

Source: "Timber Resources for America's Future" (162).

Table 70. Ownership of Live Sawtimber and Growing Stock on Commercial Forest Lands by Classes of Owners, 1953.

CLASS OF OWNER	SAWTIMBER		GROWING STOCK	
	MILLION BD. FT.	PER CENT	MILLION CU. FT.	PER CENT
Private	6,448	51	3,183	44
County and State	3,079	25	2,283	32
Federal	3,011	24	1,769	24
	12,538	100	7,235	100

Source: "Minnesota's Forest Resources" (39).

PART IV

PROBLEMS AND PROSPECTS

The preceding pages have presented a broad picture of the evolution and present status of land ownership in Minnesota. What problems does this situation raise that are of concern to the local communities, the state, and the nation, and what are the prospects for their solution?

ORIGIN OF PROBLEMS

It is customary to attribute today's land ownership problems to lack of planning on the part of both governmental and private agencies. Whether this is true depends largely on one's definition of "planning."

Certainly, in the early days, there was no attempt to devote land to its best use on the basis of any scientific soil classification, to prevent premature and unrestricted exploitation of natural resources, or to develop any coordinated program for the management and utilization of public and private lands. On the other hand, in Minnesota as in the other public-land states, there was a definite intention on the part of Congress to get as much of the land as possible into private ownership as fast as it could be surveyed. This objective was achieved by sales and grants to individuals and corporations, and by a wide diversity of grants to the states, with the expectation that the states in turn would transfer the lands to private ownership.

There were several reasons for these programs. The federal government was regarded as the temporary trustee, not as the permanent owner, of the public lands. There was little confidence in the efficiency, or even in the probity, of government officials. Commissioner S. S. Burdett of the General Land Office, in his annual report for 1874, expressed the view that the sale of timber without the land, under careful supervision, would be the ideal method of disposal, but feared that this would be ruinously expensive and would afford "opportunities for fraudulent collusion and unjust exactions" on the part of corrupt public servants. He concluded that "the wisest policy the government can pursue with respect to [the pine and fir] lands is that which will most speedily divest it of title to the same for a fair consideration." Two years later Commissioner J. A. Williamson also favored the sale of the

government's timberlands on the grounds that "the timber would be more carefully husbanded in the hands of men whom it had cost a fair price than in the hands of the lawless trespasser or the bogus homesteader or preemptor."

A similar attitude prevailed with respect to the competence of state governments. In Minnesota the revelations of the Pine Land Investigating Committee in 1894 lent support to this point of view. Laws that on their face appeared adequate to protect the timber resources in state ownership had been readily circumvented with little or no interference from incompetent or venal state officials.

Legislative "planning" in the early days accordingly aimed at getting land — all land — into private ownership as the best means of promoting the "public interest." Toward the end of the last century, however, doubts began to arise as to the soundness of this policy. Depletion of forest and range land, increasing soil erosion, and more irregular stream-flow raised serious question as to the ability of the country's supposedly inexhaustible natural resources to meet the future needs of a rapidly mounting population. Was it possible, after all, that private ownership had certain disadvantages and public ownership certain advantages that had previously been overlooked?

Nationally the change from a policy of public-land disposal to one of reservation (and later acquisition) began with the establishment of the Yellowstone National Park in 1872 and of the Yellowstone Park Forest Reservation (national forest) in 1891. In Minnesota, it began in 1889 with the reservation of mineral deposits. Two years later (1891) the legislature established Itasca State Park and the next year received from Congress a grant of all remaining federal lands within the park boundaries to be used perpetually for park purposes.

Then came the establishment of the Minnesota (Chippewa) National Forest (1902 and 1908) and the Superior National Forest (1909), the reservation of state land for additional state parks and for state forests, and the acquisition by the counties of extensive areas of tax-forfeited land which have largely remained in county ownership. As a result of this evolution, public ownership of land in Minnesota decreased from 100 per cent (all federal) to about 9 per cent of the total land area by 1912, and subsequently increased to 27 per cent (fairly evenly divided among federal, state, and county governments) in the state as a whole and to 63 per cent in the fourteen northeastern counties.

BASIC CONSIDERATIONS

Before taking up the specific problems presented by each class of ownership, it may be helpful to explore some of the basic considerations that must be taken into account in seeking their solution.

PUBLIC INTEREST

There is, and always has been, general agreement that the pattern of land ownership should be that which will best promote the public interest. Disagreement comes as to the meaning of "public interest" and as to the efficacy of various possible means of achieving it. Secretary of Agriculture James Wilson in 1905 indicated his understanding of the term, so far as the national forests are concerned, by instructing the Forester to so administer them as to assure the greatest good of the greatest number in the long run. While this prescription lacks mathematical precision and requires sound judgment in its application to specific situations, it does emphasize certain considerations which have been receiving increasing attention with respect not only to the management of the national forests but of all lands irrespective of their ownership.

"Greatest good" is more and more being recognized as constituting the optimum combination of products and services that a given piece of land is capable of yielding. Prominent among these are wood, forage, wildlife, minerals, water, and recreation. The relative emphasis to be placed on each depends on the character of the land and on the changing requirements of the consumer of the products and services.

"Greatest number" recognizes the fact that land management is a matter of concern not only to the producer and the consumer but to the entire community. The well-being of county, state, and nation is affected by the way in which land resources are handled. What happens to the timber and recreational resources of Minnesota's northeastern counties is of interest not only to those counties but to the rest of the state and to the entire United States.

"The long run" implies that the present generation has responsibilities to future generations. This does not necessarily mean that the present must suffer hardships for the sake of the future, but rather that the long-time effect of any given course of action must be taken into consideration in deciding on the wisdom of its adoption. The fact that the longer the run, the more difficult it becomes to predict the character and amount of future requirements, does not relieve us of the obligation to estimate them as accurately as is possible and to provide for them as adequately as is feasible.

These concepts are not new. The legislators who passed the land laws and the land managers who followed the practices that we now condemn doubtless thought that they were promoting the public interest. Did not the conquest of a continent require the exploitation of its limitless resources, and could not this be best accomplished under the stimulus of private ownership? That a different attitude now prevails proves that times change and that the twin problems of land ownership and land management are not easy of solution. When conflicts exist between

different uses, between different communities, and between present and future, as they often do, it is not always easy to determine what course of action promises "the greatest good of the greatest number in the long run."

MULTIPLE USE

Multiple use — the management of an area for the production of various goods and services — has achieved wide acclaim as a means to that end, but it has distinct limitations. Some uses are wholly or partly incompatible. Examples are grazing of livestock and timber production in the hardwood forests of southern Minnesota, commercial logging and the preservation of wilderness conditions in the Boundary Waters Canoe Area, and drainage of potholes for crop production and provision of breeding grounds for waterfowl in the western part of the state.

The essence of multiple use is the dedication of the various parts of an administrative unit to the uses for which they are physically, economically, and socially best suited. Part of a farm in southern Minnesota may well be devoted to the production of harvested crops, another part to pasture, and still a third part to woodland; but the attempt to combine all three uses on any one part of the farm would reduce multiple use to an absurdity. Similarly, a part of the Superior National Forest may well be devoted to the production of timber for commercial utilization, another part to the preservation of primeval conditions, and still other parts to picnic and campgrounds. In this case there must be a sharp line between the timber-cutting areas and the primeval areas, but picnic and campgrounds can occupy suitable locations in both.

These illustrations point up the fact that the choice between uses depends primarily on relative values. On the farm, the land used for harvested crops could be used for the production of forage or trees so far as its physical characteristics are concerned, and presumably would, in part at least, be so used if economic conditions were to change so as to make livestock or timber more valuable than oats or potatoes. In the case of the national forest, on the basis of physical characteristics alone, the entire area could be devoted either to timber production or to wilderness. The present division between the two uses is based on the judgment of the Forest Service as to the relative value of the different parts of the forest for each use.

"Value" and "judgment" are key words in the practice of multiple use. The difficulty in applying them lies in the fact that there are many different kinds of values and wide diversities in judgment. It is particularly pronounced in the comparison of values which cannot be expressed in the same unit of measurement, such as dollars and cents. The probable net monetary returns from the production of harvested crops, livestock, lumber, or pulpwood, from the operation of a campground, or from the lease of hunting and fishing privileges can be calculated with reasonable

accuracy for any given set of conditions. The results can then safely be used by the private owner as a guide in deciding which activity, or which combination of activities, to favor. But is this true of the public owner, who may have a responsibility to provide society with values not measurable in monetary terms?

These values are conspicuous in the field of outdoor recreation. It is, of course, possible to determine the amount of money spent by recreationists to enjoy different kinds of recreation in different localities. Presumably the recreation obtained was worth at least that much to them or the expenditure would not have been made. But just what physical, mental, moral, esthetic, and spiritual changes has the experience produced, and how have these changes affected the recreationist as a human being and as a member of society? And are not the personal and social results of recreation a more valid measure of its true value than the economic results? As Robert Marshall once aptly remarked: "It is no more valid to rate [these values] in terms of dollars and cents than it would be to rate the worth of a telephone pole in terms of the inspiration it gives."

The same problem of evaluating returns that cannot fairly be expressed in monetary terms arises in connection with such institutions as public schools, public libraries, and civic orchestras. No one would contend that the appropriations made by the legislature for the support of the University of Minnesota, or the tuition fees paid by the students, are any true measure of its value to the state. Values in cases such as these become a matter of judgment — in the first instance on the part of legislators and administrators, but in the long run on the part of the entire community.

In order that judgment may be as well informed as possible, additional information is needed as to the economic impacts of recreational activities. A good start in this direction has been made by the Vacation-Travel Survey conducted by the Minnesota Arrowhead Association in 1958 under a contract with the Office of Iron Range Resources and Rehabilitation. There is also need for the inauguration, perhaps on a national scale, of comprehensive psychological and sociological studies of such activities.

Sound multiple use by both public and private agencies, especially the former, would be greatly furthered by more information than is now available as to the kinds of recreational activities preferred by different classes of users, what facilities they desire, what part of the cost of providing these facilities they are willing to bear, how they react to educational programs of various sorts, what the recreational experience means to them, and similar matters. Helpful studies along these lines were undertaken by the University of Minnesota in 1958 and by the University of Minnesota, the University of Wisconsin, and Michigan State

University in 1959. They should be expanded, since legislators and administrators alike can act more intelligently with an adequate knowledge of public opinion, whether they agree with that opinion or not.

SUSTAINED YIELD

Sustained yield — the continuous annual or periodic production of goods or services in approximately equal amounts — like multiple use, is commonly regarded as a remedy for current weaknesses in land management. The basic philosophy of continuous production constitutes the essential difference between "exploitation" and "conservation" as these terms are generally understood. It applies equally to material products such as timber and to services such as maintenance of the water supply or provision of recreational opportunities. It is the guarantee that these and other goods and services will be available "in the long run."

It is, however, well to bear in mind that natural catastrophes (e.g., insect epidemics and hurricanes) or economic factors (e.g., booms and depressions) may make annual sustained yield impracticable, that in periodic sustained yield the periods between cuttings on a single property should not be too long; and that the level at which the yield is sustained is all-important. There is little advantage in sustaining a yield of any kind at a level that approaches zero. The test of managerial skill comes in raising the level of the yield to a point that promises to meet the requirements of an exploding population with its insistent demand for an ever higher material standard of living.

INTENSITY OF MANAGEMENT

Multiple use and sustained yield go hand in hand as essential tools in advancing the public interest. By themselves, however, they offer no guarantee of a high intensity of forest management. Such management requires the use of protective and cultural techniques which will result in the optimum yield in both quantity and quality of the desired goods and services. It has so far not been generally practiced either in Minnesota or elsewhere in the United States, partly because of lack of knowledge of what actually are the best techniques, and partly because of failure to make full use of the knowledge we already have.

Steady progress toward better management is being made by all classes of owners. So far as timber production is concerned, the trend, particularly with respect to industrial owners of commercial forest land, is made evident in three comprehensive studies by the Forest Service.

FOREST SERVICE APPRAISALS. "A National Plan for American Forestry" ("Copeland Report," 1933) concluded that "practically all of the major problems of American forestry center in, or have grown out of, private ownership," and presented a decidedly bleak picture of the future of forestry on private lands (157). In view of this situation, it recommended the acquisition of 90 million acres of forest land by the states and of 134

million acres by the federal government — a program which would have increased the area then in public ownership more than three times.

Two years later a report prepared by the Forest Service for the Land Planning Committee of the National Resources Board (186) proposed a program for the net acquisition by public agencies of 170 million acres as compared with the 224 million acres in 1933. The changes in ownership of forest land suggested for Minnesota are shown in Table 71. Effectuation of the recommendations would have more than tripled the area in state and federal ownership, and would have reduced by two-thirds the area in private ownership. No county ownership was recommended, presumably because it was assumed that tax-forfeited lands would be held and managed by the state, not the counties.

"A Reappraisal of the Forest Situation in the United States" (1945-1946) classified recently cutover areas by ownership according to cutting practices (160). No figures are given separately for Minnesota, but those for the Lake States, shown in Table 72, give at least some idea of the

Table 71. Changes in Forest Ownership in Minnesota Recommended by the Forest Service, 1935.

CLASS OF OWNERSHIP	PRESENT	RECOM-	INCREASE OR DECREASE	
	M ACRES	MENDED ¹ M ACRES	M ACRES	PER CENT
State	1,982	6,414	+4,432	+224
Federal	1,508	4,864	+3,356	+222
County and Municipal	—	—	—	—
Private	12,026	4,238	-7,788	-65

¹ The combined area recommended for public and private ownership is considerably less than the estimated total forest area, presumably because it includes only the area recommended by the Forest Service for forest management.

Source: National Resources Board (186).

Table 72. Character of Cutting by Different Classes of Owners in the Lake States, 1945.

CLASS OF OWNERSHIP	PER CENT OF CUTTING RATED AS				
	HIGH	GOOD	FAIR	POOR	DESTRUCTIVE
All Ownerships	6	28	12	46	8
National Forests	43	55	2	—	—
Other Federal	45	25	23	7	—
State and Local	—	54	3	43	—
All Private	—	5	20	60	15
Farmers	—	4	17	58	21
Lumber Companies	—	4	24	70	2
Pulp Companies	—	—	29	64	7
Other Non-farm	—	6	24	61	9

Source: Forest Service (160).

situation here. Particularly striking are the excellent showing of the federal lands and the very poor showing of the private lands of all classes. None of the cutting on state and local lands was classified as either high or destructive, but 54 per cent was rated as good and 43 per cent as poor. In comparing the apparent calibres of the cutting on different ownerships, however, it should be recognized that the validity both of the methods used and of the results obtained in the study were vigorously questioned by many in industry.

"Timber Resources for America's Future" (1958) presented a new method for determining the condition of recently cut lands (162). "Unlike the 1945 survey this survey was not concerned with forest management practices. It omitted consideration of intent of ownership, existence of sustained-yield policies, management plans, or planned use of silvicultural systems. Conditions on the ground were appraised as they were found regardless of whether they resulted from accident, a bountiful nature, or purposeful action of the owner." These conditions were expressed in terms of a "productivity index," which was designed to reflect the combined effects of existing stocking, prospects for stocking where present stocking is deficient, species composition, and age of trees or stand at the time of cutting.

The productivity index scale of 0 to 100 was divided into the three broad classes of low (0 - 39), medium (40 - 69), and high (70 - 100). The condition of the land was finally expressed by showing the proportion of the total operating area that fell into each of these classes. "Thus, a statement that 65 per cent of the operating area of the country was in the high-productivity class means that 65 per cent (areawise) of the forest types on which there was recent cutting in the individual ownerships examined had a productivity rating between 70 and 100 per cent of what is considered reasonably attainable under current conditions."

Although considerable question has been raised as to the soundness of this method of determining productivity, it does throw much light on an important question. Findings for the Lake States are shown in Table 73. While the figures are not comparable with those for 1945 showing character of cutting, they do indicate that in general the condition of the cutover land in 1953 was considerably better than might have been expected under the methods of cutting found in 1945. As between ownerships, where they are comparable, Indian forests and pulp company forests make the best showing, and farm forests the poorest showing. Rather surprisingly, in view of the character of cutting found in the 1945 survey, recent cuttings in state and local forests showed a higher productivity index in 1953 than did recent cuttings in national forests. Particularly striking is the fact that 69 per cent of the area of all land in private ownership in the properties covered by the study showed a high productivity index, with pulp companies running up to 98 per cent.

Table 73. Productivity of Recently Cut Commercial Forest Lands in the Lake States by Ownership and Combined Productivity Class, 1953.

CLASS OF OWNERSHIP	PER CENT BY PRODUCTIVITY CLASS		
	HIGH	MEDIUM	LOW
All Ownerships	77	20	3
National Forests	77	22	1
Indian Forests	96	3	1
State and Local	81	19	•
All Private	69	23	8
Farmers	59	29	12
Lumber Companies ¹	—	—	•
Pulp Companies	98	2	•
Other Non-farm	66	25	9

* Less than 0.5 per cent.

¹ Sampling not large enough to provide valid estimates.

Source: "Timber Resources for America's Future" (162).

Although these figures are encouraging, it must be remembered that they apply only to recently cut lands. Even on these lands, taken as a whole, yields fall far short of what may reasonably be expected under intensive management. Ways must be found, and applied, to reduce mortality, increase growth, and improve timber quality. Minnesota has an annual loss of 2.4 per cent of the growing stock from natural causes; understocking, even in merchantable stands, is common; distribution of size classes is poor; two-thirds of the hardwood sawtimber is classed as No. 3, or lowest quality grade; 3.5 million acres of the 8 million acres capable of growing softwoods are now stocked with the less valuable hardwood types, largely aspen (39).

PLANTATIONS. In Minnesota, the need for better management is most conspicuous in the 4,483,000 acres of nonstocked forest land and the 1,671,000 acres of poorly stocked seedlings and saplings. These stands produce little or no timber and are of negligible value for recreation. They can be restored to productivity within a reasonable time only by planting, which is proceeding at an increasing but still relatively slow rate.

Forest Service estimates (1) of the area of plantable commercial forest land in the state, and (2) of the area of acceptable forest plantations as of June 30, 1952, are shown in Table 74. The fact that the area of plantable land is estimated at only 55 per cent of the area of nonstocked land and at only 40 per cent of the combined area of nonstocked and poorly stocked land presumably means that these two classes of land contain large areas of lowland brush where the Forest Service does not regard planting as "desirable and practical." As of 1952, the area of acceptable plantations constituted less than a tenth of the plantable area,

but it must be remembered that a plantation is not rated as "acceptable" until it has survived for at least five years with a stocking of at least 400 trees per acre. The area of acceptable plantations on land in federal ownership (Fig. 39) runs so high because planting on any considerable scale was undertaken earlier and for a number of years was pushed more aggressively on national forests than on other ownerships.

The amount of planting stock distributed from state nurseries from 1949 to 1959 is shown in Table 75. During this period the annual distribution increased by 618 per cent — a figure which would be more

Table 74. Area of Plantable Commercial Forest Land and of Acceptable Forest Plantations in Minnesota by Classes of Ownership, 1952.

CLASS OF OWNERSHIP	PLANTABLE AREA ¹		ACCEPTABLE PLANTATIONS ²	
	PER CENT OF		PER CENT OF	
	ACRES	TOTAL AREA	ACRES PLANTABLE	AREA
Federal	211,710	7	100,100	50
State	233,400	7	33,400	14
County and Municipal	403,900	11	3,900	1
Private	1,612,000	21	62,000	4
	2,461,000	14	200,000	6

¹ Plantable area includes nonstocked or poorly stocked forest land (a) on which the establishment or interplanting of forest cover is desirable and practical, and (b) on which regeneration will not occur naturally to a desirable density within a reasonable time. The figures given here include all plantable area prior to any planting; they thus include the area of acceptable plantations.

² Acceptable plantations must have at least 400 planted trees per plantation acre at the end of the fifth year after planting.

Source: "Timber Resources for America's Future" (162).

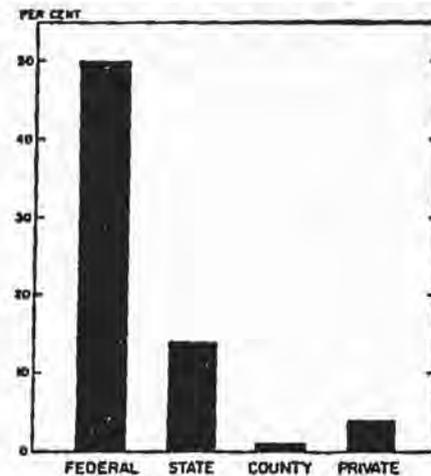


Figure 39. Per cent of plantable area covered by acceptable plantations, by classes of ownership, 1952.

remarkable if it did not start from so low a base. In terms of area planted (at 1,000 trees per acre), the change has been from 2,935 acres in 1949 to 21,088 acres in 1959. This increase of 18,153 acres is still striking but nevertheless inadequate in view of the area needing planting. Distribution of the planting stock between public and private lands has fluctuated somewhat from year to year but for the period as a whole has been approximately equal.

Table 75. Distribution of Planting Stock from State Nurseries, 1949-1959.

YEAR	PUBLIC LANDS	PRIVATE LANDS	TOTAL
	NUMBER OF TREES		
1949	1,685,369	1,250,000	2,935,369
1950	1,049,411	2,432,202	3,481,613
1951	1,772,140	1,830,319	3,602,459
1952	4,513,398	2,682,572	7,195,970
1953	6,887,153	3,883,301	10,770,454
1954	6,938,000	4,782,234	11,720,234
1955	7,091,304	6,292,030	13,383,334
1956	6,408,000	7,777,000	14,185,000
1957	6,476,000	8,432,295	14,908,295
1958	8,918,525	10,293,005	19,311,530
1959	10,288,462	10,799,350	21,087,812

Source: Department of Conservation, Division of Forestry (unpublished data).

Table 76 shows the area planted annually by different classes of owners during the ten fiscal years from 1949 to 1958. The total area planted by each agency through 1958, including plantings prior to 1949, is given in Table 77. The area planted is, of course, much larger than the area of acceptable plantations, figures for which are not available since 1952.

The area planted each year by different classes of owners has fluctuated considerably, but the combined cumulative trend for all owners has been rather steadily upward. Both federal owners and industrial private owners planted a smaller area in 1958 than in 1949, but large increases were recorded by all other classes of owners. Increases in area planted were particularly striking for the state and "other private" owners, while the counties led in percentage increase. The latter raised the total area planted from 2,700 acres in 1949 to 18,174 acres in 1958 — an increase of only 15,474 acres (1,547 acres per year), but of 573 per cent. No explanation is available of the fact that estimates of county planting by the Forest Service are considerably higher than those submitted by the counties themselves in reply to the questionnaire used in this study.

Of the total area of 391,157 acres of plantations in the state in 1958, 54 per cent was planted during the preceding ten years. While there has thus been a stepping up in the rate of planting, the total accomplish-

ment is not impressive. Up to that date the entire area of plantations (not all of them "acceptable") comprised only 6.4 per cent of the non-stocked and poorly stocked area (6,154,000 acres), and only 15.9 per cent of the Forest Service estimate of "plantable" area (2,461,000 acres). At the maximum rate of planting so far achieved (23,752 acres in 1958), it would take about 90 years to complete the job of restoring to productivity even the smaller of these areas. In addition, some planting will undoubtedly be needed following cutting operations on areas where satisfactory natural reproduction does not take place.

Table 76. Forest Planting by Years and Ownerships, Exclusive of Shelterbelts, 1949-1958.

YEAR	FEDERAL	STATE	COUNTY	ACRES		TOTAL
				FOREST INDUSTRY	OTHER PRIVATE	
1949	4,564	845	288	1,264	538	7,499
1950	2,393	733	317	1,032	1,400	5,875
1951	2,449	1,370	403	720	1,377	6,319
1952	2,115	2,883	1,631	713	5,038	12,380
1953	2,859	5,059	1,828	937	6,046	16,729
1954	3,579	5,160	1,778	537	5,445	16,499
1955	4,378	5,020	2,071	870	5,422 ¹	17,761
1956	3,172	4,111	2,297	525	7,252	17,357
1957	3,555	4,075	2,401	1,180	7,252	18,463
1958	4,440	6,171	2,748	522	9,671	23,752
	33,504	35,427	15,762	8,300	49,641	142,634
Average	3,350	3,543	1,576	830	4,964	14,263

¹ The apparent decrease in area planted by "Other Private" owners in 1955 is due to the fact that shelterbelt plantings had previously been included in this category. No deduction on this account is made in the cumulative total for the period.

Source: Lake States Forest Experiment Station, Tree Planters Notes.

Table 77. Total Area (Excluding Shelterbelts) Planted by Different Classes of Owners through June 30, 1958.

CLASS OF OWNERSHIP	AREA PLANTED	
	ACRES	PER CENT
Federal	155,660	40
State	76,752	19
County	18,174	5
Forest Industry	11,836	3
Other Private	128,735	33
	391,157	100

Source: Lake States Forest Experiment Station, Tree Planters Notes.

POTENTIALITIES. Minnesota's forest lands have a potential capacity to make a much larger contribution to the economy of the state than they are now doing. Not only is the current cut of timber less than the allowable cut, but the allowable cut is itself much less than would be permissible with more intensive management. The Forest Service states that "conservative projections indicate the possibility of increasing the cut by more than 50 percent before the end of the century." Any such increase will, however, be realized only with improved protection and better silvicultural practices, among which planting ranks high. As a means of providing adequate stock both for its own operations and those of others, the state should greatly expand its nursery capacity and improve the quality of the product.

That there will be a market for the increased supplies resulting from better management seems certain. Since 1934 the trend in cutting has been gradually upward, with the strong probability that the upward trend will be accelerated by the anticipated increase in the demand for wood which will result from an expanding population and improved techniques of processing. The fact that actual cut is at present less than allowable cut is due in considerable part to the poor composition, inferior quality, and relative inaccessibility of much of the existing forest. Gradual removal of these handicaps by better management, accompanied by improved markets, will be a stimulus to industrial development, particularly in the northeastern region.

Whether more intensive management by private owners will be discouraged by recent increases in the long-term rates of interest is a question that cannot be ignored. Should these increases prove to be permanent, they would add materially to the "time cost" of capital investments from which no return will be received for many years, such as planting. On the other hand, it is doubtful whether the intensity of forest management practiced by most private owners is influenced as much by the rate of interest as by other factors. In the case of large industrial corporations, for example, with which the cost of forestry constitutes a small part of the total expenditure, the desirability of obtaining as large a part of their wood requirements as practicable from their own lands and of providing a hedge against temporary shortages of wood from other sources (and consequently increased prices) are apt to be the determining factor. Should the new situation actually prove to have an adverse effect on private forestry, this result would emphasize the need for more intensive practices by public owners, who control 56 per cent of the commercial forest area in the state and 67 per cent in the northeastern region.

SIGNIFICANCE OF LAND OWNERSHIP

The agent by whom the tools of forest management are wielded is

the owner of the land. It is therefore important that ownership be vested in those who will wield them most effectively in the public interest.

As has already been noted, all land in this country was originally public property, controlled by the governments of England, France, Spain, and the United States. Title to about three-fourths of the total area was gradually transferred to private owners, often through the states as intermediaries. Resulting exploitation of forest lands led both federal and state governments to reverse their previous policy of disposing of these lands in favor of a policy of their almost complete reservation and even of limited acquisition. More recently — within the last fifteen years or so — improved management by many of the larger private owners has raised the question as to whether it is not time for the pendulum to swing the other way, for private ownership to increase to at least a limited extent at the expense of public ownership.

The possibility will be discussed later with specific reference to Minnesota. The major advantages claimed for public ownership, here as elsewhere, are as follows:

1. Governments are in a stronger position to apply the principle of multiple use because they are not under the necessity of showing a financial profit. Adequate consideration can therefore be given to values which are substantial but which cannot be expressed in dollars and cents. What private owners could afford to hold millions of acres in wilderness areas?
2. They can look further ahead than private owners. The first duty of a state is to assure its own prosperous perpetuity. Future values can consequently be discounted to present values at a relatively low rate. This situation favors stability of planning and management over long periods.
3. They can take into consideration the needs of a larger population — county, state, or national — than can most private owners. The federal government has national forests in Minnesota because timber supplies and recreational opportunities are matters of national concern. Some people regard the Boundary Waters Canoe Area as a regional liability but a national asset.
4. By and large, although with notable exceptions, administration of public lands, and particularly of federal lands, has been more efficient than that of forest and related lands in private ownership. More professional help per unit area has been employed, expenditures per acre have been greater, and more intensive methods of management have been used.
5. Public ownership gives greater assurance that small timber producers will have continuous access to supplies of stumpage which will enable them to remain independent enterprises.

On the other hand, it is claimed that:

1. Public owners lack the initiative and flexibility of private owners. They tend to be slaves to routine.
2. "Bureaucracy" inevitably becomes enmeshed in red tape and paper work, with consequent increase in cost and decrease in efficiency of management.
3. Extensive public ownership creates problems for local communities by taking lands off the tax rolls and by increasing the difficulty of inducing industries to make large investments in processing plants without the same assurance that timber will be available which they would have if they themselves owned a substantial share of the land.
4. Multiple use is gradually becoming standard practice with the more progressive private owners, who are finding that it pays dividends from the private as well as the public point of view. The larger private owners are rapidly catching up with, and in some instances are surpassing, public agencies in intensity of management. Small woodlands, for the most part connected with farms, constitute another problem, to which public ownership does not seem to be the answer.
5. While public agencies may have greater financial resources than many private owners, there is no assurance of their willingness to use them for intensive forest management.

INTERMINGLED OWNERSHIPS

Minnesota resembles the other public-land states with large areas of forest land in having a substantial representation of federal, state, and private land ownership, particularly in the fourteen northeastern counties. It is unique in the large proportion of land in this region in county ownership, and is decidedly unusual in the small proportion in industrial ownership.

Federal holdings, which once comprised the entire state, are now limited chiefly to national forests and Indian reservations (owned by the Indians but administered by the United States as trustee). The national forests were formed from what remained of the original public domain by the early 1890's plus a somewhat larger area subsequently acquired by purchase. Although they are consolidated in two blocks (except for the Virginia District of the Superior National Forest), only 55 per cent is in federal ownership. The remaining 45 per cent consists of state, county, and private lands scattered through the forests in random fashion.

Indian reservations, which were mostly established prior to 1870 before extensive alienations of federal lands had occurred, were originally in fairly solid blocks. Their status was materially changed by extensive cessions to the government under the General Allotment Act of 1887 and subsequent restoration of parts of these cessions to the reservations

under the Indian Reorganization Act of 1934. Today, except in the main body of the Red Lake Reservation, Indian and other lands are commonly intermixed.

State lands consist largely of the scattered remnants of the federal grants still owned by the state when constitutional provision was made in 1914 for the establishment and management of state forests. Later additions of "conservation areas" and "50-50 lands" obtained from the counties, together with state parks, game refuges, and public hunting grounds acquired largely by purchase, are similarly intermixed with other ownerships.

Most of the county lands have been acquired since the middle 1930's by the wholly fortuitous process of tax forfeiture. Solid blocks of any considerable size are rare except in a few of the northeastern counties where tax forfeiture has been particularly extensive. The same process that built up county ownership correspondingly reduced and scattered the holdings of private owners, both industrial and other.

ADJUSTMENT OF OWNERSHIPS

The pattern of ownership which has resulted from these developments is far from satisfactory. Administration and management of scattered forties, quarter sections, and even whole sections is obviously more expensive and less efficient than the management of larger and more solid blocks, although these do not need to run into the thousands of acres. The need for improvement is almost universally recognized, with varying degrees of concern, and there is general agreement that something ought to be done about it. Chief progress to date has been with respect to the national forests, to which 1,577,000 acres have been added by purchase and a net area of 114,200 acres by exchange. These transactions have been mostly with private owners, whose holdings have thereby been reduced but somewhat better consolidated. Purchases have also added to the holdings of industrial owners. Little has been accomplished in consolidating state and county ownerships.

In addition to the blocking up of present holdings, which might result in little change in the distribution of ownership among the different classes of owners, consideration needs to be given to the desirability of contracting or expanding the present size of federal, state, county, industrial, and other private ownerships. Advocates of change in every conceivable direction exist. Some think that public ownership has already gone far enough, perhaps too far. Others see virtue in the expansion of public ownership at various levels of government. The differences in point of view are due largely to the diversity of emphasis placed on different objectives and to ignorance of the efficiency of various classes of owners in attaining those objectives.

That the present unplanned and illogical pattern of ownership could

be materially improved, to the distinct advantage of all concerned, is evident. Just what specific consolidations and adjustments of ownership would be advantageous, and how they can best be effected, is less clear. Decision as to the character, location, and extent of desirable changes must be based on their potential contributions to the well-being of industry, local communities, state, and nation. For example, will the proposed adjustments help to assure:

Reduced cost and increased efficiency of administration?

Sustained-yield management of desirable species at a high level of production?

Expenditure of the capital funds needed for planting and other measures to increase forest production on unstocked and partially stocked areas?

Avoidance of tax delinquency and tax forfeiture?

Availability of adequate recreational areas for public use?

The entire situation points to the need for a thorough study of the many complex problems involved which was beyond the scope of the present investigation. An impartial and critical analysis of the efficiency with which different classes of owners are managing the lands under their jurisdiction would provide information which is now lacking but which is clearly needed. It should determine not only strengths and weaknesses, from the standpoint both of the owner and of the general public, but the reasons therefor. To what extent are the results of management influenced by objectives, legislation, financial resources, administrative organization and operation, and caliber of personnel? What changes in these items are likely and how will they affect future management?

Such an analysis would not be easy to make, partly because of the many factors that must be taken into consideration, but still more because of the lack of a common denominator for measuring achievements in different fields. Net returns from the production and harvesting of timber in terms of dollars and cents can perhaps be made with reasonable accuracy, irrespective of ownership, but how are recreational returns to be measured, and what criterion is to be used in comparing the contributions made by different classes of public and private owners? Nevertheless these questions cannot be ignored merely because they are difficult, and the attempt to answer them will help to clarify objectives and to throw light on current successes and failures in attaining them.

Studies along these lines will afford a needed basis for comparing the relative efficiency of different classes of owners as land managers, and thus serve as a guide in determining public policy with respect to land ownership. Perhaps an even more useful service will be to identify strong and weak points in current land management activities, and thus pave

the way for changes that will result in greater efficiency by present owners.

Several alternatives exist for initiating such studies. They might be supported by a foundation; they might be financed by Congress or the state legislature; or they might be sponsored by separate classes of owners or individual owners, such as the Forest Service, the State Department of Conservation, or a pulp and paper company. In any event, they should be handled by an independent agency such as a research institution or a firm of managerial consultants, and the broader the coverage the better.

Pending such a study, much can be accomplished through a cooperative exploration of the situation by present owners, with a view to obtaining concerted action for its improvement. Every owner has his individual ideas as to what should be done from his limited point of view, but there has been no organized effort to compare and to harmonize these ideas, or to obtain concerted action. There is need for consultation between all classes of owners with the objective of preparing both general and specific plans for attacking the problem, and of actually effecting such adjustments as appear to be clearly desirable.

OWNERSHIP CONFERENCES

A constructive move would be for the State Commissioner of Conservation to call and to preside over a conference of all interested parties for the purpose of taking the first steps in this direction. Such a conference would inevitably cover a wide range of subjects. Consolidation of ownerships cannot be considered intelligently without simultaneous consideration of the boundaries within which consolidations should take place. The total area as well as the exact location of land which should be in different ownerships is involved. So, too, are ways and means of bringing about desirable changes. To what extent can, and should, such changes be effected by exchange, sale, and purchase; and what changes in existing laws and procedures are needed to facilitate these processes? A number of specific problems that require attention are considered later in this report. A definite agenda, prepared and circulated well in advance of the conference, will help to focus discussion and will contribute materially to the success of the meeting.

No single conference such as that suggested will come up with all, or perhaps even with many, of the answers. It will, however, get the cards on the table, focus attention on the major problems, indicate the chief areas of agreement and disagreement, and pave the way for further progress. How best to proceed from then on can be settled by the conference itself. That continuing consultation will be needed is certain. Plans and programs will require periodic review as conditions change and as new information becomes available.

Group reactions and recommendations will have no binding effect on the participating agencies. Each will retain its present power to make its own decisions. But these decisions can be made more intelligently in the light of full knowledge of the plans and views of other agencies and will certainly be influenced by them. The results are far more likely to be mutually acceptable, and more satisfactory from the standpoint of the general public, than would be the case in the absence of effective communication.

The initial state conference may well be followed by several local conferences, which will assure consideration of land ownership and related problems at the grass-roots level.

FEDERAL LAND PROBLEMS

PUBLIC DOMAIN

The unreserved public domain now consists of only 82,139 acres, 96 per cent of which is in Koochiching, Lake of the Woods, Beltrami, and Roseau counties (Fig. 35). Of this area, some 58,317 acres are included in withdrawals for various purposes, in "Volstead lands," in indemnity school selections, and in pending exchanges. Of the remaining 23,822 acres, some 12,856 acres in Koochiching County are in blocks of more than 1,520 acres — the maximum area that can be sold under existing legislation.

The basic policy of the Department of the Interior is to sell the remaining 10,966 acres which are unencumbered and otherwise available for sale. The main problem is to find buyers. For example, of 17 tracts containing 1,208 acres which were offered for sale at Bemidji on October 9, 1958, only 10 tracts containing 1,010 acres were sold. The sale price averaged \$8.55 per acre, which was less than 4 per cent above the appraised value. The Department is seeking ways in which to increase interest in future sales.

The wisdom of the limitation of 1,520 acres on the sale of "isolated tracts" is decidedly questionable. The prospective value to the government of the few scattered areas in Minnesota which fall in this category is so small that removal of the limitation by Congress would seem to be in the public interest so far as this state is concerned. There is at least some hope that their ownership by holders of other lands with which their management could be coordinated would prove advantageous.

NATIONAL FORESTS

BOUNDARIES. The general location of Minnesota's two national forests appears to be settled. No sentiment of consequence exists either for their abolition or for the establishment of additional national forests. It is, however, an open question whether their present boundaries are the most desirable. These boundaries have been subject to more or less

frequent changes in the past, with consequent expansions and contractions of the gross area both of the national forests proper and of the closely related purchase units. A conspicuous example is the creation of the Kabetogama and Pigeon River purchase units in 1936 and the decision of the National Forest Reservation Commission in 1956 to cease purchase in nearly all of the area included within them. There is no reason to believe that further changes may not be in order.

Because of the prevalence of intermingled ownerships, the subject is eminently one that calls for joint consideration by all interested agencies. The aim should be to establish boundaries which will facilitate the consolidation of holdings in the same ownership. This means that national-forest boundaries might well be adjusted to eliminate areas where another ownership is predominant (state forests, for example), and by the same token that state forests might be eliminated from areas predominantly in federal ownership. The present situation, where several state forests exist within the exterior boundaries of each of the national forests, is the natural result of the ownership pattern, but it is illogical and should not be regarded as permanent. Complete solidity of any single class of ownership within any area of considerable size is probably impracticable, but consolidations that will greatly improve the present situation should certainly be feasible.

In addition to a general review of the situation, two areas in the Superior National Forest deserve special attention. These are the Boundary Waters Canoe Area and the Virginia Ranger District (formerly the Mesaba Unit). In the former, a review of the boundaries of the roadless and no-cut areas is in order to determine whether they assure the most effective application of the principle of multiple use. Do they provide for the best allocation of resources between recreational use and the commercial utilization of timber; and is the particular kind of recreational use involved the most desirable economically and socially?

Pertinent to this problem is the moot question whether the Boundary Waters Canoe Area, which differs in some important respects from typical western wilderness areas, should be included in proposed legislation on the subject. Whatever the decision on this point, the continuation of substantial appropriations for the acquisition of private lands within the area is essential if its basic purposes are to be achieved.

The Virginia Ranger District is isolated from the rest of the forest; only 50 per cent is in federal ownership as compared with 69 per cent in the rest of the forest; and the prospect of increasing exploitation for minerals may make further effective consolidation difficult. The original area was approved by the National Forest Reservation Commission in 1930 as part of the Superior Purchase Unit. It was enlarged by two-thirds in 1934, and a relatively small reduction was made in 1937. These changes are shown in Figure 40, and the present pattern of ownership

is shown in Figure 41. Nearly 99 per cent of the present federal ownership consists of acquired land.

Three possible courses of action are open with respect to the future of the Virginia Ranger District. The present boundaries can be retained, with a view to effecting such expansion and consolidation of federal holdings as may prove feasible; the present boundaries can be contracted, with a view to effecting greater consolidation within a smaller gross area; or the unit can eventually be abolished by using the federal lands as trading stock for the consolidation of national-forest holdings elsewhere through the exchange process. An important point to bear in mind is that much of the land within the district ranks relatively high from the standpoint of timber production and that it is assured of effective management under federal ownership. Careful exploration of the probable future of the area under other management is essential to reach a sound decision as to what course of action will best serve the public interest.

PURCHASE AND EXCHANGE. Two methods exist for the expansion and consolidation of national forests—purchase and exchange. Of the two methods, purchases have so far included much the larger area. As of June 30, 1958, they totaled 1,576,887 acres and comprised 66 per cent of

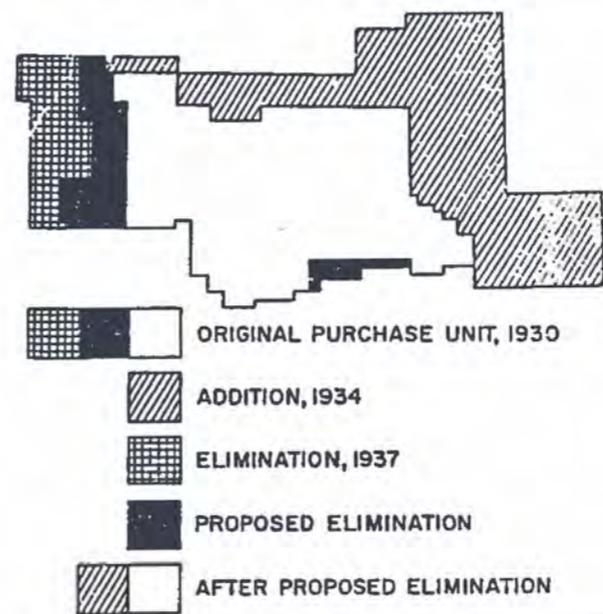


Figure 40. Changes in boundaries of Virginia Ranger District (Mesaba Unit), Superior National Forest.

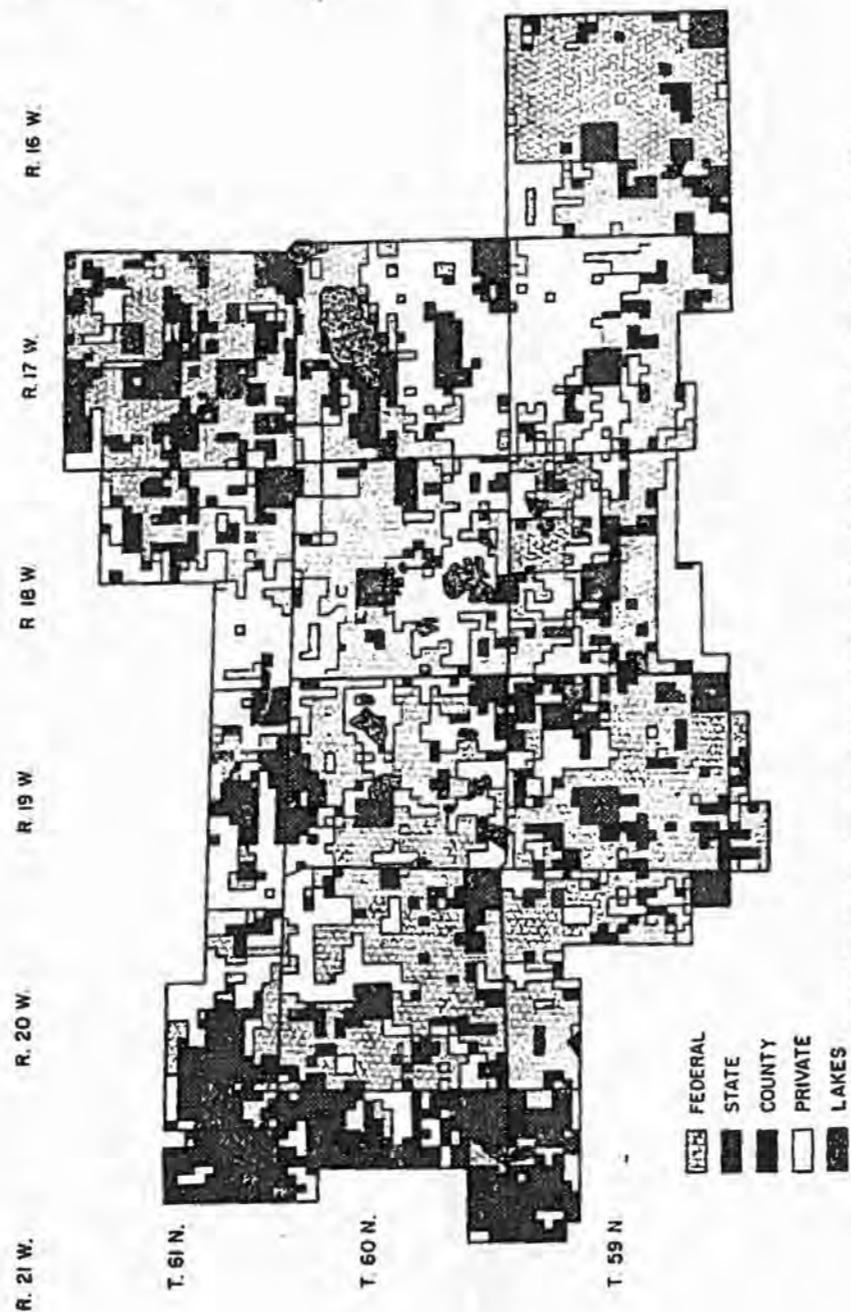


Figure 41. Ownership in the Virginia Ranger District (Mesaba Unit), Superior National Forest, 1959.

the net area in the Chippewa National Forest, 51 per cent in the Superior National Forest, and 87 per cent in the Superior Purchase Unit. They have, however, slowed down greatly in recent years and have now come almost to a standstill except in the Boundary Waters Canoe Area.

Whether purchases should be resumed elsewhere, and on what scale, depends on the practicability of effecting desirable consolidation of federal holdings within existing or revised boundaries through the exchange process. That process is chiefly of value as a means of consolidation and cannot be expected to increase materially the 49 per cent of the gross area now in federal ownership in the Chippewa National Forest and the 67 per cent in the Superior National Forest. Obviously the future of federal acquisition in the state is intimately connected with the problems of boundary adjustment and consolidation of holdings previously discussed.

If further acquisition on any considerable scale is regarded as desirable, consideration should be given to the advisability of federal legislation authorizing the purchase for exchange purposes of lands outside the boundaries of national forests and established purchase units. This procedure was used in the purchase of Nerstrand Woods and its subsequent transfer to the state in exchange for certain state lands in the Superior National Forest. It combines purchase and exchange in a manner that is sometimes advantageous to all of the parties concerned, provided it proceeds in accordance with a master plan approved by both agencies.

Exchanges affecting national forests in Minnesota are summarized in Table 78. They have been mainly with private owners and have had more influence on the consolidation than on the expansion of federal holdings.

The large excess of area acquired over area relinquished is due to the former common practice of exchanging government timber for private land ("stumpage for stumps"), which was discontinued in 1953. Its

Table 78. Summary of Exchanges Affecting National Forests in Minnesota to June 30, 1958.

NATIONAL FOREST	AREA ACQUIRED ACRES	AREA RELINQUISHED ACRES	NET AREA ACQUIRED ACRES	PER CENT ¹
Chippewa	20,284	2,238	18,046	1.4
Superior	115,669	19,705	95,964	3.3
	135,953	21,943	114,010	2.7

¹ Per cent of total net area.

Source: Forest Service, Washington Office (unpublished data).

MINNESOTA LANDS

advantages and disadvantages from the standpoint of both parties to the transaction should be reconsidered, with a view to determining whether the present rather rigid policy needs modification.

CONTRIBUTIONS TO LOCAL COMMUNITIES. Minnesota shares with other states having national forest lands the problem of what contribution the federal government should make to local communities in lieu of taxes. It is unique in that its cash contribution takes two forms—(1) the usual 25 per cent of gross income in the Chippewa National Forest and in the Superior National Forest south of a line established by Public Law 733 (1948) as amended by Public Law 607 (1956), and (2) 0.75 per cent of the appraised value of the land north of that line. The ad valorem contribution was substituted for the gross income contribution in 1948 because of the dedication of much of the area involved to recreational uses from which the government derives no revenue.

Annual payments to the counties from these two sources during the ten years ending June 30, 1958, are shown in Table 79 and Figures 42 and 43. Payments in cents per acre of national forest land are shown in Figure 44.

The very large increase in the payments from gross receipts is due to the great expansion of the timber-sale business, which currently ac-

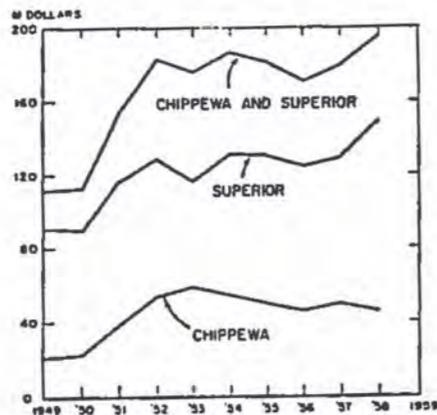


Figure 42. Contributions to counties from Chippewa National Forest and Superior National Forest, 1949-1958.

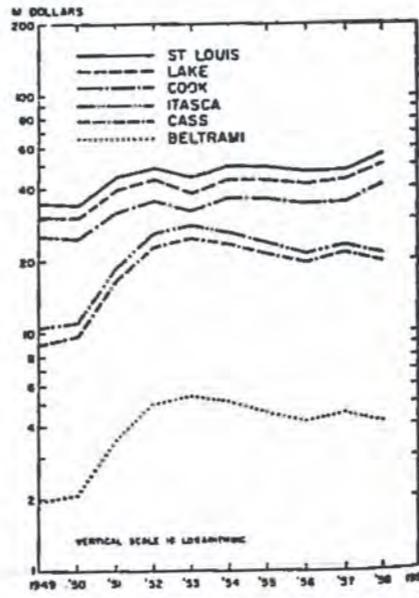


Figure 43. Contributions to counties from national forests, by counties, 1949-1958.

PROBLEMS AND PROSPECTS

counts for about 95 per cent of all receipts. Gross receipts from 1949 to 1958, together with receipts per acre of national forest land, are shown in Table 80 and Figure 45.¹ K-V funds (discussed later) are included in order to show total receipts, of which they constitute about 20 per cent, although they do not enter into the base on which contributions to counties are calculated. In dollars the increase in receipts has been greater on the Superior National Forest, but the percentage increase has been greater on the Chippewa National Forest. For both forests, the increase during the ten-year period has been 122 per cent.

The ad valorem payments decreased relatively from 48 per cent of total payments on the Superior National Forest in 1949 to 31 per cent in

Table 79. Contributions to Local Communities from National Forests, 1949 to 1958.

COUNTY	1949	1950	1951	1952	1953	1954
Beltrami	\$ 1,948	2,064	3,558	4,958	5,420	5,035
Cass	8,990	9,591	16,545	23,028	25,175	23,566
Itasca	10,300	10,903	18,796	26,157	28,578	26,214
Chippewa N. F.	\$21,238	\$22,558	\$38,899	\$54,143	\$59,173	\$54,915
Cook	25,196	24,914	32,390	36,008	32,887	37,100
Koochiching	54	53	81	95	74	89
Lake	30,450	30,618	39,376	43,467	38,929	44,219
St. Louis	34,868	34,561	44,701	49,466	44,948	50,842
Superior N. F.	\$90,568	\$90,146	\$116,548	\$129,036	\$116,838	\$132,250
State Total	\$111,806	\$112,704	\$155,447	\$193,179	\$176,011	\$187,065

COUNTY	1955	1956	1957	1958	TOTAL	AVERAGE
Beltrami	\$ 4,629	4,197	4,615	4,263	40,687	4,069
Cass	21,731	19,885	22,032	20,247	190,790	19,079
Itasca	23,866	21,614	23,453	21,430	211,311	21,131
Chippewa N. F.	\$50,226	\$45,696	\$50,100	\$45,940	\$442,788	\$44,279
Cook	36,858	35,159	35,899	41,606	338,016	33,802
Koochiching	88	82	84	146	845	84
Lake	43,910	42,181	44,390	51,086	408,627	40,863
St. Louis	50,255	47,949	48,800	57,462	463,853	46,385
Superior N. F.	\$131,111	\$125,371	\$129,173	\$150,300	\$1,211,341	\$121,134
State Total	\$181,337	\$171,067	\$179,273	\$196,240	\$1,654,129	\$165,413

Source: Forest Service, Washington Office (unpublished data).

¹ Gross receipts from timber sales, exclusive of K-V funds, and from leases of land and power are shown in Appendix I, Table 4.

MINNESOTA LANDS

Table 80. Gross Receipts by National Forests, Including K-V Funds, 1949-1958.

YEAR	CHIPPEWA	SUPERIOR	STATE	CHIPPEWA	SUPERIOR ¹	STATE ¹
	TOTAL			AVERAGE PER ACRE		
1949	\$ 94,413	\$258,238	\$352,651	\$.16	\$.17	\$.17
1950	113,722	249,941	363,663	.19	.16	.17
1951	181,622	378,407	560,029	.31	.24	.26
1952	240,560	444,009	684,569	.41	.28	.32
1953	290,423	369,489	659,912	.49	.23	.30
1954	270,884	443,535	714,419	.45	.28	.32
1955	251,262	456,882	708,144	.42	.28	.32
1956	233,019	422,639	655,658	.38	.26	.29
1957	255,326	423,627	678,953	.40	.26	.30
1958	233,483	549,577	783,060	.35	.34	.34
	\$2,164,714	\$3,996,344	\$6,161,058	\$.36	\$.25	\$.28

¹ Excluding area affected by Public Law 733 and Public Law 607.
Source: Forest Service, Washington Office (unpublished data).

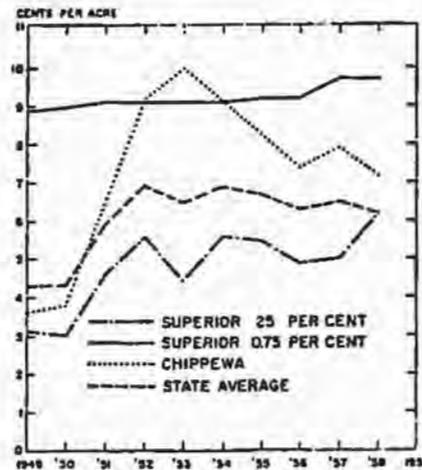


Figure 44. Contributions to counties per acre of national forest land, 1949-1958.

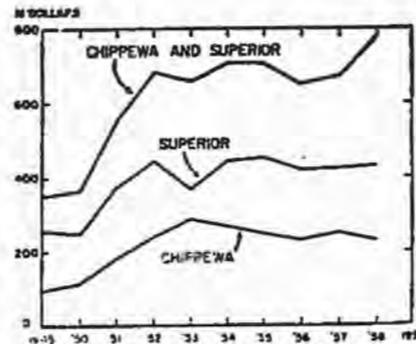


Figure 45. Gross receipts (including K-V funds) from Chippewa and Superior National Forests, 1949 to 1958.

1958. They will be greater in the future because of reappraisal by the Secretary of Agriculture in 1959, the results of which are shown in Table 81. The large increase in appraised value between 1948 and 1959 is due chiefly to appreciation in land values, but also in part to the expansion by Public Law 607 of the area with respect to which contributions to the counties are made on an ad valorem basis. As a result

Table 81. Appraised Value of Land in the Superior National Forest Affected by Public Laws 733 (1948) and 607 (1956), in 1948 and 1959.

COUNTY	APPRAISED VALUE		1959 INCREASE PER CENT
	1948	1959	
Cook	\$1,602,022	\$4,861,431	203
Lake	1,977,922	7,341,212	271
St. Louis	2,182,653	3,971,867	82
	\$5,762,597	\$16,174,510	181

Source: Superior National Forest (unpublished data).

of the reappraisal, ad valorem payments to the counties for the fiscal year 1959 amounted to \$121,309 — an increase of 152 per cent over the previous year.

The government also voluntarily assumes the cost of fire control on national-forest lands (and of necessity on intermingled lands), and of a large amount of road and trail construction—activities which are financed wholly or in large part by the state or local communities for all other classes of ownership. These expenditures are commonly referred to as contributions in kind as distinguished from contributions in cash. That these expenditures are substantial is clearly demonstrated by Tables 82 and 83 and by Figure 46.

Expenditures for the construction and maintenance of roads and trails are particularly striking. The 10 per cent fund consists of 10 per cent of the gross receipts from national forests (exclusive of K-V funds), and is available without specific appropriation by Congress under legislation passed in 1912 and 1913. The item for roads and trails consists of appropriations made by Congress to aid in the protection and administration of national forests. Expenditures in these two classes might be made in part by private owners as a means of developing their properties beyond the road construction which the state and counties could be expected to handle. This is not true of forest highways, funds for the construction of which are also appropriated by Congress and which are intended to develop the general highway system of the state. They are in addition to the grants-in-aid made to all states to assist in road construction.

Expenditures for fire control, which is accepted as a state responsibility everywhere except on national forests and Indian forests, are at a considerably lower level than those for road construction and maintenance. They are of much more nearly the same magnitude as cash contributions. Particularly noteworthy are the relatively small expenditures for fire suppression.

Whether federal contributions are equitable depends largely on how

they compare with the taxes that would be paid if the lands were in private ownership. This subject was investigated by the Forest Service for the entire United States in 1952. Three counties were covered in Minnesota—Itasca, Cook, and St. Louis—representing 63 per cent of the total net area of national forests in the state.

Probable taxes if the land were in private ownership were estimated in consultation with local assessors and with due consideration of the taxes actually paid on lands as similar as possible to those in national

Table 82. Federal Expenditures for Fire Control in National Forests, 1949-1958.

YEAR	PREVENTION AND PRESUPPRESSION	SUPPRESSION	TOTAL
1949	\$161,778	\$82,352	\$244,130
1950	126,926	11,991	138,917
1951	128,813	12,582	141,395
1952	139,371	45,864	185,235
1953	126,918	20,289	147,207
1954	134,969	6,709	141,678
1955	123,217	14,133	137,350
1956	158,608	26,374	184,982
1957	186,107	25,540	211,647
1958	218,813	25,946	244,761
	\$1,505,520	\$271,782	\$1,777,302

Source: Forest Service, Milwaukee Office (unpublished data).

Table 83. Expenditures for Road and Trail Construction and Maintenance in National Forests, 1949-1958.

YEAR	10 PER CENT FUND	FOREST ROADS AND TRAILS	FOREST HIGHWAYS	TOTAL
1949	\$49,736	\$195,736	\$290,563	\$536,035
1950	18,621	148,906	437,414	604,941
1951	19,292	114,722	115,516	249,530
1952	41,043	173,036	79,880	293,959
1953	77,017	269,953	328,801	675,771
1954	69,579	266,164	344,390	680,133
1955	57,174	391,546	267,233	715,953
1956	39,429	499,710	479,718	1,018,857
1957	48,282	778,437	43,460	870,179
1958	956,721 ¹		497,022	1,453,743
	\$4,215,014	\$2,883,997		\$7,099,101

¹ Combined in 1958 appropriation act.

Source: Forest Service, Milwaukee Office (unpublished data).

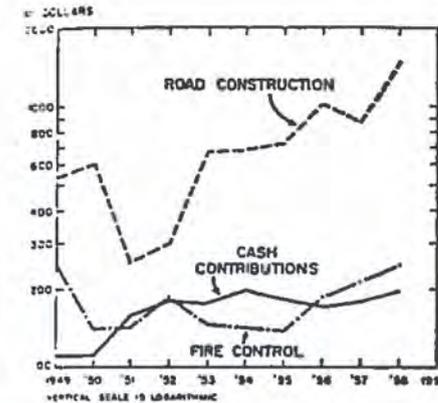


Figure 46. National-forest cash contributions to counties and expenditures for fire control and for road and trail construction and maintenance, 1949-1958.

forests. Cash contributions represented actual disbursements in the fiscal year 1952. Contributions in kind represented average annual disbursements for the three fiscal years 1950-1952. They were limited to federal expenditures that could reasonably be expected to have been incurred by state, county, or local governments if national-forest lands had been in private ownership. They were not included merely because they served a useful purpose or had some public benefit. The test applied was whether the specific expenditures were such that the state or local government would have been financially able and willing to spend equivalent funds during the period in question had the national forests been in private ownership.

Findings for the three counties studied in Minnesota are summarized in Table 84 and Figure 47. They show that estimated taxes were nearly three times as large as cash contributions, and about the same as cash contributions plus contributions in kind. In both cases, the ratio of estimated taxes to federal contributions was considerably higher than for the United States as a whole. Contributions have increased notably since 1952, particularly for forest highways.

With current contributions from national forests—in cash and in kind—approximately equal to estimated taxes if the land were in private ownership, the situation does not seem to be one to cause any particular concern. Nevertheless the subject continues to be a controversial one and is of sufficient importance, both psychologically and financially, to warrant further study. Three aspects of the problem deserves special attention:

1. Do contributions on an ad valorem basis have sufficient advantages over contributions on a gross-receipts basis to recommend extension of the method to all national-forest lands?
2. Are current rates of contributions under each method equitable from the standpoint both of the government and the local community?

3. Should payments under the gross-receipts method be based on annual receipts or on an annual 5-year or 10-year moving average?

In this connection, it is of interest to note that the Study Committee on Payments in Lieu of Taxes and Shared Revenues of the Commission on Intergovernmental Relations ("Kestnbaum Commission") in 1955 recommended for national forests in general that the contribution of 25 per cent of gross receipts be continued, and that it be based on an annual 5-year moving average; that hereafter in the case of acquired lands transitional payments in lieu of taxes be made to the counties concerned; and that the restriction upon local use of the federal payments to expenditures for roads and schools be eliminated. No action has been taken on these recommendations.

TIMBER SALES AND K-V FUNDS. In 1956 the Chief of the Forest Service, in testimony before a Congressional committee, expressed the timber-sale policy of the Service as follows: "The general policy of the Forest Service is to offer sales of a size and duration to best serve the needs of dependent industry and to provide purchase opportunity to large and small industry alike." Although his statement referred particularly to the western national forests, the general policy of making timber sales of such size and duration as will best promote sound forest management, serve industry, and strengthen the local economy is of universal application.

Table 84. Comparison of Estimated Taxes on National Forest Lands in the United States and in Three Counties in Minnesota with Federal Cash Contributions and Contributions in Kind.

	UNITED STATES		MINNESOTA	
	THOUSAND DOLLARS	CENTS PER ACRE	THOUSAND DOLLARS	CENTS PER ACRE
Estimated Taxes, Calendar Year 1952	29,732	18.6	546	20.6
Cash Contributions, Fiscal Year 1952	17,392	10.9	183	6.9
Contributions in Kind, F. Y. 1950-1952, average annual	38,759	24.3	340	12.8
Combined Cash Contributions and Contributions in Kind	56,152	35.2	523	19.7
	UNITED STATES		MINNESOTA	
	PER CENT			
Percentage of Estimated Taxes to Cash Contributions	171		298	
Percentage of Estimated Taxes to Combined Cash Contributions and Contributions in Kind	53		105	

Source: "National Forest Contributions to Local Governments" (202 and supplementary unpublished data).

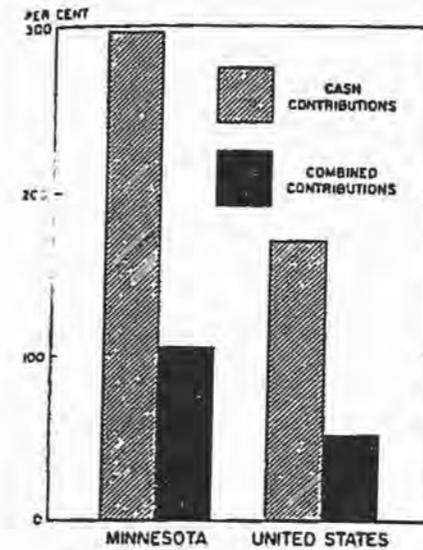


Figure 47. Comparison of estimated taxes to federal cash contributions and to combined cash contributions and contributions in kind for three counties in Minnesota and in the United States, 1952.

In Minnesota the criticism is sometimes made that the latter objective does not receive adequate consideration, that timber sales are often too large to be handled by small operators and the local labor force. The Forest Service replies that the tendency in recent years has been toward smaller sales and that large sales are sometimes necessary for the good of the forest and to meet effectively the needs of the large industrial users of wood, whose interests cannot be ignored. Continued consultation and exchange of views between all interested parties should result in better understanding and in any clearly needed modification of current timber-sale policies and practices.

Another aspect of federal timber sales that comes in for frequent criticism is the allocation of a portion of the receipts to protective and silvicultural activities which the purchaser cannot be expected to handle as a part of his logging operation. The K-V funds thus withheld (so called because the procedure was authorized by the Knutson-Vandenberg Act of 1930) never reach the United States Treasury. For this reason they are not legally regarded as "receipts" and are not subject to the 25 per cent contribution to the counties.

K-V allocations on individual timber sales depend upon the amount of effort required for adequate restocking and betterment of the cut-over area. They normally run from zero to 50 per cent of the total stumpage value, but may occasionally run much higher. On the Tomahawk sale on the Superior National Forest, from which that forest obtains approximately 35 per cent of its annual K-V collections, the amount reserved for silvicultural activities constitutes 23 per cent of

the total stumpage price. Table 85 and Figure 48 show that for the last ten years on both national forests in the state K-V collections have averaged 20 per cent of gross receipts. This figure would be slightly, but not much, larger if timber sale receipts only were taken into account.

Table 85. K-V Funds by National Forests, 1949-1958.

YEAR	CHIPPEWA		SUPERIOR		TOTAL	
	DOLLARS	PER CENT OF GROSS RECEIPTS ¹	DOLLARS	PER CENT OF GROSS RECEIPTS ¹	DOLLARS	PER CENT OF GROSS RECEIPTS ¹
1949	\$ 9,461	10	\$69,057	27	\$ 78,518	25
1950	23,490	21	51,990	21	75,480	21
1951	26,025	14	86,514	23	112,539	20
1952	23,990	10	93,293	21	117,283	17
1953	53,729	19	72,928	20	126,657	19
1954	51,624	19	77,861	18	129,485	18
1955	50,718	20	101,627	22	152,345	21
1956	50,237	22	80,254	19	130,491	20
1957	54,925	22	88,154	21	143,079	21
1958	49,724	21	112,601	20	162,325	21
	\$333,923	20	\$834,279	21	\$1,228,202	20

¹ Including K-V funds.

Source: Chippewa and Superior National Forests (unpublished data).

The same table shows that K-V collections during the same period averaged \$122,820 per year, from which the counties did not receive the 25 per cent paid to them from other receipts. In other words, the counties as a whole received on the average \$30,705 less per year than

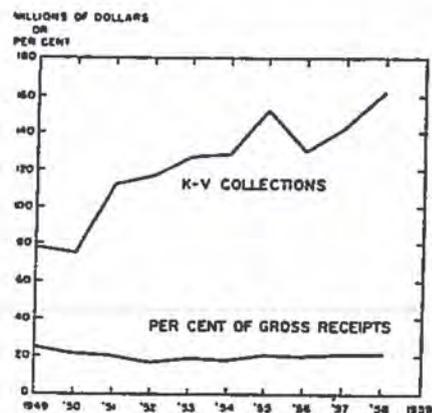


Figure 48. K-V collections in dollars and in per cent of total receipts, Chippewa and Superior National Forests, 1949-1958.

they would have if there had been no K-V fund. This amount is hardly large enough to cause any serious concern, particularly in view of the fact that the more intensive forest management resulting from the use of the funds will produce larger future yields than would otherwise be the case, and will thus increase future contributions to the counties.

NATIONAL MONUMENTS

Minnesota's two national monuments—Pipestone and Grand Portage—present no special problems with respect to either policy or administration. Relinquishment by the Indians of the trust lands included in the Grand Portage National Monument, together with the acquisition of other needed lands, remains to be accomplished but should present no particular difficulties.

Another project in which the National Park Service is interested is the completion of the Great River Road from Lake Itasca to the Iowa line, plus a northern extension to the Canadian boundary at the Lake of the Woods. Minor questions may arise in connection with the final location of the road, but these should not be difficult of satisfactory settlement.

WILDLIFE REFUGES

Federal wildlife refuges comprise a relatively small area (138,591) acres. They nevertheless occupy a position of truly national significance because Minnesota, together with the Dakotas, provides the breeding ground for a large part of the waterfowl population of the United States. The substantial decrease in suitable breeding grounds in recent years, largely as a result of the drainage of potholes, is the cause of much alarm on the part not only of hunters but of all who believe that the country's waterfowl constitute an asset which it cannot afford to lose.

Stoppage of the present trend, or at least a drastic slowing down sufficient to preserve an adequate area of breeding grounds, will require concerted action on the part of federal, state, and private agencies. Two pressing needs are agreement on a defensible estimate of what constitutes an "adequate" area of wetlands for this purpose and development of a practicable program to assure its preservation. There is already general agreement among federal and state officials that the area will be more than public agencies can hope to acquire and that much, perhaps most, of it will have to be provided by land in private ownership. The problems which this situation presents will be discussed later.

For present purposes it is sufficient to emphasize the fact that federal refuges have a prominent part to play in maintaining the supply of waterfowl and other wildlife. It is important that the funds made available for the purchase of additional refuges by the recent increase in the price of the migratory bird hunting stamp from \$2.00 to \$3.00 be spent so as to acquire the most strategic areas and so as to dovetail with

state plans for the expansion of its refuge program. Coordinated action is as essential here as is the case with federal and state forests.

Wildlife refuges, like other federal lands, face the problem of how best to compensate local communities for loss of taxes. Such compensation now takes the form of contributions in cash to the extent of 25 per cent of the net receipts and contributions in kind through fire control and road construction and maintenance. Average annual contributions from these sources during the five fiscal years from 1953 to 1957 were as follows:

25 per cent of net receipts	\$2,016
Fire control	2,350
Road construction and maintenance	5,900
	\$10,266

Some communities feel that these contributions are much too small and are therefore opposed to the expansion of the present system of refuges. Becker County, for example, is outspoken in its opposition to the proposed enlargement of the Tamarac Wildlife Refuge. Since receipts accrue solely from minor and incidental activities such as the lease of grazing land and the sale of timber, they are certain to continue to be small. At the same time the financial needs of local communities are certain to increase.

This situation requires a review of the equity of the present cash contribution of 25 per cent of the net receipts—a method of compensating local communities for loss of taxes which originated with the national forests, where receipts are substantial and increasing. The Study Committee on Payments in Lieu of Taxes and Shared Revenues of the Commission on Intergovernmental Relations recommended that payments from nonmineral receipts should be increased from 25 per cent of the net receipts to 75 per cent of the gross receipts, based on a 5-year moving average; that for lands acquired since September 8, 1939, payments should not be less than the taxes which would be assessable if the property were in private ownership; and that the limitation on the use of the funds for roads and schools should be eliminated.

The suggested increase in payments to 75 per cent of the gross receipts would certainly improve the situation, but in view of the low level of receipts it might not prove a fully satisfactory solution of the problem. Consideration should also be given to other possible methods of compensating the counties for loss of taxes, such as contributions on an ad valorem basis or of a fixed amount per acre. Unless some more satisfactory arrangement than that now in effect is worked out, opposition to the prospective expansion of federal wildlife refuges is almost certain to increase.

INDIAN RESERVATIONS

Outside of the main body of the Red Lake Reservation and the small Sioux reservations in the southern part of the state, Indian lands are so intermingled with other lands as to complicate their administration and management. This is particularly true of the scattered tracts outside of the reservations proper which were transferred from the public domain to the Indians under the Reorganization Act of 1934. Figure 49 shows a good example of the scattered nature of Indian holdings in fifteen townships in Beltrami and Lake of the Woods counties a little north of the main Red Lake Indian Reservation. It also shows the considerable area of Indian lands on which the state has a lien created by drainage projects under the terms of the Volstead Act of 1908.

The situation can be improved by the consolidation of fairly solid blocks of Indian land through exchange with other owners, and by the sale of isolated tracts. The Bureau of Indian Affairs is making progress in both directions but is handicapped by the cumbersomeness of the exchange process so far as state and county lands are concerned (to be discussed later), and by restrictions on its authority to make sales. There is no existing authority for the sale of tribal lands, no matter how advantageous such sale might be, and allotted lands can be sold only with the consent of the allottee and any others having a legal interest in them. When the original allottee is deceased, the number of heirs having a

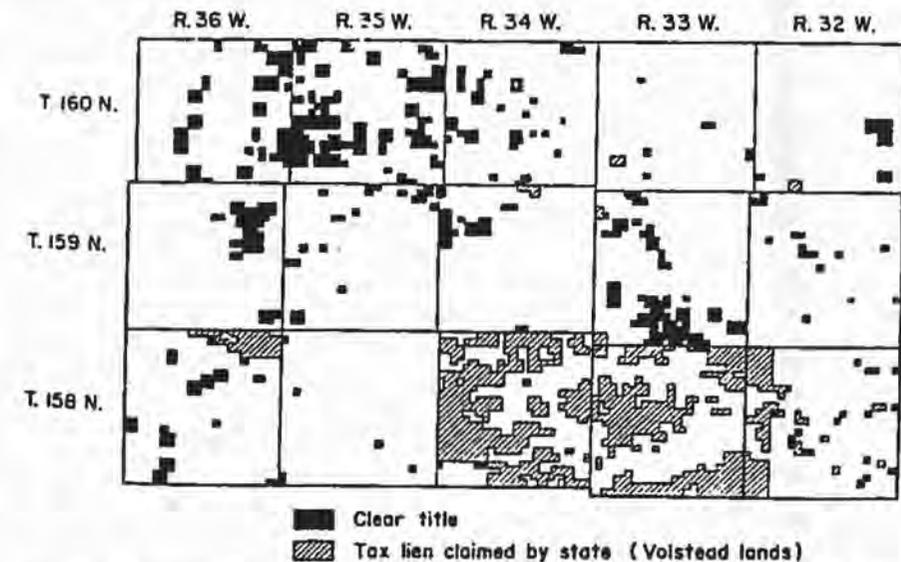


Figure 49. Scattered distribution of Restored Ceded Lands belonging to the Red Lake tribe of Indians in fifteen townships in Beltrami and Lake of the Woods counties.

legal interest in the land may be legion and the difficulty of obtaining their unanimous consent to a sale is almost insuperable.

Two actions would facilitate administration and at the same time promote the interests of the Indians: (1) Authorization of the sale of tribal lands with the consent of the tribe. Such authority is particularly needed with respect to scattered tracts which are difficult of administration and which are of little value to the tribe. (2) Authorization of the sale of allotted lands with the consent of a majority of the persons having a proprietary interest in such lands, or of persons having a majority interest in the lands. Similar consent should also be authorized for the sale of timber, which can now be sold only with the consent of all interested parties.

Indian reservations pay no taxes to local communities and make no specific contribution out of receipts. They do, however, directly or indirectly, pay all or most of the cost of education, welfare activities, and law enforcement. Federal expenditures for fire control averaged \$18,407 per year during the ten years from 1948 to 1957, of which 84 per cent was for prevention and suppression. Expenditures for road and bridge construction and maintenance during the same period averaged \$158,867 per year. The whole subject of taxation and contributions in lieu of taxes is an extremely complicated one so far as the Indians are concerned. It was avoided by the Study Committee on Payments in Lieu of Taxes and Shared Revenues of the Commission on Intergovernmental Relations on the ground that it was outside the committee's field of reference—a position which it seems wise for the present study also to adopt.

A problem of major importance is posed by the declared purpose of Congress to eventually terminate the trusteeship now exercised by the federal government over Indian reservations. Such action would be revolutionary in that it would reverse a policy which has been in effect since the government's earliest dealings with the Indians. It should be preceded by thorough study, both by the federal government and by the State of Minnesota, of the measures necessary to assure continued efficient management of the resources of the reservations and to enable the Indians to adjust themselves to their new status and to discharge their new responsibilities effectively. Otherwise tragedy may result.

LEGISLATIVE JURISDICTION

Article 1, section 8, clause 17 of the Constitution gives Congress power "to exercise legislation in all Cases whatsoever, over . . . the Seat of Government of the United States, and to exercise like Authority over all Places purchased by the Consent of the Legislature of the State in which the Same shall be, for the Erection of Forts, Magazines, Arsenals, Dock-Yards, and other needful Buildings . . ." In accordance with this pro-

vision, Minnesota has consented to the acquisition by the United States of sites required "for customs houses, courthouses, hospitals, sanatoriums, post-offices, prisons, reformatories, jails, forestry depots, supply houses or offices, aviation fields or stations, radio stations, military or naval camps . . . or any other military or naval purpose of the United States." So far as exclusive jurisdiction over any place acquired by the United States for any of these purposes is required by the Constitution or laws of the United States, such jurisdiction is ceded to the United States, subject to the right of the state to cause its civil and criminal processes to be executed on the premises.

With this exception, the Minnesota statutes provide that "the jurisdiction of the United States over any land or other property within this state now owned or hereafter acquired for national purposes is concurrent with and subject to the jurisdiction and right of the state to cause its civil and criminal processes to be executed therein, to punish offenses against its laws committed therein, and to protect, regulate, control, and dispose of any property of the state therein." With respect to the public domain, whether or not in reservations such as national forests, the United States enjoys a proprietorial status only and has the same rights as does any other landowner. The state may not, however, impose its regulatory power directly upon the federal government, nor may it tax the federal land.

So far as acquired lands are concerned, the Weeks Law of 1911 authorizing the purchase of lands for national forests required the consent of the state to such purchases, and applied to the acquired lands the provisions of the act of 1897 relating to national forests created from the public domain: "The jurisdiction, both civil and criminal, over persons within national forests shall not be affected or changed by reason of their existence, except so far as the punishment of offenses against the United States therein is concerned; the intent and meaning of such provision being that the State wherein such national forest is situated shall not, by reason of the establishment thereof, lose its jurisdiction, nor the inhabitants thereof their rights and privileges as citizens, or be absolved from their duties as citizens of the State."

Similar provisions were incorporated in the Migratory Bird Conservation Act of 1929 authorizing the purchase of wildlife refuges, in the Historic Sites Act of 1935, and in several other acts authorizing federal purchases. That Minnesota is fully safeguarded against any possible attempt by the federal government to exercise exclusive jurisdiction over any but a very small area, acquired for certain specified purposes, seems clear.

Much confusion exists as to the jurisdiction of the federal and state governments over streams and water rights, particularly in the West. In Minnesota, the only prospect for controversy, and not a serious one

at that, seems to lie in interpretation of the power conferred upon Congress by the Constitution "to regulate commerce with foreign nations, and among the several states." There is general agreement that this provision gives Congress control over the navigable portions of interstate streams, of course with due recognition of existing rights. The contention of states-rights advocates that Congressional control does not extend to non-navigable waters, or to any purpose other than navigation, has not been upheld in several Supreme Court decisions.

For example, in *United States v. Appalachian Electric Power Company* (311 U. S. 377), the Court in 1940 held that the New River, in Virginia, is a "navigable water" in spite of the fact that obstructions currently prevent navigation, and also that federal control over navigable waters is not limited to navigation but that "flood protection, watershed development, recovery of the cost of improvements through the utilization of power are likewise parts of commerce control." A year later, in *Oklahoma v. Atkinson Company* (313 U. S. 508), the Court went considerably further: "The fact that ends other than flood control will be served, or that flood control may be relatively of lesser importance, does not invalidate the exercise of the authority conferred on Congress. . . . It is clear that Congress may exercise its control over the nonnavigable stretches of a river in order to preserve or promote commerce on the navigable portions. . . . And we now add that the power of flood control extends to the tributaries of navigable streams. . . . There is no constitutional reason why Congress cannot under the commerce power treat the watersheds as a key to flood control on navigable streams and their tributaries."

These decisions cover a lot of ground. They indicate that the Supreme Court will uphold the jurisdiction of the federal government, through Congress, over navigable streams and their tributaries and the watersheds thereof, and that its definition of navigability will be decidedly broad.

STATE LAND PROBLEMS

State lands consist chiefly of the remnants of federal grants, together with a much smaller area acquired by purchase, gift, or exchange. They are widely scattered throughout the northern part of the state and are commonly intermixed with lands in other ownerships. Most of the problems connected with them stem from these facts and from the multiplicity and complexity of the laws dealing with their administration.

UNRESERVED LANDS

Unreserved lands comprise all state lands not in administrative units, even though the mineral lands thus included in this category are reserved in the sense that they are withheld from sale. They are adminis-

tered by the Division of Lands and Minerals in the Department of Conservation, with the technical assistance of the Division of Forestry. The latter division also manages the salt spring lands, under an agreement with the University of Minnesota, to which these lands were transferred in 1873 from their previous administration by the State Land Commissioner (State Auditor).

The chief problems connected with unreserved lands arise from their scattered nature, which makes their administration more costly and less efficient than if they were in more solid blocks. An improvement over the present situation would be the inclusion in state forests of unreserved lands suitably located for this purpose. Such action is contemplated in the plans of the Division of Forestry for a major reorganization of the state-forest system, which provides for numerous additions and subtractions, with a substantial increase in both gross and net area. A considerable area not now in state forests was "reserved and set aside for forestry purposes" by the Commissioner of Conservation on October 28, 1959 (Fig. 50), under the authority granted him by Chapter 407 of Minnesota Laws 1959, as the first step toward presenting a comprehensive reorganization plan to the legislature.

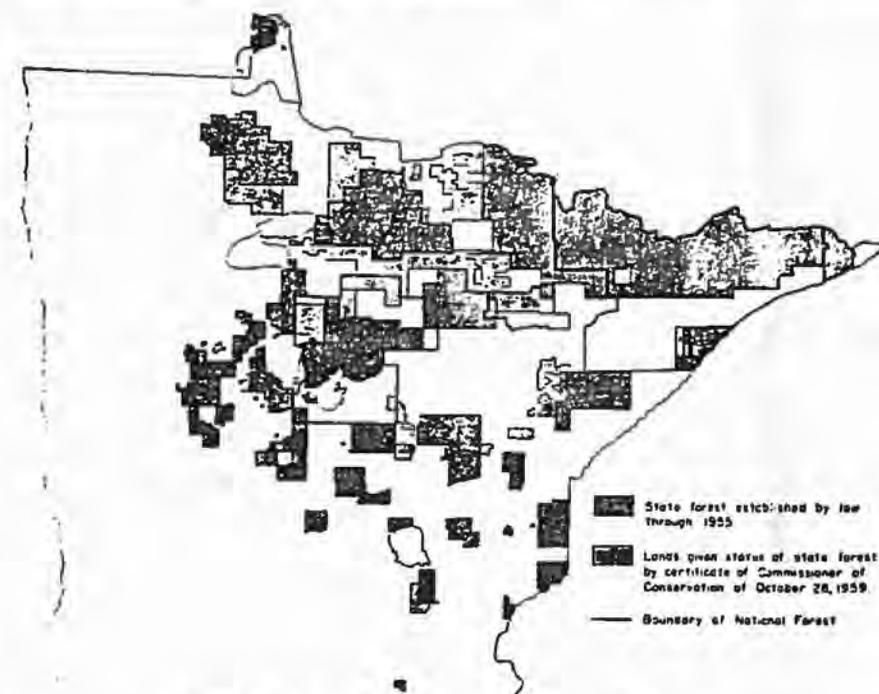


Figure 50. Relation of state forests to national forests.

A second step would be to inaugurate an active campaign for the exchange and sale of other nonmineral, unreserved lands. The objective would be to place them in the hands of the agency (federal, state, county, or private) in a position to handle them to best advantage.

Accounting in connection with land sales would be much simplified by reducing the purchase period from the present twenty years to ten, or even to five, years. Prior to 1940 the purchaser was required to make a down payment of 10 per cent, with no further payment except interest until the end of forty years. The down payment was then increased to 15 per cent, with one-twentieth of the remaining principal (with interest) payable annually for the next twenty years. Thus, a purchaser who bought a 40-acre tract for \$200.00 would make a down payment of \$30.00 and a subsequent annual payment of \$8.50 plus 4 per cent interest on the unpaid balance. With a reduction in the purchase period to ten or five years, the annual payments would be \$17.00 or \$34.00, respectively, plus interest. By shortening the period of indebtedness, the arrangement might well prove advantageous to the purchaser as well as to the state.

Consideration should also be given to the desirability of requiring payment in full at the time of the sale, particularly for small tracts.

STATE FORESTS

Several problems of major importance stand out in connection with state forests.

ADJUSTMENT OF BOUNDARIES. The present system of state forests should be reviewed with the objective of effecting such changes in location and boundaries as will strengthen administration and give promise of reasonable permanence. Reference has already been made to recent progress by the Division of Forestry in the Department of Conservation in the development of such a plan, including additions to state forests in 1959 effected by certificate of the Commissioner of Conservation. Obviously the state's plans need to be considered in the light of similar plans being developed by other owners.

The situation is preeminently one which calls for full consultation between all interested agencies along the lines suggested earlier in this report. Only in this way can the sometimes conflicting proposals that will inevitably appear in the initial plans of these agencies be adequately considered and so far as practicable reconciled.

CONSOLIDATION OF OWNERSHIP. Consolidation of state ownership within organized state forests should be sought so far as is desirable and practicable. This goal will have to be achieved primarily by the exchange process, which has so far not proved very effective, although it is now speeding up. Table 86 and Figure 51 show exchanges involving state lands completed to October, 1958, and those pending as of that date.

Between 1938, when exchanges of state land were authorized by

constitutional amendment, and October, 1958, 32 exchanges were completed with private owners. They have been mostly small in size, running from a half acre to 547 acres of private land, and aggregating 3,918 acres acquired by the state. Although exchanges are supposed to be made on the basis of equal values, practical considerations often made it impossible to adhere strictly to this principle. When the state land was worth more, the difference (\$2,848 in all) was paid

Table 86. State Exchanges with Private Owners and the Federal Government Completed and Pending to October, 1958.

CLASS OF OTHER OWNERSHIP	ACRES		VALUE	
	OTHER OWNER	STATE	OTHER OWNER	STATE
Private				
Completed	3,918	2,482	\$82,252	\$53,486
Pending	854	600	5,444 ¹	6,945 ¹
	4,772	3,082	\$87,696 ¹	\$60,431 ¹
Federal				
Completed	1,528	10,753	45,306	45,279
Pending	33,213	32,529	369,961	369,860
	34,741	43,282	\$415,267	\$415,139
Total				
Completed	5,446	13,235	127,558	98,765
Pending	34,067	33,129	375,405	376,805
	39,513	46,364	\$502,963 ¹	\$475,570 ¹

¹ Appraisals incomplete.

Source: Department of Conservation, Division of Forestry (unpublished data).

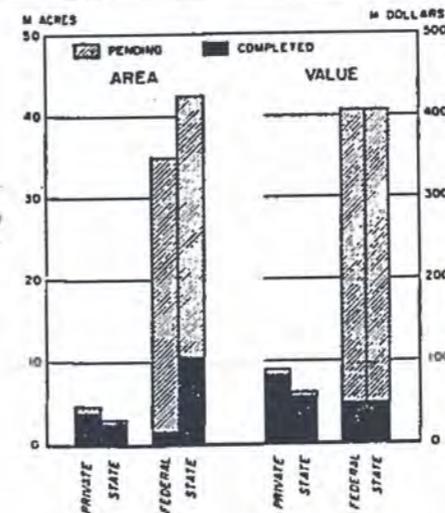


Figure 51. State exchanges with private owners and the federal government completed and pending to October, 1958.

by the owner to the state; when the state land was worth less, the difference (\$32,216 in all) was waived by the private owner. Evidently the state fared well in both situations. Eight cases involving 854 acres of private land were pending in October, 1958.

Only two exchanges with the federal government (involving a total of 12,261 acres) were completed prior to that date and four were pending. The large discrepancy between the federal and state areas in the two completed cases is due to the fact that one of them included Nerstrand Woods, and involved the exchange of a small area of high-value hardwoods purchased by the United States in southern Minnesota for a much larger area of low-value cutover land in the Superior National Forest. Particularly noteworthy is the relatively large area involved in the pending cases. The equal-value formula has been strictly adhered to in the case of both completed and pending exchanges between the state and the federal government.

One aspect of the exchange situation that needs modification is the requirement that exchanges must be not only for lands of the same value but of the same character. There may well be occasional instances where this requirement prevents exchanges which would be mutually advantageous; and it can safely be assumed that the Commissioner of Conservation would not approve of any transaction in which state interests would suffer.

In addition to the consolidation of state forests by exchange, provision should be made for the purchase of strategic tracts which can not be acquired by any other method. This authority might be used to good advantage for the acquisition of state forests in the southern part of the state, where they could do much to give a practical demonstration to the small woodland owner of the advantages of forest management.

TIMBER SALES. The duration of timber sales on state lands is now limited by law to two years. Four annual extensions may be granted with the approval of the Executive Council and the payment by the purchaser of 6 per cent interest a year on the balance of the purchase price. Some years ago an attempt to extend the present limitation to a maximum of fifty years aroused vigorous controversy (99).

In spite of the failure of that proposal to receive favorable action by the legislature, the basic principle of extending the present limitation has much to commend it. Two years is a short time for handling an operation of any magnitude, particularly when construction of access roads is needed; the possible extension for four years is hardly adequate, and even that cannot be counted on with any certainty; and the 6 per cent penalty is an onerous and discouraging factor. The entire situation needs reconsideration, with a maximum of clear thinking and a minimum of emotion.

There is probably no need for sales covering as long a period as fifty years, but a period of ten years might well prove advantageous to all concerned in providing a desirable flexibility that is now lacking. The new limitation would be a maximum, not a minimum, and most sales would still undoubtedly be for shorter periods.

Under existing legislation (Laws 1959, Ch. 385), sales up to \$350 may be made by the Director of the Division of Forestry, with the approval of the Commissioner of Conservation, without bids or bonds. This amount is too small in the light of present stumpage values. It should be raised to \$500, which is the amount that counties are authorized to sell on tax-forfeited lands without bids (Laws 1959, Ch. 453). Director's sales are made for one year only and may be extended for one year; not more than one sale to any individual can be in effect at any one time.

Timber not exceeding an appraised value of \$800 (an amount which also seems small) may be sold by the Commissioner of Conservation at public auction for two years with a possible extension of two years. Sales of more than \$800 must be approved by the Executive Council; they cannot extend over more than one section or exceed \$15,000 in appraised value.

In addition to approving of all timber sales exceeding \$800 in value and all extensions of time for going sales, the Executive Council formulates rules and regulations for the transaction of the timber business of the state, settles claims for casual and involuntary trespass on state timberlands in amounts not exceeding \$1,000, and appoints agents to investigate certain matters relating to the handling of state timberlands. These duties were assigned to the Council in 1925 when it took over the powers and duties of the Board of Timber Commissioners and the Minnesota State Land Commission, long before the organization of the present Department of Conservation under a Commissioner of Conservation in 1937. However appropriate the action may have been at that time, the need for participation by the Executive Council in the timber sale business of the state appears to have vanished. Transferring its functions in this field to the Commissioner of Conservation would relieve its members of an unnecessary burden, with consequent speeding up of administration and without danger to the interests of the state.

The apportionment of receipts from state forests is discussed later in connection with receipts from all state lands.

STATE PARKS

Since the establishment of Itasca State Park in 1891, Minnesota's park system has expanded to the 45 parks which it now includes, with an area of 105,400 acres, plus more than 700 acres of waysides and monuments. Adequate maintenance of existing facilities and the

acquisition of sufficient additional areas to meet the rapidly mounting recreational demands both of its own citizens and those from other states constitute the chief needs in this field. Delay in accomplishing the latter task is dangerous, since suitable areas are becoming more scarce and their acquisition more expensive with the passing of the years.

The principle of multiple use is practiced to a limited extent in the management of state parks. Commercial utilization of timber and establishment of forest plantations are regarded as legitimate activities wherever they will increase recreational, scenic, and scientific values, as for example in the perpetuation of Norway pine in Itasca Park. In the absence of evidence to the contrary, it may be assumed that the policy meets with general approval.

GAME REFUGES AND PUBLIC HUNTING GROUNDS

Minnesota has been among the leaders in the establishment of game refuges and public hunting grounds. As in the case of state parks, a major problem is expansion of the present system to meet anticipated needs. It is particularly acute with respect to waterfowl, whose breeding grounds are diminishing steadily as a result of the drainage of potholes and other wetlands.

Although substantial sums are currently available from license fees and from federal contributions under the Pittman-Robertson Act, they are inadequate, even in combination with similar federal purchases, to preserve the area needed. As was indicated in the discussion of federal refuges, private lands will apparently have to continue to supply the bulk of the breeding grounds if anything like the present supply of waterfowl is to be maintained, unless a much more ambitious program of public control of potholes is undertaken.

WATER ACCESS AREAS

Acquisition of areas affording access to streams and lakes bordered by private ownership constitutes an important part of the state's program for the furtherance of recreational activities such as fishing and boating. Although the state has already acquired areas providing access to some 290 lakes in 47 counties in all parts of the state, they fall considerably short of opening up all of the waters to which public access is desirable.

COURT DECISIONS. Furthermore, until recently, there has been question as to whether state ownership of a piece of land on a lake opens the entire lake to public use. In 1900, in the case of *Shell v. Matteson* (81 Minn. 38), the Minnesota Supreme Court stated: "The owners of land bordering on the shore of a meandered nonnavigable or dried-up lake own the bed of the lake in severalty. Their title extends to the center of the lake; the boundary lines of each abutting tract being

fixed by extending, from the meander line on each side of the tract, lines converging to a point in the center of the lake." The court also ruled that on lakes where there are several riparian owners it would be unconstitutional for the state to declare ownership of the bed of the lake to be in commonalty.

Two years later, in the case of *Lamprey v. Danz* (86 Minn. 317), the Supreme Court took a similar view: "It is elementary that every person has exclusive dominion over the soil which he absolutely owns; hence an owner of land has the exclusive right of hunting and fishing on his land, and the waters covering it." This statement was quoted by the Supreme Court in 1954 in the case of *State, by Burnquist, v. Bollenbach* (241 Minn. 103). That case involved the right of the state, under a condemnation statute which will be discussed later, to acquire a small tract on the shore of a lake completely surrounded by the land of one owner. The court held that the lake was nonnavigable and that the bed was owned by the abutting landowner. From this it was concluded, following the *Lamprey* case, that the overlying waters were also private property and that the lake was not a public lake on which the state had power, under the statute, to acquire an access area by condemnation. No question as to the hunting and fishing rights of other riparian owners was involved, since there was but one owner.

The *Rabbit Lake* case, decided by the Supreme Court on March 14, 1958 (251 Minn. 521), dealt only with the question of ownership of certain lake beds, which the court determined to be in the private riparian owners with respect to most of the area involved. The rights of riparian owners to the use of the waters of the lakes were not at issue. In the course of its decision the court took occasion to point out that "meandered lakes are not necessarily navigable lakes . . . Meander lines by government surveyors are mainly for the purpose of determining the quantity of land which is to be paid for by a prospective purchaser. The government surveyors had no power to determine navigability."

With respect to the recreational values involved, the court stated: "The briefs amici curiae submitted in support of the petition for rehearing deal mainly with the importance of the lakes and streams to the people of the state from a recreational and tourist standpoint. We are not unmindful of this, but . . . the right of protection or control of the state waters for [recreational] or any like features has not been asserted by the state and is not involved in the present litigation in any way whatever."

In contrast to the *Bollenbach* and *Rabbit Lake* cases, the sole issue in the case of *Johnson v. Seifert*, decided by the Supreme Court on January 8, 1960, was the right of a riparian owner on two small lakes in Washington County to make use of the lakes over their entire surface,

irrespective of whether the lakes are navigable and irrespective of the ownership of their beds. The court answered this question in the affirmative and expressly overruled the contrary decision in the 1902 case of *Lamprey v. Danz*. This action is so important as to justify quoting liberally from the syllabus:

"1. Riparian rights are an incident, not of ownership of the bed of a lake, but of the ownership of the shore.

"2. An abutting or riparian owner of a lake, suitable for fishing, boating, hunting, swimming, and other domestic or recreational uses to which our lakes are ordinarily put in common with other abutting owners, has a right to make such use of the lake over its entire surface in common with all other abutting owners, provided such use is reasonable and does not unduly interfere with the exercise of similar rights on the part of other abutting owners, regardless of the navigable or public character of the lake and regardless also of the ownership of the bed thereof.

"3. A minor body of water which by its nature and character reasonably has no overall utility common to two more abutting owners would fall outside the foregoing rule.

"4. Each riparian owner has the privilege to use the water for any beneficial purpose, such as irrigation, provided such use is reasonable in respect to other riparian owners and does not unreasonably interfere with their beneficial use."

So long as this decision stands, there can be no question as to the right of riparian owners, private or public, to make use over their entire surface of both navigable and nonnavigable lakes. Ownership of the bed of a lake does not give the owner control over the use of the overlying waters as against other riparian owners.

STATE CONDEMNATION. In 1945 the legislature authorized the Commissioner of Conservation to acquire by condemnation "parking or camping areas of not to exceed five acres adjacent to public waters to which the public theretofore had no access or where the access is inadequate and upon which the public has a right to hunt and fish, and such easements and rights of way as may be required to connect such areas with public highways." The authority did not extend to lakes which are not meandered or which contain less than 200 acres within the meander lines, and approval by the Executive Council was required for acquisitions costing more than \$1,000.

Under this law, the state in October, 1949, sought to acquire by condemnation 5 acres on the north shore of Five Lake in Otter Tail County. William M. Bollenbach, the sole owner in fee simple of all the riparian land surrounding the lake, which had originally been included in the federal grant to the Northern Pacific Railroad Company, contended that the statutory requirements for condemnation did not

exist, that Five Lake is not navigable, and that its waters are therefore not public waters "upon which the public has a right to hunt and fish." The State Supreme Court on January 29, 1954, in the case to which reference has already been made (241 Minn. 103), upheld his contention on the following grounds:

"The ownership of the soil under most bodies of water in Minnesota is determined by whether or not the body of water was navigable on May 11, 1858, the date this state was admitted to the Union. The state, upon admission to the Union, became vested with title in trust for the public to the beds of all waters then navigable and not previously granted by the United States, subject to the paramount power over such waters by the United States as a result of its power to regulate interstate commerce. The title to beds of water not navigable at the time of the state's admission to the Union and not previously patented remained in the United States and passed by subsequent patent to the purchaser of the riparian upland unless specifically reserved in the United States by the act of conveyance."

The court held that Five Lake was not navigable when Minnesota was admitted to the Union, and that the title to the bed of the lake was therefore in the sole riparian owner of the surrounding lands. The lake was not a public body of water on which the public had a right to hunt and fish; the state consequently had no authority under the statute to condemn land on its shores.

Even had such acquisition been possible, the decision of the court in the *Lamprey* case would have opened to public use only the pie-shaped piece of land and water extending from the shore to the center of the lake. That limitation has now been removed by the recent decision in the case of *Johnson v. Seifert*, so that acquisition by the state of an access area of any size opens the entire lake to reasonable use by the public.

Nevertheless, a major conclusion of the court in the *Bollenbach* case still stands—that existing legislation gives the state no authority to condemn access areas on nonnavigable lakes, since these are not public waters. The only way to change this situation is by amending the law so as to permit condemnation of sites on nonnavigable as well as navigable lakes. Since the state has many nonnavigable lakes which are intrinsically capable of providing excellent opportunities for fishing and boating by the general public, such action is well worth careful consideration.

Another possibility was suggested by the Supreme Court in the *Rabbit Lake* case when it stated that "there will be time enough to decide the extent to which the state may exercise control over its waters which may be nonnavigable under Federal tests when a case involving this issue is presented." This language almost constituted an invitation to

initiate such a test. The need for doing so, however, seems to have disappeared because of the decision in the case of *Johnson v. Seifert* that all riparian owners on a nonnavigable lake have a right to the use of all of its surface waters. Access to the lake through ownership by the state of a portion of its shore is thus the key to making it available for public use. The only means of assuring such access where the riparian lands are now entirely in private ownership is by legalizing condemnation proceedings by the state.

ALLOCATION OF RECEIPTS

Substantial current income is received from sales of timber and leases on state lands (Table 87). As would be expected, receipts from timber sales are much greater than from leases. More surprising is the fact that during the six years from 1954 to 1959 timber sales from state forests exceeded those from other state lands by only 17 per cent. On the other hand, during the ten years from 1949 to 1958, receipts from leases of lands not in state forests, excluding mineral leases and permits, were 2.8 times those from state forests.

Quite noticeable is the marked falling off of receipts from timber sales since 1957, when the total was more than a million dollars. In 1959, the receipts of \$749,176 were slightly less than the average for the 11-

Table 87. Receipts from Timber Sales and Leases on State Lands, 1849-1959.

FISCAL YEAR	TIMBER SALES ¹			LEASES ²		
	STATE FORESTS	OTHER STATE LANDS	TOTAL	STATE FORESTS	OTHER STATE LANDS ³	TOTAL
1949	*	*	\$606,123	\$10,005	**	**
1950	*	*	525,281	10,098	\$58,736	\$78,839
1951	*	*	699,567	10,049	**	**
1952	*	*	616,863	9,924	64,237	84,210
1953	*	*	987,389	9,097	**	**
1954	\$416,138	\$342,052	758,190	9,833	102,536	121,466
1955	528,392	424,639	953,031	11,393	**	**
1956	541,304	408,896	950,200	15,815	83,028	110,233
1957	639,268	570,480	1,209,748	15,441	**	**
1958	442,687	410,310	852,997	26,814	117,593	159,848
1959	380,832	368,344	749,176	25,849	**	**

¹ The Division of Forestry handles timber sales on all state lands.

² Does not include receipts from mineral leases or permits.

³ Includes only land under the jurisdiction of the Division of Lands and Minerals.

* Separate figures for sales from state forests and other state lands are not available prior to the fiscal year 1954.

** Included in the following fiscal year. Figures are for the biennium ending with the year shown.

Source: Department of Conservation (unpublished data).

year period (\$809,870). The Division of Forestry estimates that if the total allowable cut could be marketed gross receipts would approximate \$1,300,000 a year.

Receipts from the sale of trust-fund lands, together with buildings and other improvements thereon, were as follows by bienniums from 1949 to 1958:

1949-1950	\$368,210
1951-1952	262,448
1953-1954	360,701
1955-1956	221,387
1957-1958	219,161

\$1,431,907

The average annual income of \$143,191 from such sales has been added to the principal of the appropriate trust funds. Although the amount is not large and appears to be decreasing slowly, it shows that sale of trust-fund lands has by no means stopped.

The complexity of existing provisions for the allocation of receipts from different classes of state land is evident from Table 88. An indication of the approximate amounts involved is given by figures showing receipts during the fiscal year 1958 from timber sales on all lands under the jurisdiction of the Commissioner of Conservation and from leases on all lands under the jurisdiction of the Director of the Division of Forestry. They do not include receipts from the sale of land, from mineral leases, from leases of trust-fund lands outside of state forests, or from a few other minor sources, but they do comprise the bulk of the annual income from state lands.

Receipts from salt-spring lands are credited in full to the University of Minnesota. Counties have their choice of receiving 15 cents per acre from lands purchased by the state for game refuges and public hunting grounds, or 35 per cent of the gross receipts from such lands. Payments to the counties from the Game and Fish Fund under this arrangement amounted to \$17,279 in 1958.

In order to make the required allocation of receipts, a record has to be kept of the receipts from each class of state lands, commonly by counties, and in some cases by school districts and townships. The amount of bookkeeping involved is staggering. Any simplification that still assured allocation of the receipts substantially for the purposes prescribed would be a real contribution to the efficiency of administration and would result in a material financial saving.

In the case of consolidated conservation areas, the recording of receipts by school districts and townships seems to be an unnecessary refinement. Substantially the desired result would be obtained by maintaining a record of receipts for the county as a whole and then distributing the coun-

ty's share, earmarked for school and township purposes, on the basis of the areas of conservation lands in those governmental subdivisions.

In the case of trust-fund lands, it would seem to be feasible to combine receipts from all four classes of land, irrespective of their location, and then to allocate the receipts to the respective funds on the basis of their relative areas. Under such a procedure, on the basis of present areas,

Table 88. Allocation of Receipts from State lands, and 1958 Receipts from Timber Sales and Certain Leases.

Trust Fund Lands	Receipts
Outside of State Forests	\$223,961
100% to the appropriate trust fund, from which interest on the principal is distributed as follows:	
School Fund—to school districts according to the number of pupils between the ages of 5 and 21 in daily attendance during the preceding year	
University Fund—to the University of Minnesota	
Swampland Fund—50% is distributed in the same way as earnings from the School Fund, and 50% to the state's educational and charitable institutions	
Internal Improvements—since 1897 to the Road and Bridge Fund	
Within State Forests	\$421,080
100% to a Suspense Fund, from which costs of improvements, protection, and management of the lands are deducted and the balance transferred to the appropriate trust fund	
25% of the costs is transferred to a State Forest Development Account, and 75% to the General Revenue Fund	
Acquired Lands	
Within State Forests (including tax-forfeited, "50-50" lands, and Pine Island Land Utilization Project lands), except as indicated below	\$ 27,121
100% to the State Forest Fund, from which 50% is transferred to the appropriate counties and 50% to the General Revenue Fund	
Within Burntside State Forest	\$ 21,065
100% used for forestry purposes within the forest under the terms of the federal grant	
Within Pillsbury State Forest	\$ 141
2/3 to the University of Minnesota, 1/6 to the state, 1/12 to the county, and 1/12 to the township, under the terms of the gift	
Within Itasca State Park and Lake Bemidji State Park	\$ 957
100% to the General Revenue Fund	
Within Game Refuges	
65% to the Game and Fish Fund and 35% to the county, or alternatively 100% to the Game and Fish Fund and 15 cents per acre to the county, payable from the Game and Fish Fund	
Outside of State Forests, Parks, and Game Refuges	\$ 173
100% to the General Revenue Fund	

Consolidated Conservation Areas

\$18333

50% to the Consolidated Conservation Areas Fund, subject to legislative appropriation, and 50% to the appropriate counties. County receipts are apportioned 30% to the County Development Fund, to be expended for the rehabilitation and development of the portion of the county lying within the conservation area; 40% to the Capital Outlay Fund of the school district from which derived; 20% to the County Revenue Fund; and 10% to the Township Road and Bridge Fund of the township from which derived (Prior to July 1, 1959, in certain parts of Lake of the Woods County, 10% of the receipts went to the Consolidated Areas Fund, and 90% to the county)

approximately 61 per cent of the total receipts would go to the Swamp Land Fund, 38 per cent to the School Fund, 0.7 per cent to the University Fund, and 0.3 per cent to the Internal Improvement Fund.

In both cases, the individual governmental units and trust funds in some years would get less than their due on the basis of actual receipts from the lands in the units or funds; in other years, they would get more. They would, however, have the advantage of receiving more stable annual receipts than under present procedures, and in the long run the results would be practically the same. A similar arrangement has proved satisfactory in national forests, where receipts for the entire forest are lumped and 25 per cent then distributed to the counties on the basis of their respective areas of national-forest land.

Two other items in connection with the allocation of receipts deserve consideration. With acquired lands in state forests (except for the Burntside and Pillsbury State Forests), 50 per cent of the gross receipts goes to the counties and 50 per cent is retained by the state, which bears all the costs of administration and management. Would it not be more equitable to make the division on the basis of net receipts; and in any event should not part or all of the state's share of the receipts be allocated to the Department of Conservation, which is responsible for administration of the lands?

In the case of trust fund lands, 25 per cent of the cost of protection and administration is placed in a State Forest Development Account if the lands are within a state forest, but no funds are allocated to meet costs if the lands are not within a state forest. Again the question arises as to whether a larger share of the costs should not be paid directly out of receipts. The answer depends on the basic policy of the state with respect to financing activities from which a revenue is derived out of that revenue, or by direct appropriations, or by a combination of the two methods. Both methods are now used, but with no uniformity of treatment as between different classes of land.

In addition to sharing revenues from certain state lands with local

units of government, the state makes substantial contributions to counties in the northern part of the state through the Office of Iron Range Resources and Rehabilitation. In 1958, payments to counties for resurvey work and for the employment of county foresters amounted to \$78,085.

As in the case of federal lands, there is a basic question as to whether the present allocation of receipts from different sources is equitable from the standpoint both of the state and the local government units. The problem is a complicated one which deserves more study than it has so far received.

COUNTY LAND PROBLEMS

ORIGIN AND TRENDS

Large-scale ownership of land by the counties is a recent phenomenon resulting from tax forfeiture. It is also one that is confined to the northern counties, which in the 1930's suddenly found themselves the possessors of enormous areas on which their former owners, under depression conditions, no longer felt justified in paying taxes. Although absolute title to the tax-forfeited lands is held by the state in trust for the taxing districts, they are universally regarded as county lands, since the counties are basically responsible for their administration and management and handle the costs and returns connected therewith.

Considerable areas of tax-forfeited land were reclaimed by their former owners or sold by the state; but the total area disposed of in these ways was relatively small, and the counties collectively have continued to rank next to the state as the largest owner of land. In 1953, 45 per cent of all county-owned, commercial forest land in the United States was in Minnesota and 75 per cent in Minnesota and Wisconsin.

Following the depression years of the 1930's, tax forfeitures fell off materially, but they have never ceased entirely. Replies to questionnaires sent to all of the counties in the state show that in thirteen of the fourteen counties in the northeastern region (Pine County did not answer the questionnaire), during the five years from 1953 to 1957, tax forfeitures aggregated about 174,000 acres. During the same period sales aggregated about 106,000 acres, leaving a net increase in tax-forfeited lands of about 68,000 acres. The average annual increase was 13,600 acres, or about 0.4 per cent of the total area of county land in the thirteen counties. In other words, the area of county land in recent years has been approximately stationary.

POLICY AND PRACTICE

County policy with respect to the disposal and retention of county lands is still in the formative stage, particularly with respect to forest lands. In general, the policy is to sell the relatively small areas which are clearly agricultural in character, and to retain those areas, also relatively small, which are of primary value for recreational purposes, although sales of tax-forfeited lake shore are still not uncommon. With

forest lands, the trend is toward retention in county ownership, but in some counties sales are made which are relatively small, on a percentage basis, to farmers and to corporations where local conditions appear to favor private ownership. The extent to which such sales are desirable from the standpoint of the public interest depends largely on the relative strengths and weaknesses of county management and private management.

In this connection, serious consideration should be given to the possible desirability of transferring to the state under the 50-50 arrangement lands which for one reason or another do not lend themselves to effective and profitable management by the county. There are probably many situations in which such transfers would be mutually advantageous.

Whether tax-forfeited lands are to be sold or retained in public ownership, it is essential that steps be taken to assure the complete validity of the state's title to them. Attempts to do so have proved only partially successful, as is evidenced by the insistence of the federal government that the title to county lands being acquired by purchase or exchange be cleared by court action. This situation makes the disposal of county lands unnecessarily slow and expensive. It also causes reluctance on the part of the counties to make needed investments in the management of lands which they wish to retain in county ownership but to which they may presently find that they do not have a clear title. County and state officials are practically unanimous in regarding the tightening of present tax-forfeiture proceedings as a "must."

County lands differ from state and federal lands in one important respect. Virtually all of them were at one time in private ownership. This means that some one had thought it worth while to acquire them, often by purchase, and indicates that they probably averaged better in stocking, accessibility, or fertility (or perhaps all three) than lands which never passed out of public ownership. Exploitation and fire have taken their toll of the original timber resources and have left large unstocked or poorly stocked areas, but for the most part they have not changed drastically the basic productivity of the lands. The chief problems connected with their management center on ways and means of taking full advantage of their potential producing capacity.

The policies of the various land-owning counties vary so widely that any generalizations concerning them are bound to have exceptions. By and large, however, county commissioners, and to a lesser extent land commissioners, are more interested in current than in future returns. They consequently tend to do little long-range planning and to avoid substantial investments in such silvicultural activities as thinning and planting. Forest Service figures for example, show that during the ten years from 1949 to 1958 planting by the counties totaled less than half of that by either state or federal agencies (Table 76).

The extent of memorial forests constitutes another measure of the interest of the counties in dedicating their lands to permanent forest management. Replies to the county questionnaire indicate that memorial forests have so far been established in 9 of the 14 counties in the north-eastern region and 5 of the counties in the central region. Their total area of 935,000 acres constitutes 26 per cent of the Forest Service 1953 estimate of the total area of commercial forest land in county ownership and 36 per cent of the commercial forest land in the 14 counties involved. Evidently the policy of dedicating tax-forfeited lands to permanent forest production by designating them as memorial forests varies widely from county to county.

PERSONNEL AND FINANCE

The chief weaknesses in the management of county lands lie in the related realms of personnel and finance. In 1935 the legislature authorized the county board to appoint a land commissioner and necessary assistants "to gather data and information on tax-forfeited lands; make classifications and appraisals of land, timber and other products and uses; enforce trespass laws and regulations; seize and appraise timber and other products and other property cut and removed illegally from tax-forfeited lands; assist the County Auditor in the sale and rental of forfeited lands and the products thereon; and such other duties concerning tax-forfeited lands as the County Board may direct."

Between 1937 and 1950 the following nine counties appointed land commissioners in the years indicated:

Aitkin	1939	Crow Wing	1946
Becker	1944	Itasca	1942
Beltrami	1937	Koochiching	1938
Cass	1946	St. Louis	1942
Clearwater	1946		

Rather surprisingly, in view of the increasing interest in the management of tax-forfeited lands, no county has appointed a land commissioner since 1946. Two of the land commissioners, in Crow Wing and Koochiching counties, are men with professional training in forestry, and some of the others have acquired considerable competence as forest managers through practical experience.

Perhaps even more significant is the fact that the counties employ a total of only ten men with professional training in forestry, including the two land commissioners. No county without a land commissioner has a forester on its payroll. The counties also enjoy the services of fourteen foresters employed by the Office of Iron Range Resources and Rehabilitation, of whom twelve are assigned directly to the counties and two work out of the Hibbing office. IRRR also has a forest survey staff of six men and an additional marketing and research staff who work on specific county problems when the need arises. Furthermore, the counties

receive help in the administration of timber sales, fire protection, and free trees for planting from the State Department of Conservation, which in several cases provides practically all of their technical assistance.

Even with this help, the permanence of which is perhaps open to doubt, the counties are out of line with federal, state, and industrial landowners in the availability of professional services. Comparative figures for the number of foresters employed by the various classes of landowners, as reported by them in 1958, are as follows:

Federal	
Forest Service	50
Bureau of Land Management	2
Bureau of Indian Affairs	6
State	41
County	
Without IRRR help	10
With IRRR help	24
Industry	54

In the case of the public agencies, the personnel reported includes men both in the field and at the state headquarters, but does not include men at the Regional Office of the Forest Service at Milwaukee, or at the Area Office of the Bureau of Indian Affairs at Minneapolis. Neither does it include the 19 men at the Lake States Forest Experiment Station whose activities are centered in Minnesota and who conduct research that is of benefit to all classes of owners. The figure for the state includes "service" foresters. In the case of the industrial owners, the personnel reported includes men engaged in utilization, marketing, wood procurement, administration, and research as well as in actual forest management.

The figures are not strictly comparable, particularly in view of the wide differences in forest areas and forest values under the management of the different classes of owners. Nevertheless, they leave no doubt that the counties are understaffed with respect to professional personnel in comparison with other public agencies and with industrial landowners. This situation is a natural result of the evolution of county ownership and management. When the counties suddenly found themselves the involuntary owners of enormous areas of land, their first reaction was to attempt to return it to private ownership as rapidly as possible. Only gradually did county officials realize that the counties were probably the permanent owners of at least a large part of the tax-forfeited lands and that this fact might prove a blessing in disguise.

The auditors and land commissioners are now almost without exception convinced that lands to be retained in county ownership should be so managed as to make them a permanent and increasingly valuable asset. Some of them are making substantial progress in this direction.

They are, however, usually handicapped by inadequate appropriations to undertake activities which they know to be desirable, and to employ the staff necessary to place them under competent technical direction. Not until this handicap is removed, can the management of county lands be brought to a satisfactory level.

County commissioners in general, but with some notable exceptions, are more interested in actual current income than in potential future income. Average annual receipts and costs during the five years from 1953 to 1957 are shown in Table 89. They are based on reports from all of the fourteen counties in the northeastern region except Pine, and on Becker, Kanabec, Mahnomon, and Wadena counties in the central region. Although not quite complete and probably not entirely comparable, they give a good picture of the situation.

Table 89. Average Annual Receipts and Costs Connected with the Administration of Tax-Forfeited Lands in Seventeen Counties, 1953-1957.

COUNTY	RECEIPTS		COSTS	
	DOLLARS	PER CENT	DOLLARS	PER CENT
Beltrami	51,582	8	21,348	8
Itasca	109,375	16	35,237	14
Koochiching	79,931	12	37,609	15
St. Louis	167,594	24	84,496	34
Others (13)	278,142	40	73,192	29
	686,624	100	251,972	100

Source: County replies to questionnaire.

Receipts exceeded costs by \$434,652, but 44 per cent of the receipts came from sales of land. The remaining 56 per cent came from sales of timber and from leases. Costs aggregated 37 per cent of total receipts and 66 per cent of receipts from timber sales and leases. Reported costs may not include all of the help received from the Office of Iron Range Resources and Rehabilitation, but the salaries of foresters provided by IRRR are probably included. Only one county reported any help from the Department of Conservation — \$6,700 in the form of free planting stock. Except for occasional large sales of land, both receipts and costs remained at approximately the same levels during the five-year period.

Particularly striking is the concentration of activity connected with the administration of tax-forfeited lands in Beltrami, Itasca, Koochiching, and St. Louis counties. Although these four counties include only 40 per cent of the total area of land in county ownership, they accounted for 60 per cent of the total receipts, 70 per cent of the receipts from timber sales and leases, and 71 per cent of the costs. Quite evidently the counties with the largest timber-sale business are spending the most on the management of their lands.

The reluctance of county commissioners to spend more than they now do on the management of county lands is understandable in view of the pressing financial needs of the counties. At the same time they should recognize that those needs are certain to increase and that an investment in more intensive land management may provide dividends which will help to meet them. A gradual change in attitude is probable as both county commissioners and their constituents appreciate more fully the potential contribution of county lands to the local economy.

Meanwhile, more funds could be made available by increasing the area in memorial forests, the income from which is available for their development and maintenance. Another move would be to increase to a substantially higher figure the 10 per cent of the forfeited tax sale fund which can now be allocated for timber development on tax-forfeited lands. Such action would have the advantage of emphasizing the contribution which county lands are making toward paying their own way. The fact that the lands are primarily valuable for timber production might also be stressed by changing the title of the land commissioner to forest commissioner or to forest and land commissioner.

The power and duty of approving county timber sales, including tracts to be offered, forestry practices, and stumpage prices, is vested in the Commissioner of Conservation and is exercised by him without cost to the county. Such approval may be waived by the commissioner in such manner as he shall prescribe, but this authority has not yet been exercised. Perhaps more leeway might be granted the counties as they demonstrate their ability as land managers.

In addition to supervising timber sales and approving timber values on land sales, the Department of Conservation provides fire protection and assists the counties by providing them with free planting stock. These various forms of state control and assistance, including that from the Office of Iron Range Resources and Rehabilitation, indicate that state interests are at stake in the management of county lands and that these interests require protection by state action. How long and on what scale they should be continued depends on the speed and the extent to which the counties demonstrate their ability to stand on their own feet, both technically and financially. If the need for state cooperation appears likely to be permanent, consideration should be given to the desirability of granting a subsidy in the form of cash rather than services, of course with suitable restrictions and with provision for county matching of state funds.

ADJUSTMENT AND CONSOLIDATION OF HOLDINGS

Perhaps the most controversial question in the whole field of land ownership in Minnesota has to do with the future of county lands. One phase of the question involves the extent to which these lands might advantageously be transferred to private ownership.

County officials are hesitant about disposing of large areas. They favor limited sales of forest land to small "tree farmers" and to other farmers who need to supplement their income from agriculture and who can be trusted to keep the land productive. They also favor sales of scattered tracts to industrial owners where such sales will clearly promote desirable consolidation of private holdings, but are skeptical of large sales for the primary purpose of enabling corporations to produce a larger percentage of their timber requirements. Above all things, the counties wish to avoid sales that are likely to result in depletion of the land and its subsequent reversion to the county by the tax-delinquency route.

On the positive side, the counties regard their lands as a welcome source of revenue. As the lands recover from previous overcutting, increasing quantities of timber become merchantable and receipts correspondingly expand. These receipts are commonly believed to exceed the amounts that would be received if the lands were in private ownership. Another alleged advantage is that county sales are commonly made to small local operators and thus contribute more to the local economy than would the larger operations handled by "foreign" operators which often characterize the management of corporation lands. Many county lands also have recreational values which are likely to increase substantially.

The point of view of industrial owners, which will be presented more fully in the later discussion of private land problems, differs considerably. They emphasize the present and steadily increasing intensiveness of management of their own lands as evidence that any additional lands which they may acquire will receive similar treatment. With respect to financial returns, they believe that the more intensive management which they practice, with correspondingly greater returns, will give the counties larger receipts in the form of taxes than they will receive under county ownership. Some cutting may be done by operators from outside of the county, but total employment will be greater because of the larger yields from industrial holdings; and more intensive management by all classes of owners should provide full employment for the local labor force.

The validity of these opposing arguments deserves careful study, which might well be included in the broader study of the relative efficiency of different classes of owners previously suggested. A word of caution should be issued with respect to the difficult task of comparing prospective financial returns to the counties from the same lands if under county ownership and if under industrial ownership. Subsidies provided by the state must not be overlooked in determining net receipts from county lands. Costs of travel, interest on capital investments such as automotive equipment, and overhead expenses must also be taken into account. Prospective taxes will depend on the quality and location of the lands

and on the method of taxation employed (general property tax, auxiliary forest, or tree growth tax law). At best they will be an informed estimate. Consideration must also be given to probable future changes in intensity of management, and consequent changes in costs and returns, on both county and private lands.

So many factors which are difficult of accurate measurement are involved that a considerable element of judgment must enter into decisions as to the wisdom of any substantial transfers from county to industrial ownership. That judgment should, however, be based on the unprejudiced collection and analysis of all available facts; and it should be influenced by public opinion throughout the state as well as by the wishes of the counties and the industrial owners immediately concerned.

Whatever adjustments in county ownership may seem advisable, consolidation of existing holdings should be sought with a view to promoting efficiency of administration and management. Exchanges with other owners constitute a non-controversial means of effecting such consolidation which should be used more extensively than has so far been the case. Table 90 shows that up to October, 1958, only 17 exchanges had been completed, although others were pending. Areas in county

Table 90. Exchanges Involving County Lands Completed to October, 1958.

CLASS OF OTHER OWNERSHIP	NUMBER	ACRES		VALUE	
		OTHER OWNER	COUNTY	OTHER OWNER	COUNTY
Private	16	7,313	9,952	\$73,144	\$72,276
Federal	1	200	200	2,362	2,361
	17	7,513	10,152	\$75,506	\$74,637

Source: Department of Conservation, Division of Forestry (unpublished data).

ownership amounted to about 10,150 acres and in other ownerships to about 7,500 acres, with values of approximately \$75,000 on each side. As in the case of state exchanges, the other owner paid the difference in value when it was in favor of the county, and waived the difference when it was in his favor.

The suggestions concerning exchange procedures which have been made with respect to state lands apply with equal force to county lands. They include strengthening of tax-forfeiture legislation and authorizing exchanges between the state and the counties.

As a further means of effecting consolidation, counties should be permitted to purchase public lands in addition to their present limited authority to purchase private lands.

LAND USE COMMITTEES

Every county, especially in the northern part of the state, should have a permanent land use committee which is giving continuing considera-

tion to the problems of land ownership, use, and management. These problems are of such basic importance and such complexity as to require study and recommendations by representatives of the various interests in the community, both public and private. In no other field is the "grass roots" approach so urgently needed. What happens to the community's land resources affects every one.

The land use committee would be essentially a fact-finding and advisory body without legislative or administrative authority. One of its main activities would be to stimulate studies of land ownership and management in the county, similar to that recently conducted by the Department of Conservation in Mahnomon County, with a view to identifying the strengths and weaknesses in the present situation and offering recommendations for its improvement. Such studies should be conducted and the recommendations made with the full participation of public officials, landowners, and the general public. This procedure would develop both differences and agreements in point of view, would help to iron out differences and to promote cooperative action, and would give weight to the findings of the committee. Most of the problems touched upon in this report would necessarily receive attention at the level where action should logically start, even though it may eventually involve legislators and administrators at St. Paul and Washington.

Among the subjects requiring consideration by the committee in which the county has a primary responsibility are land classification, memorial forests, and zoning. County boards are required by law to classify tax-forfeited lands as conservation or non-conservation areas, but replies to the county questionnaire indicate that such action has so far been taken by only 11 counties, all in the northeastern and central regions. The classification is supposed to be done with the advice of land classification committees consisting of the county auditor, the chairman of the board of county commissioners, the county treasurer, the county surveyor, and the county superintendent of schools.

These land classification committees might well be replaced by the proposed land use committees, which would include a wider representation of community interests and which would advise the county boards not only on land classification but on many related matters. Among these would be land sales and exchanges and the creation of memorial forests. Replies from the counties indicate clearly that memorial forests in general receive much more intensive management than other county conservation lands. Creation of more memorial forests under suitable conditions would therefore help to strengthen the counties' land management programs.

A subject which has so far received little attention but to which the land use committees might advantageously give serious consideration is

that of county parks. County reports show that only 11 counties now have county parks, with a total area of about 1,500 acres, of which some 1,200 acres (84 per cent) are in Hennepin, Houston, and Ramsey counties. The counties will almost certainly have to take more initiative in providing recreational opportunities if the future needs of the state in this field are to be adequately met.

In 1939 the legislature authorized "the county board of any county in which there is now or may hereafter be located a state forest or a federal forest, or a state conservation area, . . . to regulate and restrict within the county the location and use of buildings and structures and the use, condition of use or occupancy of lands for residences, recreation, agriculture, water conservation, forestry, and other purposes." Among the purposes of the zoning thus authorized are protection and guidance of the development of nonurban areas, conservation and development of natural resources, and prevention of soil erosion. The county board must act in conjunction with the town boards of the affected areas in determining the necessity of establishing zoned districts and prescribing regulations therefor.

The logic of limiting the authority to zone to certain classes of counties is not clear, but all of the counties in the distinctively forested portions of the state qualify under the restrictions imposed by the statute. Only eight of these counties have so far adopted zoning regulations, with by far the largest areas in Koochiching and St. Louis counties. The desirability of wider use of the zoning power of the counties, which was strengthened by an act passed in 1959, should receive careful study by the land use committees as a means of promoting the most intelligent use of land resources.

If the Natural Resources Council suggested later in this report is established, close relations should exist between it and the county land use committees. Among its other activities, the Council might well formulate general principles relating to land ownership, use, and management which the county committees would attempt to apply in the light of local conditions. Each body would be useful to the other in supplying information and ideas.

PRIVATE LAND PROBLEMS

DISTRIBUTION OF OWNERSHIP

The extent of private ownership, and its division between large and small owners, varies greatly in different parts of the state. Table 91 shows the area of commercial forest land by regions, with the percentage in different classes of ownership. The areas used are based on individual reports from the "large" private owners (5,000 acres or more) for 1958, and on Forest Service estimates for 1953 for the other classes of owners.

Table 91. Ownership of Commercial Forest Lands by Regions and Classes of Ownership.

REGION	AREA M ACRES	PER CENT BY CLASSES OF OWNERSHIP					TOTAL
		FEDERAL	STATE	COUNTY	LARGE PRIVATE ¹	OTHER PRIVATE ²	
Northeastern	13,938	21	23	23	6	27	100
Central	1,905	6	3	19	1	71	100
Northwestern	987	1	19	6	*	74	100
Southern	1,268	1	1	*	*	98	100
	18,098	17	19	20	5	39	100

* Less than 0.5 per cent.

¹ Owners of 5,000 acres or more, mostly industrial.

² Owners of less than 5,000 acres, chiefly farmers.

Source: Forest Service and individual reports from large private owners (unpublished data).

Large ownerships in 1958 showed a substantial increase over Forest Service estimates for 1953, which was subtracted from the area for "other private owners." This adjustment undoubtedly makes the figure for the latter class of ownership too small, but on a percentage basis the error is so slight as to be negligible.

Table 92 shows the distribution of large ownerships (5,000 acres or more) of commercial forest land by regions and by counties. In only two counties (Koochiching and Lake) does the percentage of land in large ownerships exceed 10 per cent of the commercial forest area in the county. Large ownerships are virtually non-existent in the northwestern and southern regions.

ADJUSTMENT OF HOLDINGS

These facts help to explain the claim frequently made by private owners, particularly in the industrial group, that their present holdings are too small, both relatively and absolutely. Expansion would, they believe, be not only to their advantage but would also be in the public interest. Since the situation differs with respect to the large industrial owners and others, they will be discussed separately.

INDUSTRIAL OWNERSHIPS. Of the 15 private owners of 5,000 acres or more of commercial forest land, eight indicated in 1958 that they would like to increase their current holdings. The desired increase amounts to nearly 275,000 acres, of which the pulp and paper industry would like to acquire about 80 per cent. The total proposed increase would add about 40 per cent to the area now held by the eight owners concerned. Assuming no decrease in the holdings of the other large owners, it would raise the holdings of the entire group of large owners from the present 4.9 per cent to 6.4 per cent of the commercial forest area of the state.

Table 92. Distribution of Commercial Forest Land in Large Private Ownerships (5,000 Acres or More) by Regions and Counties, 1958.

REGION AND COUNTY	ACRES	PER CENT OF COMMERCIAL FOREST LAND IN COUNTY	
		AREA ¹ PER CENT	PER CENT
Northeastern			
Aitkin	2,064	*	*
Beltrami	3,080	*	3
Carlton	12,382	1	3
Cass	24,691	3	2
Clearwater	3,278	*	1
Cook	56,909	6	8
Crow Wing	24,566	3	5
Hubbard	16,642	2	4
Itasca	56,777	6	4
Koochiching	201,502	23	13
Lake	158,135	18	14
Lake of the Woods	3,754	*	1
Pine	3,536	*	1
St. Louis	291,075	33	9
	858,391	97	6
Central			
Becker	3,958	*	1
Benton	190	*	*
Kanabec	175	*	*
Morrison	7,412	1	3
Otter Tail	100	*	*
Todd	3,247	*	2
Wadena	13,466	2	10
	28,548	3	2
Northwestern			
Roseau	80	*	*
Southern			
Stearns	159	*	*
State	887,178	100	5

* Less than 0.5 per cent.

¹ A large ownership often lies in more than one county; hence the ownership in one or more of these counties may be less than 5,000 acres.

Source: Reports from individual owners.

So far as the forest industries alone are concerned, the increase would be from 3.8 per cent to 5.4 per cent of that area. Some changes in plans have doubtless taken place since 1958, but it is doubtful whether they alter the general picture materially.

Naturally the proposed increase in industrial ownership does not

command universal support. Some of the opposing considerations may be summarized as follows:

1. Proponents point to the fact that most of the companies concerned now obtain only about 10 to 15 per cent of their wood requirements from their own land. They feel that an increase of this figure to 25 per cent or more is essential to guarantee stability through the continued availability of adequate supplies of raw materials. Opponents call attention to the fact that two pulp and paper companies in the state which own virtually no forest lands appear to have no concern about their future stability. The answer commonly advanced to this argument is that the companies in question are smaller than the others and that their requirements are confined chiefly to low-grade wood, of which an oversupply is available on both public and private lands — a situation which does not exist with respect to the higher grade materials.

2. Proponents feel that an increase in present holdings is necessary as a partial protection against possible excessive rises in stumpage prices. Opponents claim that any change in ownership which would give industrial owners more control over stumpage prices than they already possess is an argument against rather than for the proposed increase.

3. Proponents desire a larger area under their control as a means of assuring employment for "company" operators in times of slack demand for timber. Here again, opponents claim that the apparent advantage from the point of view of the owner is a disadvantage from the point of view of the public because more employment for "company" operators means less employment for the smaller local operators.

4. Proponents point to the current handling of their forest properties by industrial owners as evidence that any lands added to their holdings will receive intensive management which will result in increased yields of wood, more employment, and larger returns to the counties in the form of taxes. Opponents question the validity of this claim, which needs the further study suggested earlier in this report.

5. Proponents dispute the claim of opponents that industrial owners are willing to expand their holdings only by acquisition of the higher quality lands. They state that where good and poor lands are intermixed they are ready to take both, with due recognition of the fact that the larger the percentage of poor land the greater will be the area required to produce the desired proportion of their wood requirements.

Obviously the arguments are not all on one side. Taking everything into consideration, however, it seems that a substantial increase in industrial ownership would be desirable for two main reasons:

First, granted that the public interest is served by a division of ownership of forest and related lands between various classes of public and private owners — a premise which seems to be generally accepted by the people of Minnesota — the present division in the state is heavily over-

balanced in favor of public agencies. Moreover, the land in private ownership is held mainly by farmers and other small owners, with relatively little ownership by the forest industries. Table 93 compares the situation in these respects in Minnesota with that in several other states in different parts of the country.

Table 93. Percentage of Total Area of Commercial Forest Land in Different Forms of Private Ownership in Minnesota and Other States, 1953.

STATE	ALL PRIVATE	FOREST INDUSTRIES	LARGE OWNERS (5,000 ACRES OR MORE)	SMALL OWNERS (LESS THAN 5,000 ACRES)
Minnesota	44	3 ¹	4	40
Wisconsin	70	6	15	55
Michigan	66	8	19	47
Maine	99	40	64	35
New York	92	10	14	78
Pennsylvania	79	3	8	71
West Virginia	90	3	25	65
North Carolina	91	14	15	76
Louisiana	89	27	43	46
Arkansas	85	21	24	61
Montana	31	7	8	23
Idaho	22	9	9	13
Washington	50	46	25	25
Oregon	39	18	18	21
California	47	20	31	16

¹ Changes since 1953 have increased this figure to 3.8 per cent.

Source: "Timber Resources for America's Future" (162).

Second, the forest industries, by the improved methods of forest management adopted during the last ten or fifteen years, have demonstrated both their intention and their ability to practice sustained forest production. By and large, their performance compares favorably with that of public agencies and is much superior to that of smaller owners. Expansion of their holdings would help to assure both good management of the lands involved and the stability of the industries.

The scale of the expansion proposed by the forest industries would hardly give them any more control over stumpage prices than they may already have. If all of the expansion were to take place in the north-eastern region, they would still possess only 8 per cent of the land in that region. Nor is it likely to have any seriously adverse effect on the employment of local operators in view of the probable increase in the demand for forest products, with consequently increased opportunity for employment in logging operations. Adequate safeguards should be provided to assure satisfactory management of the lands transferred to

private ownership. As has been stressed repeatedly, any building up of industrial holdings should be so effected, after careful study by all concerned, as to result in consolidations of advantage to both private and public owners.

This situation raises the question not only of the location but also of the sources of the lands to be acquired by the forest industries. Although some of them will undoubtedly come from lands in other private ownership, the bulk of them will probably have to come from lands now in public ownership. Outside of the limited area available in the public domain and lands held in trust for the Indians, federal lands appear to be largely out of the picture except through the exchange process. By far the largest area is in the national forests, where no authority for their sale exists or is likely to be granted by Congress, except possibly for minor adjustments.

As between county and state lands, the former occupy the larger area, their present management is less intensive, and policies are in an earlier stage of development. Their greater availability does not, however, mean that sale of state lands is either impracticable or undesirable. The large areas of both county and state lands and their scattered distribution raise difficulties of administration and management which might be eased by transferring a substantial but still relatively small acreage to other ownership. If the entire 275,000 acres which industry desires to acquire were to come from county and state holdings, it would reduce those holdings only from 39 to 38 per cent of the commercial forest area of the state.

In connection with this entire problem the following declaration by the 1959 legislature (Chapter 348) is of interest: "Except as ownership of particular tracts of land should be held by the state or its subdivisions for a recognized public purpose and public access, it is the general policy of this state to encourage return of tax-forfeited lands to private ownership and the tax rolls through sales, and classification of lands according to this chapter is not in contravention of this policy." OTHER OWNERSHIPS. The situation of other private owners is similar in some respects but very different in others. In the northern region these owners are a diverse lot, and their reasons for acquiring or holding on to forest lands are often obscure. Lynn Sandberg, a forester who has had much experience with this group, makes the following comments concerning it:

"There are almost as many reasons for landowners to continue to hold land as there are individuals owning such land. . . . The supervisor of a national forest in Idaho owned a quarter section which he had not seen for several years. Apparently his reason for owning the land stemmed from a feeling that even foresters in public employ should have

a stake in private forest enterprise. . . . One owner held several thousand acres of widely scattered descriptions acquired through legal procedure from a bankrupt lumber company. When he was unable to get tax reductions, he allowed $\frac{7}{8}$ of his interest to forfeit to the state for non-payment of taxes. By retaining the $\frac{1}{8}$ fraction, he prevented the state from selling any timber or land without great difficulty and expense. He hoped that some day values would be found which would enable him to redeem the state's $\frac{7}{8}$ interest. Now his widow is allowing the $\frac{1}{8}$ interest to go tax-forfeited because of the burden of paying taxes even on that small interest. . . . Along the iron range of Minnesota, many ownerships including some very small fractions are being held by people who hope for mineral development some day. . . . Much of the absentee ownership of forest land seems to stem from a dogged determination to hang on at any cost."

Some additional reasons which might be mentioned include an interest in Christmas tree production and in having a "forty" for a deer-hunting shack.

In many instances the interests both of the public and the owner (particularly if a nonresident) would be best served by selling his property to either a public agency or to another private owner in a better position and with the ability to manage it effectively. In other instances, expansion of the present owner's holdings would be desirable to provide him with a forest property of sufficient size to afford him a comfortable living either by itself or in conjunction with farming operations which alone are inadequate to do so. Such expansion would probably not involve so large an area as in the case of the forest industries, and it cannot be opposed on the ground that it would tend to increase stumpage prices or to decrease local employment. On the other hand, there is less assurance of intensive sustained-yield management.

Additions to non-industrial holdings could come from either county or state lands. They should be preceded by careful studies of the needs of individual owners and of their probable performance as forest managers. Studies are also needed of the areas of forest land alone, and of forest and farm land combined, required to provide a satisfactory livelihood under different conditions of soil, climate, and location. More information as to the motives and practice of non-industrial owners would likewise be helpful.

Outside of the northeastern region, there seems to be no need for any substantial expansion of private ownership of forest and related lands, although minor adjustments and consolidations will always be in order. In some of the southern counties, further reductions in the forest area may even be desirable. Here the problem is one of allocating land to different uses with due regard to economic and esthetic values (including parks), watershed protection, and control of soil erosion.

EXPANSION OF MARKETS

Minnesota is in the unusual position of having an annual cut of timber which is less than either the net annual growth or the allowable cut. This is true with respect to both sawtimber and growing stock, and both softwoods and hardwoods (Table 94 and Fig. 52). The discrepancy is most conspicuous in the case of aspen and is less marked with the more valuable species.

State-wide figures, however, tend to obscure the fact that overcutting of jack pine, spruce, and balsam fir is taking place in most of the counties outside of the Superior District and the Lake of the Woods area. Table 95 shows that outside of Cook, Lake, and St. Louis counties the actual cut of these valuable pulpwood species is approximately 27 per cent more than the allowable cut, and that with jack pine and spruce it is 39 per cent more than the allowable cut.

The situation points to the need of finding additional markets for aspen throughout the state, of enlarging the cut in the Superior District, and of increasing net growth (and hence allowable cut), particularly

Table 94. Net Annual Growth, Allowable Cut, and Actual Cut on Commercial Forest Lands, 1953.

	ANNUAL GROWTH ¹ MIL. BD. FT.	ALLOWABLE CUT ² MIL. BD. FT.	ACTUAL CUT ³		
			MIL. BD. FT.	PER CENT OF ANNUAL GROWTH	PER CENT OF ALLOWABLE CUT
Sawtimber					
Softwoods	329	223	138	42	62
Hardwoods	459	301	124	27	41
	788	524	262	35	50
	MIL. CU. FT. ⁴	MIL. CU. FT. ⁴	MIL. CU. FT. ⁴	PER CENT	
Growing stock					
Softwoods	118	95	78	66	82
Hardwoods	267	152	76	28	50
	385	247	154	40	62

¹ The change during a specified year in net volume of live sawtimber or growing stock resulting from natural causes exclusive of catastrophic losses.

² The volume of live sawtimber or growing stock that can be cut during a given period while building up or maintaining sufficient growing stock to meet specified growth levels.

³ Includes timber products and logging residues.

⁴ Cubic feet can be converted to cords on the basis of 80 cubic feet per cord.

Source: "Minnesota's Forest Resources" (39).

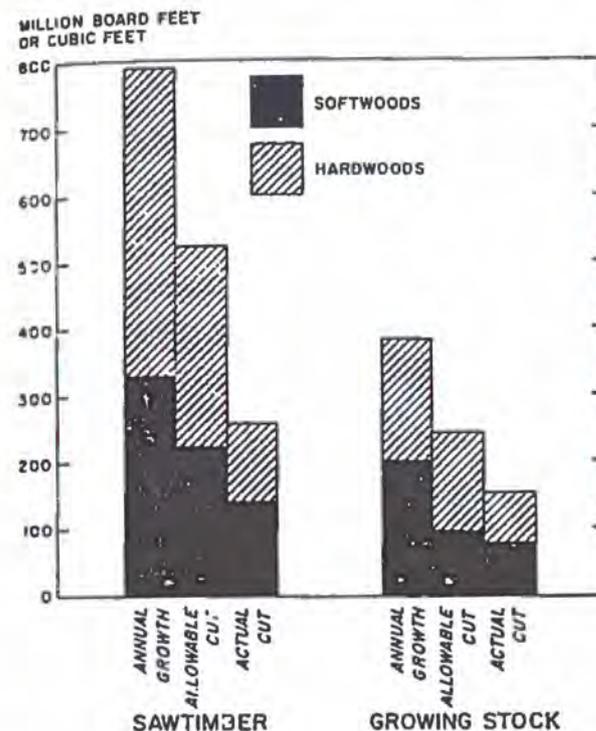


Figure 52. Annual growth, allowable cut, and actual cut of sawtimber and growing stock, 1953.

Table 95. Per Cent Which Actual Cut of the Principal Pulpwood Species Constitutes of the Allowable Cut by Districts, 1953.

SPECIES	ACTUAL CUT IN PER CENT OF ALLOWABLE CUT		
	STATE	SUPERIOR DISTRICT ¹	ALL OTHER DISTRICTS
Softwoods			
Jack Pine	85	53	139
Spruce	94	62	139
Balsam Fir	74	44	101
	—	—	—
Average	86	54	127
Aspen	49	40	52
	—	—	—
All Pulpwood Species	65	49	77

¹ Cook, Lake, and St. Louis counties.

Source: "Minnesota's Forest Resources" (39).

of pine and spruce, the demand for which is certain to expand. Increased utilization and increased growth go hand in hand as basic needs. Any action, public or private, which will advance these two objectives will contribute to the prosperity of the region.

The importance to the state of making greater use of both the present and the potential productivity of its forest lands is generally recognized. So, too, is the importance of technical and economic research that will pave the way for increased production and more complete utilization. Generally overlooked is the possibility that expansion of the holdings of the forest industries, by providing greater assurance of continuing supplies of raw material, might encourage them to increase their output and thus help to reduce the present surplus of growth and allowable cut over actual cut. Likewise, prospective new wood-using industries can hardly be expected to make heavy investments in plant and equipment without ownership of sufficient forest land to supply a reasonable proportion of their wood requirements. How such ownership might be acquired is part of the problem of the extent to which county and state lands might advantageously be transferred to private ownership.

TAXATION

In 1858 when Minnesota became a state, the general property tax provided almost all of the revenue for all units of state and local governments. Since then many other forms of taxation have been introduced, but in 1953, according to the report of the Governor's Minnesota Tax Study Committee (1956), all of the tax revenue raised by local governments still came from the general property tax. Of the total revenue (tax and nontax) received by local governments, 43 per cent came from the real property tax, 12 per cent from the personal property tax, 32 per cent from state aid, and 13 per cent from miscellaneous sources.

The prominent position still occupied by the tax on real property in supporting the activities of local governments poses serious problems both for them and for the landowner. Governments must raise sufficient funds to finance the ever-increasing demand for public services, but levies must remain within the tax-paying capacity of the land or it will not continue in private ownership. As was pointed out in the chapter dealing with the evolution of land ownership, this fact was generally ignored in the forested counties of northern Minnesota, where cutover lands with relatively low productive capacity and little or no current income were assessed for tax purposes on the basis of their assumed and greatly exaggerated value for the production of farm crops and animals. At the same time ambitious programs were undertaken for such improvements as roads, schools, public buildings, and drainage projects. High valuations and high tax rates inevitably led to extensive tax delinquency and tax forfeiture.

In this connection, note should be taken of the differential treatment of various kinds of property for tax purposes. Under the property classification law of 1913 (Ch. 483), property was divided into four classes with ratios of assessed values to full and true values ranging from 25 per cent on household goods to 50 per cent on mined and unmined iron ore. Subsequent amendments have increased substantially the number of classes of property and have made numerous changes in the ratios of assessed values to full and true values. In the case of forest properties this ratio remained at 33 $\frac{1}{3}$ per cent from 1913 until 1955. It was then reduced to 20 per cent for "rural real estate used exclusively for the purpose of growing trees for timber, lumber, wood, or wood products."

This preferential treatment is offset in part at least by the fact that the "full and true value" placed on forest property by assessors is commonly much closer to its market value (the usual selling price) than is the case with other rural property, notably agricultural land. The discrimination is difficult to correct, since "full and true value" is legally defined as market value, although in practice it is usually much less, in extreme cases as much as 80 per cent less. Any valuation of forest property up to the market value can therefore be justified by the assessor irrespective of the treatment of other classes of property.

By the 1920's the situation with respect to tax delinquency in the forested counties had become so serious that something had to be done about it. In Minnesota, as elsewhere, it was becoming recognized that the general property tax is not an equitable means of raising revenue from forest lands which are not on a sustained-yield basis, as none of them were at that time, and that it imposes a particularly heavy burden on cutover lands. The popular remedy was to replace the property tax on forests by an annual tax on the land and a yield tax on the timber when cut.

The 1923 legislature attempted to meet the situation by proposing an amendment to the Constitution authorizing the enactment of legislation "for the purpose of encouraging and promoting forestation and reforestation of lands in this state, whether owned by private persons or the public, including the fixing in advance of a definite and limited annual tax on such lands for a term of years and a yield tax at or after the end of such term upon the timber and other forest products so grown, but the taxation of mineral deposits shall not be affected by this amendment." The proposed amendment was rejected by the people at the 1924 general election, was resubmitted by the legislature the next year, and was approved by the people at the 1926 election as Article XVIII of the Constitution.

AUXILIARY FOREST TAX LAW. The 1927 legislature responded promptly by passage of the auxiliary forest tax law. In essence, the law provided for an annual tax of 8 cents per acre and a yield tax of 10 per cent on

lands dedicated to forest production under a contract with the state plus a tax of 3 cents per acre for fire protection purposes. No attempts were made by forest owners to take advantage of the law, and in 1929 the annual land tax was reduced to 5 cents per acre. This amendment led to an application by the Northwest Paper Company for registration of more than 100,000 acres of recently cutover land in St. Louis County. Such bitter opposition to its acceptance developed that it was withdrawn by the company. Later most of the land involved was tax forfeited and is now a part of St. Louis County's Cloquet Valley Memorial Forest.

Nothing further happened until 1942, when 560 acres were at last registered as an auxiliary forest. Meanwhile the Forest Service, because of the influence of taxation on forest management, had undertaken and completed a nationwide study of the subject. Investigations in Minnesota gave statistical confirmation of the well-known fact that assessed values of forest lands in the northern counties were relatively high with respect both to their sale values and to the assessed values of farm lands (Table 96). They also showed that in six northeastern counties the ratio of tax-delinquent area to taxable area was higher with small owners than with large owners. The situation did not improve during the 1930's, non-use of the auxiliary forest law gave no relief from that quarter, and tax forfeitures continued to mount.

For the country as a whole, the Forest Service study pointed out that the tax problem resolves itself into two parts: (1) the total burden of taxation, and (2) the distribution of this burden among the several taxpayers. "Forest taxes are bound to be high so long as costs of local

Table 96. Relation of Assessor's "True and Full Value" to Taxation Study's "Appraised Value" in Selected Towns, 1926.

TOWN AND COUNTY	FARM LAND	CUTOVER LAND,	CUTOVER LAND,
		SMALL HOLDINGS	LARGE HOLDINGS
		PER CENT	
Eckles, Beltrami	88	141	—
Frohn, Beltrami	78	175	215
Hagali, Beltrami	121	278	—
Clay, Hubbard	192	291	301
Crow Wing Lake, Hubbard	104	296	—
Lake Emma, Hubbard	115	191	203
Schoolcraft, Hubbard	183	304	336
T 59 N, R 8 W, Lake	38	90	95
T 54 N, R 10 W, Lake	68	129	133
Embarrass, St. Louis	26	63	79
Toivola, St. Louis	51	111	180

Source: Forest Taxation Inquiry, Forest Service (57).

government are high." Careful consideration was recommended of measures for reducing these costs through reorganization of local government, disorganization of local governments in sparsely settled areas, and control of further land settlement; through redistribution of governmental functions, analysis and coordination of governmental services, and their curtailment where the service appears not worth the cost; through improved administration of local government, better financial practices, state supervision and guidance, and more effective popular control.

As regards the general property tax and its modification, the study reached the following general conclusions, mostly negative in character:

1. Assessments fixed by statute and specific taxes of so much per acre fixed by statute are not recommended.
2. Special methods of taxation imposed in accordance with a classification of properties based upon the intentions of their owners are not advised.
3. Special forest-tax laws should be of general application, without requiring any unusual initiative on the part of forest owners.
4. Tax measures in favor of forestry should not be given the character of a contract between the state and the taxpayer for the sake of protecting a present law from amendment by a future legislature.
5. Special tax subsidies to forests are not recommended, either as compensation for regulatory requirements, which could better be provided by direct means, or as inducement to adopt particular measures of forest practice.
6. The combined land-tax yield-tax plan appears distinctly inferior to other possible solutions of the problem, and it is therefore not recommended.

On the positive side, the study concluded that continued application of the general property tax to forest lands is desirable. It recognized, however, that under certain conditions, which are of common occurrence, the property tax imposes an inequitable burden on forest lands. It therefore recommended modification of the tax by any one of three plans which it designated as the adjusted property tax, the deferred timber tax, and the differential timber tax. None of these proposals has enjoyed any wide acceptance.

Minnesota has continued to tinker with the auxiliary forest law in the hope of making it more acceptable both to landowners and to local governments. Amendments were adopted in 1945, 1947, 1949, 1953, 1955, 1957, and 1959, the chief effects of which were to increase the land tax first to 6 cents and then to 10 cents per acre; to abolish the tax of 3 cents per acre for forest fire protection; to reduce the minimum size of areas which may be registered; to provide for the separate taxation of

merchantable timber on the tract at time of application; to consolidate two or more auxiliary forests in the same county and under the same ownership; and to permit the placing of auxiliary forests under the operation of the tree growth tax law.

As the auxiliary forest tax law now stands, it provides for the registration as auxiliary forests of commercial forests containing not less than 35 acres and of woodlots containing not less than 5 nor more than 40 acres, under contract with the state approved by the county board, the Commissioner of Conservation, and the Executive Council. The forest must be managed and the timber removed in accordance with instructions received from the Commissioner of Conservation. It constitutes a public hunting and fishing ground which may be closed by the director of the Division of Forestry in order to provide protection against fire or danger to life; but private roads and improvement are not open to public use.

Auxiliary forests pay an annual land tax of 10 cents per acre and a yield tax of 10 per cent on the stumpage value of the timber when cut. The yield tax may, however, be prepaid in annual installments based on the estimated volume and value, by species, of the merchantable timber produced each year upon application by the owner and approval of the county board. Merchantable timber on the tract at the time of application is subject to a yield tax of 40 per cent if cut during the first year following the signing of the contract, with a reduction of 2 per cent for each succeeding year until the basic 10 per cent is reached.

Table 97. Area of Auxiliary Forests by Counties as of December 31, 1958, with Taxes Paid During 1958.

COUNTY	ACRES	LAND TAX	YIELD TAX	TOTAL TAX
Anoka	120	\$ 8	\$ 80	\$ 88
Becker	1,893	192	15	207
Carlton	1,117	112	—	112
Cass	3,828	230	—	230
Clearwater	160	16	—	16
Hubbard	6,968	697	343	1,040
Itasca	32,098	3,209	943	4,152
Kanabec	200	20	—	20
Koochiching	133,884	13,297	6,254	19,551
Mille Lacs	80	7	—	7
St. Louis	46,958	4,696	1,224	5,920
Stearns	171	17	78	95
	227,477	\$22,501	\$8,937	\$31,438

Source: Department of Conservation, Division of Forestry (unpublished data).

Contracts run for 50 years and are renewable for another 50 years. At the request of the owner and approval of the county board the auxiliary forest contract may be canceled and the land entered under the tree growth tax law.

Table 97 shows by counties the total area in auxiliary forests as of December 31, 1958, and the taxes paid during 1958. The area now under contract, which constitutes only 6 per cent of the commercial forest land in private ownership in the 12 counties involved, is not impressive. Distribution is still less so, with 90 per cent of the total area in Itasca, Koochiching, and St. Louis counties, and 59 per cent in Koochiching County alone. Total taxes paid on auxiliary forests during the period from 1942 to 1958, inclusive, amounted to \$178,518, of which 75 per cent was in the form of the land tax and 25 per cent in the form of the yield tax.

It is evident that with the single exception of Koochiching County auxiliary forests have not played a part of any considerable importance from either the fiscal or the forestry points of view. Nor are they likely to do so in the future, particularly in view of the existence of the more promising tree growth tax law. Some of the many reasons for the failure of the auxiliary forest tax law to achieve more constructive results are discussed in the 1957 report to the legislature of the Legislative Interim Commission to Study Forestry, which found that Koochiching County was the only county where satisfaction with the law was expressed.

TREE GROWTH TAX LAW. The tree growth tax law passed by the 1957 legislature embodies an approach to the problem of forest taxation which is new not only in Minnesota but in the United States. It starts out with the unqualified statement that "the present general system of ad valorem taxes in the state of Minnesota as applied to forest lands does not provide an equitable basis of taxation and has resulted in inadequate taxes on some lands and excessive tax forfeiture on other lands."

"Therefore," the act continues, "it is the declared public policy of this state that the public interest would be best served by encouraging private forest landowners to retain and improve their holdings of forest lands upon the tax rolls of the state and to promote better forest management of such lands by appropriate tax measures, therefore, this act is enacted for the purpose of permitting privately owned lands generally suitable for the planting, culture and growth of continuous forest products to be taxed on the basis of the annual increase in value in accordance with the following provisions."

Productive forest lands accepted for registration under the act pay an annual tax of 30 per cent of the stumpage value of the estimated average

annual growth by forest types. Temporarily non-productive forest types are taxed 5 cents per acre per year, provided the owner complies with his agreement to reforest the land within the time specified. In the event of non-compliance, the land is subject to a tax of 15 cents per acre per year. Permanently nonproductive lands pay a tax of 5 cents per acre per year.

For each acre of land planted and maintained with a minimum of 500 trees of commercial species the owner is allowed a credit of 50 cents per acre per year against his taxes on other lands within the same governmental subdivision in which the planting is done. When the plantation is 10 years old, it is classified and taxed as a commercial forest type and the credit ceases. No credit is earned by plantations in which the trees are being grown for ornamental purposes.

Applications for placing forest lands under the provisions of the act are made to the county board, which takes final action on them. If the board fails to act in 90 days, the application goes to the Commissioner of Taxation, who passes upon it with all of the powers of the county board. There is no contract, but the application must contain a sworn statement that: "While the land is under the Tree Growth Tax law it will be used exclusively for the growing of continuous forest crops in accordance with sustained yield practice and will be open to use by the public for hunting and fishing except within one-fourth mile of a permanent dwelling or during periods of high fire hazard as determined by the commissioner of conservation."

The average annual growth rates determined by the county board are to be reviewed in 1966 and at the end of every ten years thereafter. Stumpage values are to be computed in each even-numbered year. The original limitation to 10,000 acres on the land that an owner might have under the act in any one county was removed in 1959. Provision is made for the withdrawal of lands from taxation under the act on the initiative of either the owner or the county board.

The tree growth tax law is on sound ground in basing the tax on the productive capacity of the land. In practice, however, the requirement that growth rates by types and stumpage values by species shall be uniform throughout a county means that only those owners whose lands have these growth rates and stumpage values will actually be taxed on their true productive value. Owners with lands averaging better than the county average will gain and those with lands averaging less will lose. The law is much simpler than the auxiliary forest tax law in many respects, notably in permitting final action on applications by the county board. Whether making all listed lands public hunting and fishing grounds is a desirable provision is open to question; and disagreement is bound to exist as to whether the 30 per cent tax is too high or too low.

All in all, the law constitutes an imaginative attempt to meet a difficult problem in a constructive way. It deserves a thorough trial, with genuine effort on the part of both landowners and county boards to make it work, and with readiness to iron out any wrinkles that experience may uncover.

ANOTHER APPROACH. The Wisconsin legislature in 1959 enacted a law (Chapter 258) which suggests still another method of easing the burden imposed on forest property by the unmodified general property tax. This law applies to "forest lands which are directed by Congress and required by federal law to be operated on a sustained-yield basis as a condition to termination of federal trusteeship over such lands." The obvious reference is to the Menominee Tribal Forest established as a result of the act of June 17, 1954 (68 Stat. 250) providing for the orderly termination of federal supervision over the members and property of the Menominee Indian Tribe in Wisconsin. The value of the lands falling within the category described in the law (that is, the tribal forest) is determined by the assessor on the same basis as other forest lands. They are then assessed for taxation purposes at 40 per cent of that value.

"Sustained-yield management," according to the law, "means that the lands taxed under this section shall be operated in a manner which will provide for a continuous annual harvest of high quality forest products on a permanent basis. Cutting practices shall be such as to improve the quality of the residual stand and increase the productive capacity of the lands on a permanent basis. 'Sound forestry practices' mean those timber cutting, transporting, and forest cultural methods which will best propagate and improve the various forest types. Such practices shall be those which are recommended by the conservation commission for the various timber types common to Wisconsin and which are used by the conservation commission on lands under its jurisdiction."

A forest management plan providing for the handling of the lands in accordance with these principles must be submitted to and approved by the Conservation Commission to enable the owner to take advantage of the reduced assessment provided by the law. Final decision as to whether the lands are eligible and qualify for taxation under the law is made by the Commissioner of Taxation. Annual reports of operation must be submitted to the Conservation Commission. A new or revised plan must be submitted to the commission for approval not later than six months prior to the end of each cutting cycle.

The legislature's reason for passage of the act was stated as follows: "The economic value of forest lands which are required to be operated on a sustained-yield basis is substantially less than the value of those same properties without such restriction and where forest lands are required by law to be operated on a sustained-yield basis, the effect of

such restriction on full market value should be recognized for tax purposes." In effect, this statement indicates the belief of the Wisconsin legislature that the influence of sustained-yield management on the value of a forest property should be recognized for tax purposes if such management is required by law but not if it is voluntary. In the case of the Menominee Tribal Forest the requirement is imposed by federal law, but the same treatment would presumably be applied if a similar requirement on all forest property were to be imposed by state law.

Sustained-yield forestry is generally recognized as being in the public interest. The question then arises as to why tax legislation should not be so framed as to encourage rather than to discourage its practice. That such encouragement is needed is indicated by the relatively higher tax paid by the private owner of a sustained-yield forest under present assessment practices. The assurance of a continuous and permanent supply of timber enjoyed by such an owner is in part at least offset by the disadvantage of having to pay a tax on an assessed value in excess of the true value of the property. (The Wisconsin legislature has placed the true value of a sustained-yield forest at 40 per cent of its market value.)

This situation could be met by the passage of legislation which would provide for the assessment of forest lands on the basis of their value as influenced by the character of their management. The stimulus which such treatment would offer forest owners to practice sustained-yield management is obvious. Assurance that lands alleged to be under such management are actually being so managed could be obtained by requiring the submission of specific management plans which would be subject to approval by the Commissioner of Conservation. While it is doubtful that the value of such forests would often be as small a percentage of their value if operated on a liquidating basis as Wisconsin estimates, there would usually be some real advantage to the taxpayer, and the advantage to the community of having the forest operated under sustained-yield management would more than compensate for the loss of tax revenue resulting from the lower valuation. Aside from the consideration of equity, the plan would have the virtue of encouraging improved forest practice within the framework of the general property tax.

OUTLOOK. Except in one county, neither forest owners nor the counties have shown any marked enthusiasm for the auxiliary forest law. Prospects for its widespread application do not appear bright. The tree growth tax law offers more promise, but it is still too early to know how generally and how effectively it will be used. In view of the declaration by the 1957 legislature that the present system of ad valorem taxes "does not provide an equitable basis of taxation" as applied to forest land, its objective was presumably to replace that system so far

possible by a more equitable one. To what extent is that purpose likely to be accomplished when there is no compulsion on either landowners or counties to make use of the law? Does it offer enough advantages to both groups to cause its ready and widespread acceptance?

The main criticisms of the general property tax are: (1) that it must be paid annually whether or not there are any receipts from the property, and (2) that it imposes an unduly heavy burden on forest lands both absolutely and in relation to other classes of real property. How far does the growth tax go toward improving the situation in these respects? So far as the first criticism is concerned, the new tax like the property tax still has to be paid annually irrespective of income. With both forms of taxation, the criticism loses its validity when, and only when, forests are managed on a sustained-yield basis so as to provide a steady annual income.

How far the growth tax goes toward meeting the second, and usually the more important, criticism depends on the extent to which it reduces the amount payable under the general property tax. If the reduction is small or nil, the new system is not likely to appeal to the landowners; if it is large, the counties will be unhappy.

From the standpoint of the landowner, the limitation of the tax to 40 per cent of the estimated value of the annual growth clearly protects him from the possibility, which is too often an actuality, that the general property tax may not only take a much larger percentage of that value but may actually exceed it. On the other hand, a 30 per cent tax on gross income can hardly be regarded as unduly generous to the taxpayer. If actual costs, exclusive of taxes, constitute 50 per cent of gross income, which is probably a conservative figure, the owner retains only 20 per cent to compensate him for risk and interest on his investment. If costs equal 70 per cent of gross income and taxes take 30 per cent, there is no net income; and if costs exceed 70 per cent of gross income, the landowner suffers a net loss.

From the standpoint of the county, the protection of the landowner from excessive taxation, which at times may amount to virtual confiscation, should also prove advantageous. No matter how badly a community may need tax income, it cannot long take all or the greater part of the gross income produced by a property without forcing that property into public ownership through tax forfeiture. History leaves no doubt on this score. In the long run, local governments will benefit by receiving permanently a steady tax income which approximates the amount that forest lands can reasonably pay in view of their productive capacity. The objective of the growth tax is to provide such an income. Any apparent advantage from larger collections under the general property tax which are in excess of the tax-paying ability of the land will prove to be only temporary; the flow of income will soon be interrupted by tax

delinquency and presently stopped by tax forfeiture. Receipts from county management will then replace taxes. Irrespective of the relative merits of private and county ownership, few people believe that the latter should be expanded beyond its already large size by a tax policy that inevitably leads to tax forfeiture.

A point to be remembered in this connection is that much of the excessive burden commonly imposed on forest lands by the general property tax is the result of faulty administration — largely in the form of overvaluations and high tax rates. The basic principle underlying the tree growth tax — that the tax on forest land should be determined by its productive capacity — could also be used with the general property tax. All that would be necessary would be to determine the value of the land for tax purposes by capitalizing the net income after taxes at an appropriate rate of interest. In other words, there is theoretically no reason why the general property tax could not be so administered as to give the same results as a growth tax, which is essentially a yield tax; but the apparent simplicity of the latter may make it a more practical method of attaining the same end.

Forest taxation, whatever the method used, constitutes a part of the basic and difficult task of balancing county expenditures and county receipts. If the cost of public services of all kinds continues its upward trend, financial solvency can be maintained only by reducing costs through more efficient administration or by increasing receipts, primarily through taxes and state aid. Forests and related lands will of course have to carry their fair share of the tax burden, but it is important that the taxes which they pay should be neither confiscatory nor out of line with those paid by other classes of property.

Altogether, the problem of forest taxation is likely to require intensive and continuing consideration for a long, long time.

MINERAL RIGHTS. The taxation of mineral lands and of the mining industry (occupation tax) was not within the scope of the present study. The treatment of mineral rights in forest and related lands which are not clearly mineral in character does, however, fall within its purview. The existence of such rights is widespread, since it has become almost universal practice for both public and private owners to reserve mineral rights in lands to which they part title by sale or exchange, irrespective of the character of the lands. With respect to state lands, such reservation has been required since 1901 (Minn. Laws, Ch. 104).

Holders of mineral rights pay no taxes until minerals are actually discovered, when the minerals (not the rights) become taxable. Nor do they have to take any action, such as annual or periodic registration, to keep their rights permanently in force. Meanwhile, the owner of the land surface is under the constant threat of having his plans of management upset by discovery and exploitation of underlying minerals.

This situation could be materially improved by requiring the holders of mineral rights to register them annually, with payment of a nominal fee, in order to keep them in force. Failure to register or to pay the fee should then result in forfeiture of the mineral rights to the surface owner. Such a procedure would protect the surface owner from the continuance of subsurface rights which the holder did not value sufficiently to justify payment of a small annual fee in order to keep them in force. It would also yield a small revenue to the county and would greatly simplify title search and title evaluation.

PUBLIC CONTROL

BACKGROUND. Public control of cutting on forest lands in private ownership has been a constant and at times highly controversial issue since 1919, when both the Forest Service and the Society of American Foresters proposed action to that end. During the early 1920's several bills incorporating the principle of federal control, and also the principle of state control with federal cooperation, were introduced in Congress but failed of passage. Then in 1933 the Code of Fair Competition for the Lumber and Timber Products Industries seemed to offer a means of attaining the same objective by a different route. Article X of that code pledged the industries, "in cooperation with public and other agencies, to carry out such practicable measures as may be necessary for the declared purposes of this Code in respect to conservation and sustained production of forest resources."

After two national conferences between public and private agencies, an amendment to the code was approved by the President on May 23, 1934, which provided that each division and subdivision of the industry having jurisdiction over forest-utilization operations should establish an agency to formulate rules of forest practice and to exercise general supervision over their application and enforcement. The rules were to include "practicable measures to be taken by the operators to safeguard timber and young growing stock from injury by fire and other destructive forces, to prevent damage to young trees through logging operations, to provide for restocking the land after logging if sufficient advance growth is not already present, and where feasible, to leave some portion of merchantable timber (usually the less mature trees) as a basis for growth and the next timber crop."

Since the rules of forest practice were subject to approval by the Lumber Code Authority, they constituted, in effect, an indirect form of federal control.

There was great variation in the speed with which such rules were adopted and put into effect in different regions. Among the more deliberate of the agencies responsible for the formulation of the rules were the Northern Pine Manufacturers Association and the Northern Hemlock and Hardwood Manufacturers Association. These two groups pro-

ceeded so slowly that no definite proposals were submitted to the Lumber Code Authority for approval prior to May 27, 1935, when the National Industrial Recovery Act was invalidated by the Supreme Court as an unconstitutional delegation of legislative power.

Voluntary action in the direction of self-regulation was then strongly encouraged by several regional organizations, notably in the West and the South, but not in the Lake States. Legislation providing for federal control continued to be advocated by the Forest Service during the 1930's and 1940's without success.

MINNESOTA LEGISLATION. Meanwhile, public control at the state level attracted increasing interest. Several states, including Minnesota, actually enacted regulatory legislation. The major provisions of the Minnesota law, passed in 1943 and amended in 1945, are as follows:

No spruce, balsam, jack pine, or tamarack shall be cut unless two or more 100-inch sticks can be cut per tree and the tree has a stump diameter of six inches or more inside the bark at 16 inches above ground level. On each acre cut over there shall be left at least eight thrifty trees of the minimum diameter or larger of the predominant species as seed trees, but the cutting of Christmas trees is not prohibited.

No white or Norway pines shall be cut which do not have a stump diameter of 10 inches or more inside the bark at 16 inches above ground level. On each 40-acre tract from which pine timber is taken, eight or more such pine trees with a stump diameter of 10 inches or more, 16 inches above ground level, shall be left.

No birch, maple, or oak shall be cut which do not have a stump diameter inside the bark of 10 inches or more.

The law does not apply to operations where land is being cleared by bona fide farmers for actual agricultural use, or by bona fide owners of cottage sites, or to the cutting of cordwood for firewood. Violation is punishable by a fine of not less than \$10.00 nor more than \$100.00, or by imprisonment in the county jail for not less than 30 days nor more than 90 days. The Director of the Division of Forestry is authorized, where conditions permit, to grant special permits modifying the cutting regulations. He is also empowered to make such rules and regulations for the disposal of slash as in his judgment will afford adequate protection against fire hazards and leave the land in a productive state.

From the outset the law has been criticized on the ground that its provisions are so mild as to have little effect on current cutting practices, and still less in assuring satisfactory restocking of cutover lands. Some wag described it as forbidding the cutting of trees which are not merchantable. Even so, the Department of Conservation found sufficient violations to warrant prosecution in 23 cases between 1944 and 1949. The results may be summarized as follows:

Not guilty — 3 cases.

Jail sentences — imposed in 3 cases for a total of 80 days, no time actually served.

Fines — imposed in 20 cases to a total of \$960.00, of which only \$630.00 (66 per cent) was actually paid.

Court costs — imposed in 19 cases to a total of \$81.97, most of which was paid.

No prosecutions have been brought since 1949 because of the difficulty of obtaining convictions. All that the defendant has to do is to claim that the land is being cleared for agricultural purposes, and the case is thrown out of court. Evidently the law in its present form has outlived whatever usefulness it may once have had. Its repeal or major amendment is clearly in order.

The continuation of some form of regulatory legislation seems desirable. In spite of the progress that is being made in the adoption of improved methods of cutting, particularly by the pulp and paper industry, there is still a large area of forest land in all parts of the state which is not being so handled as to assure future crops whose yield will begin to approach the potential productivity of the land. State action to remedy this situation would be in the long-run interest of the owners as well as of the general public.

One of the most constructive aspects of public control is its educational effect. It forces owners to give thought to the problems of forest management and calls their attention to the fact that there may be more profitable methods of management than those which they are currently using.

A promising device for maximizing this educational effect, and at the same time for protecting the public interest, is to place control of cutting practices in the hands of county boards consisting of representatives of the county, the state, the forest owners, and the general public. Such a board would be in a position to enact regulations suited to local conditions, in the formulation of which all interested parties would participate. The grass-roots character of the program would help to assure local support and would be a favorable factor in enforcement proceedings. Requiring approval by the Commissioner of Conservation of the regulations adopted by the county boards would provide state supervision and coordination of the program without sacrificing the advantages of local initiative.

The objective is to stimulate, and when necessary to enforce, the adoption of improved practices whose feasibility has been demonstrated. As a means of assuring flexibility, it is wise to permit owners to operate under plans of management prepared by them and approved by the board, in lieu of complying with any specific regulations promulgated by the board. Public control along these lines offers promise of effecting

needed improvements in forest practices without deadening private initiative and with a minimum of red tape. It could be established either by amendment of the present law or by enactment of a new law.

PUBLIC COOPERATION

Public cooperation plays an important part in bringing about improved management of forest lands in private ownership and should be strengthened. At the state level, assistance in the form of educational, service, and research activities is offered by the Department of Conservation, the Extension Service, and the University of Minnesota, with cooperation by the U. S. Department of Agriculture.

DIVISION OF FORESTRY. The state, through the Division of Forestry, provides protection from fire for all forest lands except those in national forests and Indian reservations. Financial cooperation is received from the federal government under the Clarke-McNary Act of 1924 as amended (CM-2). State and federal expenditures for the ten years from 1949 to 1958 are shown in Table 98. During this period they averaged \$1,185,904 a year, of which 76 per cent consisted of state funds. Of the

Table 98. State and Federal Expenditures in Various Cooperative Activities, 1949-1958.

YEAR	FIRE CONTROL			DISTRIBUTION OF NURSERY STOCK			PRIVATE FOREST MANAGEMENT		
	STATE	FEDERAL	TOTAL	STATE	FEDERAL	TOTAL	STATE	FEDERAL	TOTAL
	M DOLLARS								
1949	879	289	1,168	22	—	22	14	6	20
1950	699	269	968	43	—	43	18	1	19
1951	719	269	988	49	—	49	18	—	18
1952	853	252	1,105	45	—	45	29	9	38
1953	919	265	1,184	63	—	63	30	9	39
1954	881	308	1,189	93	—	93	32	9	41
1955	956	309	1,265	88	—	88	31	10	41
1956	923	310	1,233	128	14	142	30	12	42
1957	978	295	1,273	160	31	191	34	15	49
1958	1,199	287	1,486	175	42	217	54	24	78
Total	9,006	2,853	11,859	866	87 ¹	953	290	95	385
Ave. per year	901	285	1,186	87	9	95	29	10	39

¹ The average was \$29,010 during the three years in which federal contributions were made.

Source: Forest Service, Milwaukee Office, and Department of Conservation, Division of Forestry (unpublished data).

money spent by the state, 91 per cent was used for fire prevention and 9 per cent for fire suppression. The latter figure ranged from a minimum of 3 per cent in 1954 to a maximum of 20 per cent in 1949.

State forest nurseries for the production of planting stock for use on state lands were first authorized in 1931. Then in 1947 the legislature authorized sale of stock from these nurseries for planting on private land at such price as the Commissioner of Conservation shall determine to be fair and reasonable. State expenditures for nursery operation during the decade 1949-1958 averaged \$86,600 a year (Table 98). During the same period the distribution of nursery stock for planting on private lands averaged nearly 6 million trees a year (Table 74). Federal contributions to the program started in 1956 under the Clarke-McNary Act (CM-4). They averaged 19 per cent of state expenditures during the three years from 1956 to 1958.

A third method by which the Division of Forestry cooperates with private owners is by providing on-the-ground assistance to landowners with less than 1,000 acres of forest land in the protection and management of their lands and in the harvesting and marketing of the products therefrom. The program includes advice on such matters as planting, thinning, preparation of management plans, selection of trees to be cut, estimating timber values, and sale of timber. Assistance is also given to manufacturers in the primary processing of forest products.

State expenditures under this program have been relatively small, with an average of only \$29,000 a year during the period from 1949 to 1958 (Table 98). There was, however, an increase of \$20,000 (60 per cent) in 1958 as compared with 1957. Federal contributions were made under the Cooperative Farm Forestry Act (Norris-Doxey Act) of 1937 until 1950, and under the Cooperative Forest Management Act of 1950 since that date. They averaged 34 per cent of state expenditures.

EXTENSION SERVICE. The State Extension Service has long been interested in promoting better forest management by small woodland owners. It played a prominent part in the state's original land-use planning activities, employs several foresters as assistant county agents, and some of the county agents themselves pay considerable attention to forestry. Its work with marginal farmers in Hubbard, Itasca, Carlton, and other counties deserves special mention.

Meagre appropriations have, however, handicapped its activities in this field. During the period from 1949 to 1958 state expenditures for extension work aimed specifically at the promotion of better forest management averaged only \$9,353 a year, with an annual federal contribution of \$7,284. The latter came from appropriations under the Smith-Lever Act of 1914, the Cooperative Farm Forestry Act of 1937 (from 1949 to 1951), and Section 5 of the Clarke-McNary Act of 1924 (from 1919 to 1955). Separate appropriations for extension activities in forest

management under the Clarke-McNary Act were discontinued after 1955 and funds for this purpose have subsequently been included in Smith-Lever appropriations.

SOIL CONSERVATION DISTRICTS. Soil conservation districts, which are controlled and operated by the local communities with both state and federal aid, provide a convenient medium through which to reach many owners. As shown in Table 99, they include 70 per cent of the area of the state and virtually blanket the southern and northwestern regions. It should perhaps be added that these districts have so far not lived up to their opportunities in effecting improved forest management. The interest of the average farmer, particularly in the southern and western parts of the state, is centered almost exclusively on harvested crops. This fact may be illustrated by the experience of a representative of the Soil Conservation Service. After inspecting the part of the farm devoted to harvested crops, he suggested that they take a look at the woodlot. "Go ahead if you want to," replied the owner, "I'll meet you at the house."

Effective operation of soil conservation districts calls for full understanding and coordinated action among the six cooperating agencies — the districts themselves, the State Soil Conservation Committee, the Agricultural Extension Service, the Soil Conservation Service, the Forest Service, and the State Division of Forestry. Administrative regulations of the Department of Agriculture give the Soil Conservation Service responsibility for leadership and for technical assistance for most farm conservation practices, but forestry practices are designated as the responsibility of the Forest Service. The Forest Service in turn, under agreements with the states, must use the state forestry organization (in Minnesota, the Division of Forestry) to discharge this responsibility. More than half the soil conservation districts in the state have cooperative agreements with the Division of Forestry in the Department of Conservation which spell out in detail the responsibilities of each party to the agreement. The extension of such agreements to a larger number

Table 99. Soil Conservation Districts by Regions, 1958.

REGION	MI ACRES	PER CENT OF REGION
Northeastern	6,300	34
Central	3,700	58
Northwestern ¹	6,600	100
Southern	19,100	96
	<hr/> 35,700	<hr/> 70

¹ Includes a small area in the northeastern region.

Source: State Soil Conservation Committee (unpublished data).

of districts would help to emphasize the importance of forestry in their activities. That interest in tree planting is increasing is indicated by the fact that during the last few years some districts in southern Minnesota have been purchasing planting stock from private nurseries because the state nurseries cannot meet the demand. In Winona and Houston counties the soil conservation districts have also initiated an effective fire-prevention program.

AGRICULTURAL CONSERVATION PROGRAM. Direct federal assistance is rendered by the U. S. Department of Agriculture through the Agricultural Conservation Program and the Commodity Stabilization Service. The Agricultural Conservation Program, initiated in 1936, offers incentive payments for the adoption of conservation practices which individual farmers would not carry out to the needed extent on their own initiative and with their own resources. Table 100 shows the areas which have benefited from incentive payments so far as the two practices relating to forest production are concerned. In 1957 the areas involved were small, and federal payments for the support of forestry practices constituted less than 1 per cent of total payments.

Cumulative accomplishments during the 22 years from 1936 to 1957, inclusive, show both planting and improvement cuttings on substantial areas. It is, however, significant and discouraging that the areas treated in 1957 fall so far below the average for the 22-year period. Interest on the part of farmers in taking advantage of incentive payments in the field of forest management is evidently small in comparison with their interest in other practices for which incentive payments are offered. In Minnesota, 59 per cent of ACP payments in 1957 were for the support of measures primarily for the initial establishment of permanent cover, and 24 per cent for measures primarily for the conservation or disposal of water.

The practices for which ACP payments will be made are determined by the State Agricultural Stabilization Committee (ASC) under general policies established by the U. S. Department of Agriculture. They may,

Table 100. Areas on which Forestry Practices Were Applied under the Agricultural Conservation Program, 1957 and 1936-1957.

PRACTICE	ACRES	1957 PER CENT OF FEDERAL AID ¹	1936-1957, CUMULATIVE	
			TOTAL ACRES	AVERAGE PER YEAR ACRES
Planting of trees and shrubs (A-7)	1,772	0.77	54,042	2,456
Forest stand improve- ment (B-10)	1,247	0.17	213,217	9,692

¹ Percentage of all ACP expenditures.

Source: Agricultural Conservation Program Service.

and do, vary from county to county in accordance with local conditions and needs. Many feel that the fencing of hardwood woodlots against grazing by livestock should be added to the approved practices, while others feel that increased returns would not be sufficient to justify encouraging farmers to engage in the practice.

CONSERVATION RESERVE. The Soil Bank Program, adopted in 1956, aims to reduce production of surplus agricultural crops by paying farmers for keeping land out of cultivation. Lands so withheld are classified as "acreage reserves" (discontinued in 1958) when they are simply allowed to lie fallow, and as "conservation reserves" when they are used to establish and maintain protective vegetative cover, water storage facilities, or other soil-, water-, wildlife-, or forest-conserving uses on land formerly devoted to the production of crops. The government shares the cost of these activities and in addition pays an annual rental on the land in the conservation reserve.

Table 101 gives cumulative figures for the conservation reserve program in Minnesota to July 15, 1958. The preponderance of measures for the establishment of permanent cover (other than forest trees) is particularly striking. However, contracts for the establishment of forest plantations already comprise nearly two-fifths as large an area as that planted under the ACP in 22 years. Only a small area is as yet involved in the planting of wildlife cover and wildlife water management, but much of the permanent cover to be established under the program will be of value for wildlife purposes.

Table 101. Contracts for Various Practices under the Conservation Reserve Program of the Soil Bank Approved to July 15, 1958.

PRACTICE	AREA		FEDERAL CONTRIBUTION	
	ACRES	PER CENT	DOLLARS	PER CENT
Permanent vegetative cover (A-2)	618,129	97	4,323,140	87
Forestry tree cover (A-7)	20,849	3	616,427	12
Erosion-control tree cover (A-8)	727	*	23,171	*
Water-storage structures for cover (B-7)	—	—	2,790	*
Wildlife cover (G-1)	69	*	294	*
Wildlife water and marsh management (G-2)	81	*	1,345	*
	<u>639,855</u>	<u>100</u>	<u>4,967,167</u>	<u>100</u>

* Less than 0.5 per cent.

Source: Commodity Stabilization Service (unpublished data).

That interest in the conservation-reserve program is increasing is shown by the fact that lands offered for inclusion in the program for 1960 totaled 349,402 acres, or 55 per cent more than the government's tentative goal of 225,000 acres. More experience is needed to determine what influence the conservation reserves will have on conservation practices over a period of years, particularly with respect to forestry and wildlife management.

SMALL WATERSHED PROJECTS. Congress in 1953 authorized a number of pilot watershed projects in different parts of the country to demonstrate the value of the watershed approach in combining conservation practices with upstream flood prevention structures. The next year (1954) it passed the Watershed Protection and Flood Prevention Act (Public Law 566, commonly known as the Small Watersheds Act) providing for land protection and flood prevention in watersheds not exceeding 250,000 acres in area. Measures which may be undertaken to achieve these objectives include sound crop management, sound forest management, sound wildlife management, and the construction of necessary engineering works. The projects are initiated and administered by the people concerned, with state approval and federal guidance and financial assistance.

Minnesota has two pilot watershed projects. The East Willow Creek project, comprising 24,000 acres, was dedicated in the summer of 1958. Work has been started by the Soil Conservation Service on a considerable part of the Chippewa River Tributaries and Hawk Creek Project, which includes more than a million acres and is by far the largest pilot project in the United States.

The state also has, in 1960, 28 small watershed projects which have been approved by the State Soil Conservation Committee. These are widely distributed through 30 counties, vary in size from 6,000 acres to 248,000 acres, and total about 2,000,000 acres. Forestry and wildlife activities play a relatively minor but still important part in the picture.

The many steps involved in getting a small watershed project under way are somewhat discouraging. After the project has been proposed by local agencies, it must be approved by the State Soil Conservation Committee, there must be a technical field examination by the Soil Conservation Service, the project must be approved for planning by the Washington office of the Department of Agriculture, planning must actually be carried out by the Soil Conservation Service in cooperation with other agencies, and finally the project must be approved for operation by the Secretary of Agriculture. Some two years elapsed before the Rush-Pine Creek project, the first in the state to be proposed under the small watersheds program, reached the latter stage. Speeding up of the process would help to stimulate interest.

SMALL WOODLANDS. Present state and federal programs of cooperation with private owners of commercial forest land give little promise of increasing its production to anything like its potential capacity, particularly in the case of small woodlands. Of the total area in private ownership, 6,867,000 acres (86.4 per cent) is in ownerships of less than 500 acres, and 4,168,000 acres (52.5 per cent) is in ownerships of less than 100 acres. The Director of the Division of Forestry estimates that these small woodlands, which are potentially among the most productive forest lands in the state, are now growing only about a tenth as much wood as they might grow under intensive forest management. Former yields from the Big Woods in the southeastern part of the state illustrate the potential productive capacity of that region.

The low productivity of small woodlands is not peculiar to Minnesota, but is a national phenomenon which led the Forest Service in 1958 to launch a nationwide campaign to improve the situation. In announcing this action the Chief of the Service stated that small woodlands "make up over half of the nation's commercial forest area. Because of their condition, they are least capable of meeting increased needs but afford the greatest opportunity for improvement. They also offer opportunity to substantially increase income to farmers and other small forest owners. . . There is need to pursue much faster a cooperative course of action between private owners and State and Federal governments in order to bring these lands into full productivity."

A public hearing at St. Paul on September 4, 1958, indicated agreement that something ought to be done and elicited many suggestions as to lines of action that might bring results. Emphasis was placed on the need for more education, research, and both public and private assistance in the production, harvesting, and marketing of timber products. Expansion of markets and cooperative marketing came in for considerable attention. Esthetic considerations — the pleasure that an owner gets out of his woods and the wildlife which they support — were not overlooked.

All of these items are important, but most important of all is development of an interest in forest management on the part of the small owner and a determination to practice such management whenever it can be shown to pay. A basic difficulty in attaining these objectives is the cold fact that forest management sometimes results in a loss or in a substantially smaller return than could be obtained from a different investment of the same amount of money. Educational efforts which ignore this fact, and which imply that every forest is a potential gold mine, may in the long run do more harm than good. An important function of public agencies should be to help an owner to size up the situation on his own property and to adopt the methods of growing, harvesting, and marketing the forest crop best suited to his particular circumstances.

When a farmer, for example, is convinced that good forest management, integrated with other farm activities, is also good business, he is not likely to be slow about putting it into practice — and without a subsidy. Public subsidies for the encouragement of better forest management may be justifiable as a pump primer and as a means of providing watershed protection which a private owner could not be expected to supply at his own expense; but as a reward for engaging in a financially profitable undertaking, or as an inducement to engage in a financially unprofitable one, their use is open to serious question.

The problem of the small woodland will be on its way to solution when, and only when, it is approached from both the economic and the technical angles.

FREE FARM PROGRAM

The Tree Farm Program, sponsored nationally by American Forest Products Industries, Inc., is an attempt on the part of the forest industries to help solve the problem of obtaining better management of privately owned forest lands through private initiative. As officially defined, "a tree farm is an area of privately owned forest land devoted primarily to the continuous growth of merchantable forest products under good forest practices." To qualify for recognition as a tree farm, a tract must be approved by a certifying agency as meeting specified standards with respect to protection from fire, insects, disease, and excessive grazing, and the use of harvesting methods that will assure future crops of timber.

Tracts of any size from 6 acres up, and in any class of private ownership, can qualify as tree farms if properly managed. The program has a dual purpose — to inform owners of the advantages of sustained-yield forest management, and to encourage the adoption of such management by public recognition in the form of a certificate and of a conspicuous sign which the owner can display on his property. Reasonably high standards of performance are required for initial recognition, and decertification may result if the owner fails to maintain those standards.

The tree farm program was inaugurated in Minnesota in 1949 under the auspices of the Forest Industries, the Minnesota Division of Forestry, and the Keep Minnesota Green Committee. The status of the program as of October, 1959, is shown in Table 102. More detailed figures by counties are given in Table 5, Appendix I. Some of the more striking features of the situation may be summarized as follows:

1. The northeastern region has 63 per cent of the total number of tree farms in the state and 97 per cent of the total area, with 47 per cent in Koochiching County.
2. The southern region has 21 per cent of the total number of tree farms but only 2 per cent of the total area.
3. Industrial ownership, practically all in the northeastern region,

Table 102. Tree Farms by Regions and Ownerships, 1959.

REGION	INDUSTRIAL OWNERS				OTHER PRIVATE OWNERS			
	NUMBER		AREA		NUMBER		AREA	
	No.	PER CENT	ACRES	PER CENT	No.	PER CENT	ACRES	PER CENT
Northeastern	16	84	526,282	100	635	63	48,111	74
Central	3	16	520	*	144	14	7,908	12
Northwestern	—	—	—	—	9	1	581	1
Southern	—	—	—	—	221	22	8,412	13
	19	100	526,802	100	1,009	100	65,012	100

REGION	ALL PRIVATE OWNERS				
	NUMBER		AREA		PER CENT OF ALL FOREST LAND IN PRIVATE OWNERSHIP
	No.	PER CENT	ACRES	PER CENT	
Northeastern	651	63	574,393	97	12.5
Central	147	15	8,428	1	0.6
Northwestern	9	1	581	*	0.1
Southern	221	21	8,412	2	0.7
	1,028	100	591,814	100	7.5

* Less than 0.5 per cent.

Note: As of October 1, 1960, the total number of tree farms had increased to 1,172 and the total area to 630,377 acres.

Source: Keep Minnesota Green Committee (unpublished data).

includes only 2 per cent of the total number of tree farms but 89 per cent of the total area.

4. The area of commercial forest land in private ownership which is included in tree farms varies from 0.1 per cent in the northwestern region to 12.5 per cent in the northeastern region, with an average of 7.5 per cent for the state as a whole.

5. On the basis of Forest Service estimates of forest area as of 1953, 91 per cent of the area in industrial ownership is in tree farms as against 0.09 per cent in other private ownership. Although the areas in different ownerships have changed somewhat since 1953, these changes would probably not make any substantial difference in the percentage relationships.

The tree farm program provides only a rough, although undoubtedly a significant, indication of the extent to which forestry is being practiced on private lands, since there must be many properties in this category which have not been registered as tree farms. To what extent the program is merely a recognition of sound forest practices which the owners would have adopted anyway, and to what extent it is the major cause of those practices, is problematic. Probably most of the tree farms in

industrial ownership would fall in the former group, and many of those in other private ownership in the latter group. Certainly the program on the whole has had a beneficial influence. It is off to a good start, with new tree farms being registered every month; but it still has a long way to go before it will effect any great improvement in the management of the great bulk of the large forest area in the hands of the small private owners.

DRAINAGE OF WETLANDS

Water in the form of streams, swamps, marshes, bogs, temporary pools, small ponds, and large lakes is one of the most prominent features of the Minnesota landscape. Except for the streams and lakes, these areas are commonly regarded as "wetlands," which are defined by the Fish and Wildlife Service as "waterlogged or shallow-water lands that are too wet for cultivated crops unless artificial drainage is provided." Under this definition, the Service estimates that there are nearly two million pieces of wetland in the state, with an area of more than five million acres.

So far as agriculture is concerned, drainage is essential for the production of crops on "wetlands" and is also desirable on large areas which are neither waterlogged nor covered with open water but which are nevertheless too wet for maximum production. The need varies greatly with the soil type, topography, and effectiveness of natural drainage. It has been estimated, for example, that artificial drainage is not needed in any of the sandy Wadena-Hubbard soil association in the central part of the state, while it would benefit roughly 50 per cent of the clay-loam Clarion-Nicollet-Webster soil association in the southern part of the state and 100 per cent of the silty-clay-loam Fargo-Bearden soil association in the northwestern part of the state.

Drainage has consequently always been an important factor in successful farming in the typically agricultural portions of the state, with which this particular study is only incidentally concerned. Further discussion therefore deals only with the typically forested peat region of the northern part of the state and with the pothole region in the northwestern part, where artificial drainage may involve a conflict of interest between crop production and waterfowl production.

PEAT REGION. Extensive drainage of wetlands in the peat region of northern Minnesota to fit them for agricultural use was undertaken in the early years of the present century. This development was encouraged by state legislation facilitating the organization and operation of drainage districts, and making state-owned swamplands within areas affected by county and judicial drainage systems subject to drainage assessments the same as privately owned lands. In 1908 the federal government followed the example of the state by passage of the Volstead Act, which made unentered and entered but unpatented lands in the public

domain subject to all of the provisions of state laws relating to the drainage of lands for agricultural purposes. All charges legally assessed against the public lands could be enforced by sale in the same manner as if they were under private ownership; but in order to obtain a patent to the land the purchaser had to pay the government the basic price of \$1.25 or \$2.50 per acre.

The aftermath of this ill-advised attempt to farm lands many of which were basically unsuited for agriculture is well known. Crop failures, inadequate financial resources, and heavy taxes led to such heavy tax delinquency that the state was forced to come to the rescue of the counties by guaranteeing payment of the drainage district bonds and in return assuming ownership of the tax-forfeited lands — the present "conservation areas."

The lesson has been learned, and indiscriminate drainage of peat lands is today a thing of the past. This situation does not, however, rule out the desirability of limited drainage of selected areas where the depth and character of the soil are such as to permit the production of appropriate crops with suitable fertilization, and where economic conditions are favorable. The problem is to identify the specific tracts where these conditions exist and to make sure that they are farmed by able individuals under competent direction.

In southern Minnesota, many thousands of acres of a different type of peat have been drained successfully, sometimes with a resulting value of upwards of \$500 an acre.

Drainage to permit harvesting of peat for commercial purposes, rather than for agricultural use of the land, has been undertaken on a very small scale in the northern counties. The potential value of peat for such purposes was recognized by the legislature as early as 1935, when it withdrew from sale all state lands chiefly valuable because of deposits of peat in commercial quantities. That the demand for peat will justify the drainage of large areas seems doubtful.

No drainage operations have yet been undertaken for the specific purpose of increasing the growth of forest trees. In the late 1920's a cooperative study of the effect on the forest of drainage for agricultural purposes in six northern counties was made by the federal and state governments and the University of Minnesota. It showed that no trees were damaged by drainage; that growth after drainage increased up to a maximum of more than 100 per cent; that the response in increased growth took place from one to eight years after the ditching; and that the effect of drainage fell off rapidly with increased distance from the ditch. Observations by others indicate also an increase in upland game in this region following drainage. One of the most discouraging features of drainage in northern Minnesota from a forestry standpoint is the increase of inflammability in the peat and surface vegetation.

The study left many questions unanswered, and further investigation is needed to determine both the biologic effects and the economic feasibility of drainage as a tool of forest management. The experience of Sweden and Finland indicates its potential usefulness as a practical means of increasing volume yield and financial returns per acre.

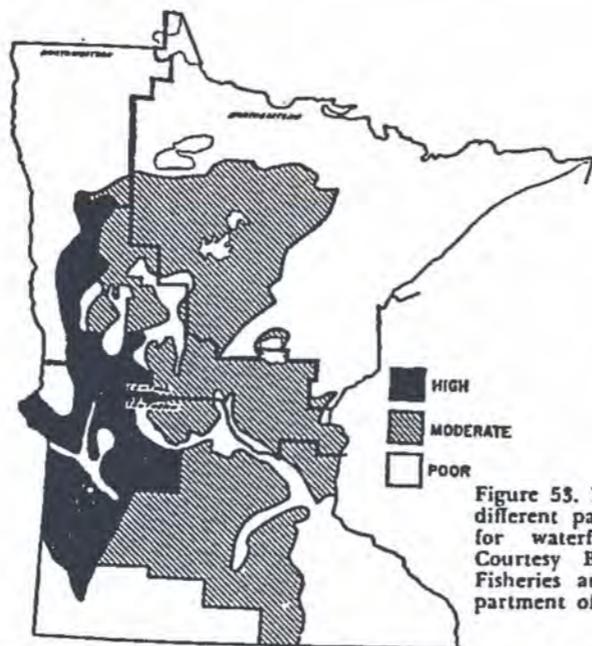
POTHOLE REGION. Whether or not to drain potholes involves conflicting interests which raise a land-use issue of the first magnitude in the western part of the state. From the viewpoint of the farmer, drainage is commonly desirable because it makes more land, and usually relatively fertile land, available for crop production; it makes the farm a more unified area; and it facilitates use of machinery. Moreover, elimination of a pothole may make not only the pothole itself available for crop production but also a considerably larger area of surrounding land which was previously unusable. These advantages usually more than counterbalance the possible value of the pothole as a source of water for livestock or as an esthetic attraction. In other words, for the farmer drainage is simply good business.

On the other hand, from the standpoint of the wildlife manager, the sportsman, and the bird watcher, drainage is commonly bad business because it ruins the most valuable breeding ground for waterfowl. The fact that it may also result in a greater production of upland game is relatively unimportant to the members of this group whose interest is primarily in ducks. Their concern is intensified because of the key position occupied by Minnesota, together with the two Dakotas, as a producer of waterfowl. In a normal year these three states are estimated to produce about four to five million ducks. Although this figure constitutes only about 10 per cent of the estimated continental supply of waterfowl, most of which comes from Canada, it represents about 75 per cent of the production in the United States. Its significance is increased by the fact that the area of breeding grounds in Canada, as in this country, is being steadily reduced.

Figure 53 shows the relative value of different parts of the state for the production of waterfowl. It will be noted that much of the area of high value for the production of waterfowl is also inherently of high value for the production of agricultural crops (see Fig. 1, Frontispiece).

Opposing views are held as to the beneficial, detrimental, or neutral effect of drainage on the hydrologic cycle. Some believe that farm drainage does not remove from the soil water that is useful for the production of crops, does not affect precipitation, does not measurably affect major floods or runoff, and does not appreciably affect the groundwater supply of deep wells. Others believe that it has all of these effects. More information on the subject is much needed.

On the contrary, no doubt exists that the drainage of a pothole makes that particular spot no longer available as a breeding ground for water-



fowl. Whether or not the change is desirable, the fact remains that use of the same pothole for the production of harvested crops and of ducks is physically impossible. A choice must be made between the two.

In southern Minnesota drainage has already eliminated most of the potholes, and the process is now being extended to the west central and northwestern parts of the state, with continuing reduction of valuable breeding grounds. Those who are alarmed at the situation feel that the process is unwisely accelerated by subsidies provided by the Agricultural Conservation Program. The objectives and policy of the Department of Agriculture with respect to biology in this particular field, and for the country as a whole, are stated by the Administrator of the Soil Conservation Service as follows:¹

"The Service recognizes that fish and wildlife on farm or ranch lands are agricultural crops, and that the planned production of such fish and wildlife is a specific kind of land or water use. . . The primary objective of the Soil Conservation Service is to assist all conservation districts and watershed organizations to establish and maintain a coordinated technical soil and water conservation program within the capabilities of the land and in keeping with the public welfare and the needs and desires of individuals and organized groups. Within this basic objective . . . the Service has specific objectives concerning the use of biological science

¹ Biology 1. Administrator's Memorandum SCS-98, February 6, 1956.

in the conduct of its work. . . To make croplands, grazing lands, woodlands, and farm and ranch waters produce secondary crops of fish and wildlife consistent with other uses of such lands and waters. . . To safeguard the habitat of valued wildlife and to offset or reduce damage to such habitat resulting from changes in land use or installation of soil and water conservation practices. . ."

More definite guidelines for applying these policies in the three states of Minnesota, North Dakota, and South Dakota were issued on February 21, 1957, to state conservationists and chairmen of state Agricultural Stabilization Committees in those states by the administrators of the Soil Conservation Service and the Agricultural Conservation Program Service. The following excerpts from these guidelines are of interest:

"The Service will not provide assistance to cooperators in drainage, the primary purpose of which is to bring additional land into agricultural production. . . In the installation of drainage systems, due consideration shall be given to the maintenance of wildlife habitat. . . The Department does assist farmers in improving their operating efficiency by helping them to apply improved farming practices, including drainage of existing crop and pasture land whenever such drainage will contribute to improvement of efficiency on individual farms. . . Migratory waterfowl are an important wildlife resource of the pothole country. They are produced primarily upon privately owned farm and ranch lands and their continued production in this area necessitates that landowners and operators have an appreciation of the values and importance of this resource, and that the retention and improvement of waterfowl habitat becomes a recognized part of conservation farming and ranching. It also requires the cooperative effort of private and public wildlife interests to enhance the opportunities for habitat improvement. It is not solely the problem of landowners and operators. Wildlife interests must come to recognize and respect the farmer's choice to do with his land as he determines."

This memorandum also called attention to the fact that the Conservation Reserve Program of the Soil Bank provides economic returns and cost-sharing to the farmer for retirement from cultivation of lands eligible under Practice G-2, "Water and Marsh Management to benefit fish and wildlife." This practice includes "the development of shallow-water areas to improve habitat for waterfowl, fur animals and other wildlife as well as restoration of drained areas (formerly marshland) by installing earth plugs or water control structures in drainage ditches." Thus the Department of Agriculture, to a limited extent and under two different programs, encourages both the elimination and the creation of shallow-water areas, depending on the particular circumstances on each farm.

Officials of the Bureau of Sport Fisheries and Wildlife in the Department of Interior and of the Division of Game and Fish in the State Department of Conservation feel that the policy of encouraging any drainage is unsound in that it results in putting more land under cultivation at the same time that the government is attempting to reduce the area under cultivation. They also feel that in spite of the avowed policy of the Department of Agriculture to give no assistance to drainage operations the primary purpose of which is to bring additional land into agricultural production, the instructions for applying that policy are so open to interpretation and contain so many loopholes as to make it relatively ineffective in practice. Furthermore, they believe that, although the area of potholes drained each year is not large, the process is a cumulative one which is slowly but steadily destroying many key areas. They therefore recommend the complete abolition of federal subsidies in this particular field.

Officials of the Department of Agriculture reply (1) that the policy contemplates adjustments in land use rather than increases in crop production; (2) that any increase in cultivated land resulting from the drainage of potholes is commonly offset by the abandonment of previously cultivated upland; (3) that the bulk of the area drained consists of waterlogged land and not of potholes; and (4) that continuing effort is being made to plug any loopholes in the policy which may actually exist.

Another factor in the situation is that the federal subsidy for drainage constitutes a much smaller part of the total cost than is the case with many other subsidized practices, such as tree planting and forest stand improvement. The soil conservation groups feel that federal cost-sharing at this level offers little inducement to farmers to engage in drainage operations that they would not undertake even if they had to bear the entire cost. The wildlife groups, on the other hand, feel that it provides just enough encouragement to tip the scales in favor of drainage projects that would not otherwise be undertaken.

Out of the welter of controversy over wetlands, a few facts stand out:

1. Continued drainage of potholes threatens a gradual but eventually drastic reduction of the waterfowl population of the United States. National as well as state and private interests are involved.
2. Farmers will continue to decide whether or not to drain wetlands primarily on economic grounds, with minor consideration of the esthetic value of waterfowl and other wildlife. They cannot and should not be expected to refrain from drainage activities purely as a public service.
3. Discontinuance of federal subsidies under the Agricultural Conservation Program might slow down the drainage process but would not stop it. Such action would be a palliative, not a cure.
4. If the public wants to maintain Minnesota's present position as a

leader in the production of waterfowl, at the expense of potential agricultural production, it will have to pay for retaining the necessary area of potholes to make this possible. Among the practicable means to this end are outright purchase, lease, or subsidization to refrain from drainage. Zoning against drainage under certain conditions have been suggested as a possibility but seems unlikely of adoption.

5. Reliable estimates are needed of the area required to assure the continued production of a given waterfowl population, and of the cost of keeping this area under public control by various combinations of the three methods suggested.

6. Time is running out. Drainage is continuing, and potholes once destroyed are not easily restored.

7. Both state and federal legislators, as representatives of the public, must decide the extent to which the public interest requires the preservation of potholes under public control. Whatever policy is adopted must then be translated into a definite program of action.

NATURAL RESOURCES COUNCIL

Repeated reference has been made throughout this report to the need for closer relations among the many public and private agencies concerned with the ownership, use, and management of forest and related lands. Under present conditions each agency tends to go its own way, not so much because of unwillingness to cooperate as because of lack of any mechanism to bring them together. Common problems are occasionally considered by particular groups such as the Forest Industries Information Committee, the Society of American Foresters, the county commissioners of the northern counties, and interim committees of the state legislature. These activities are useful, but they are sporadic, lack continuity, and usually fail to include representation of all points of view.

Various devices for improving the situation have been suggested. A common weakness of most of these proposals is that they stress coordination within the structure of the state government rather than among a wide range of public and private interests. This broader approach could be brought about through creation by the legislature of a Natural Resources Council appointed by the Governor with the advice and consent of the Senate, and consisting of representatives of state, county, federal, and private interests concerned with the ownership, use, and management of natural resources. As its name implies, the Council would be wholly advisory in nature and would have no administrative responsibility or authority. Its chief functions would be:

1. To identify current problems and to stimulate and coordinate studies and action aimed at their solution. Its guidance in this field would help to assure adequate coverage of important problems and to avoid undesirable over-lapping and duplication.

2. To advise the legislature, the Governor, and the various agencies and interests represented in its membership with respect to natural resource policies, administration, and management. This function would involve contacts, among others, with the proposed county land-use committees.

3. To facilitate contacts and to promote cooperation among the various agencies and interests concerned with land problems. Full knowledge of each other's views and plans is a prerequisite to their working together for a common end — promotion of the public interest.

The Council should be really representative of all the groups whose participation would be valuable without becoming so large as to be unwieldy. As a tentative suggestion, it might consist of one representative each from the State Department of Conservation, the Office of Iron Range Resources and Rehabilitation, the University of Minnesota, the Forest Service, and the Bureau of Sport Fisheries and Wildlife, two from the counties (preferably from the northern and southern parts of the state), one each from the timber, water, mining, agricultural, and recreation interests, and three from the general public. This would give a total of fifteen members, of whom seven would represent public agencies, five various private interests, and three the public at large. In order to provide for both reasonable stability and turnover, appointments should be for staggered terms, perhaps of three years.

The Council should be authorized to call upon the various state departments and agencies for information; and it is assumed that other public agencies and private interests would voluntarily respond to any reasonable call for assistance. The Council itself would require only a small staff — perhaps a director, two or three technical assistants, and about the same number of clerks and stenographers. Members of the Council would receive traveling expenses but no salary. Total costs would be small, and there would be no interference with or duplication of the functions of existing state or other agencies.

The effectiveness of the Council would depend largely on the caliber of the men appointed to it. The chairman, in particular, would need to be a strong man with breadth of view, vision, courage, and leadership of a high order. While membership would entail responsibilities, it would also provide opportunities for interesting and constructive public service which would make appointment a coveted honor.

The establishment of a Natural Resources Council, with the vigorous support of the legislature and the Governor, and with the full cooperation of state, county, federal, and private agencies, might well be the most constructive single step which could be taken to assure intelligent, comprehensive, and continuing consideration of Minnesota's land problems.

APPENDIX I

SUPPLEMENTARY STATISTICS

Table 1. Ownership of Land by Regions, Counties, and Classes of Owners, 1953

REGION AND COUNTY	THOUSAND ACRES	PER CENT OF COUNTY				OTHER PRIVATE
		FEDERAL	STATE	COUNTY	FARM	
Northeastern						
Aitkin	1,167	1	34	27	27	11
Beltrami	1,611	24	36	12	21	7
Carlton	550	3	12	28	43	14
Cass	1,314	24	11	23	25	17
Clearwater	643	20	7	17	43	15
Cook	898	71	15	2	1	11
Crow Wing	639	*	3	28	37	32
Hubbard	597	*	14	26	40	20
Itasca	1,704	17	20	26	15	22
Koochiching	2,003	7	55	15	9	14
Lake	1,365	52	13	16	2	17
Lake of the Woods	837	13	57	1	20	9
Pine	904	*	12	27	47	14
St. Louis	4,020	20	14	25	13	28
	18,252	20	23	20	19	18
Central						
Becker	842	5	4	11	65	15
Benton	259	0	1	2	94	3
Chisago	268	0	1	1	88	10
Douglas	408	0	1	*	94	5
Isanti	283	0	1	6	86	7
Kanabec	336	0	3	22	70	5
Mahnomen	367	12	4	18	65	1
Mille Lacs	364	1	5	30	62	2
Morrison	727	4	1	18	76	1
Otter Tail	1,280	*	1	2	92	5
Sherburne	280	0	2	7	85	6
Todd	606	0	1	4	90	5
Wadena	343	*	3	7	79	11
	6,363	2	2	9	81	6

MINNESOTA LANDS

Table 1 (continued)

REGION AND COUNTY	THOUSAND ACRES	FEDERAL STATE		COUNTY PER CENT OF COUNTY	FARM	OTHER PRIVATE
		PER	PER			
Northwestern						
Clay	672	0	1	4	93	2
Kittson	719	*	5	17	75	3
Marshall	1,152	5	12	6	74	3
Norman	566	0	*	4	94	2
Pennington	398	*	1	9	87	3
Polk	1,288	*	1	6	91	2
Red Lake	276	*	1	6	90	3
Roseau	1,073	1	29	10	58	2
Wilkin	481	0	1	2	95	2
	<u>6,625</u>	<u>1</u>	<u>8</u>	<u>7</u>	<u>82</u>	<u>2</u>
Southern						
Anoka	272	0	5	3	68	24
Big Stone	326	0	1	*	94	5
Blue Earth	474	0	*	1	96	3
Brown	392	0	1	*	96	3
Carver	229	0	1	*	94	5
Chippewa	372	0	*	*	96	3
Cottonwood	410	*	1	*	98	1
Dakota	365	*	3	1	87	9
Dodge	278	0	*	*	97	3
Faribault	456	0	*	*	98	2
Fillmore	550	0	*	*	95	4
Freeborn	449	0	*	1	97	2
Goodhue	485	*	*	*	93	6
Grant	357	0	*	2	95	3
Hennepin	362	1	1	1	62	35
Houston	362	5	1	*	91	3
Jackson	447	0	*	*	98	1
Kandiyohi	527	*	1	2	92	5
Lac qui Parle	495	*	1	*	97	2
LeSueur	282	0	*	*	99	1
Lincoln	346	0	1	*	96	3
Lyon	456	0	*	1	96	3
Martin	452	0	*	*	98	1
McLeod	319	0	*	*	95	4
Mecker	397	0	*	*	94	5
Mower	450	0	*	*	96	3
Murray	453	0	*	*	97	2
Nicollet	294	0	*	*	92	8
Nobles	456	0	*	*	98	2
Olmsted	419	0	1	*	95	4
Pipestone	297	*	*	*	98	1

Table 1 (continued)

REGION AND COUNTY	THOUSAND ACRES	FEDERAL STATE		COUNTY PER CENT OF COUNTY	FARM	OTHER PRIVATE
		PER	PER			
Pope	436	0	*	*	93	7
Ramsey	102	2	2	1	30	65
Redwood	559	*	*	*	98	2
Renville	627	0	*	2	97	1
Rice	317	0	*	*	96	3
Rock	310	0	*	*	96	4
Scott	225	*	1	*	95	4
Sibley	372	0	*	*	98	2
Stearns	868	0	*	*	95	4
Steele	272	0	1	*	96	3
Stevens	365	0	*	*	95	5
Swift	478	0	*	4	95	*
Traverse	366	0	1	1	96	2
Wabasha	333	1	*	*	96	2
Waseca	266	0	*	*	98	1
Washington	250	0	1	1	89	9
Watonwan	277	0	*	*	98	2
Winona	399	4	2	*	91	3
Wright	430	0	*	*	94	5
Yellow Medicine	485	*	1	*	39	*
	<u>19,966</u>	<u>*</u>	<u>1</u>	<u>*</u>	<u>94</u>	<u>4</u>
State	51,206	8	10	7	64	9

* Less than 0.5 per cent.

Source: Lake States Forest Experiment Station (unpublished data).

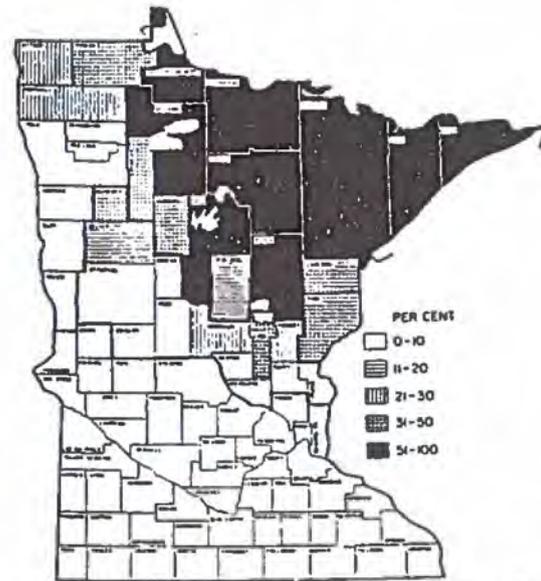


Figure 1. Public ownership of land by counties, 1953.

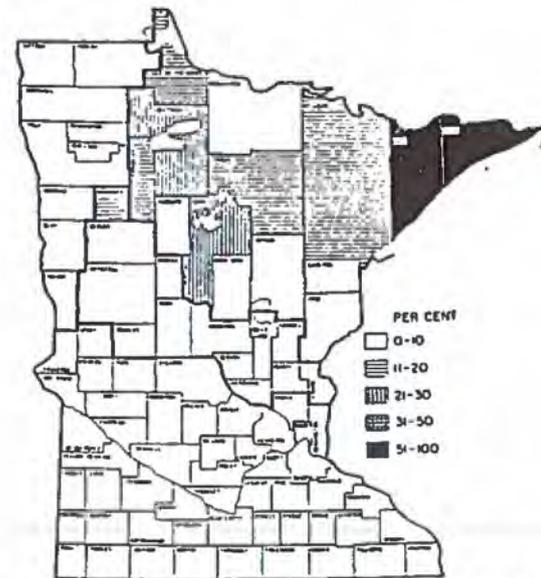


Figure 2. Federal ownership of land by counties, 1953.

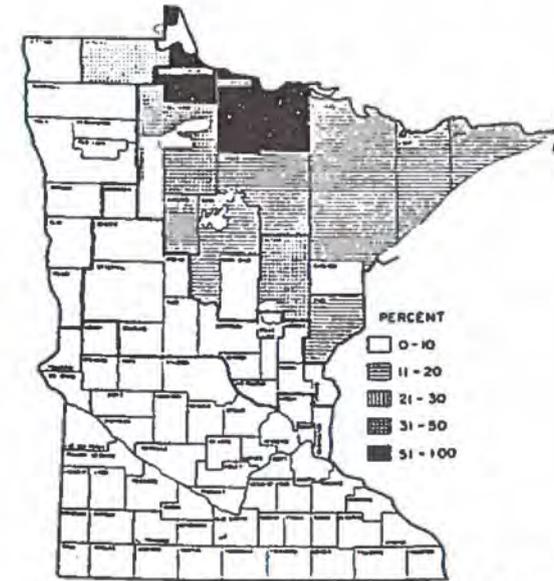


Figure 3. State ownership of land by counties, 1953.

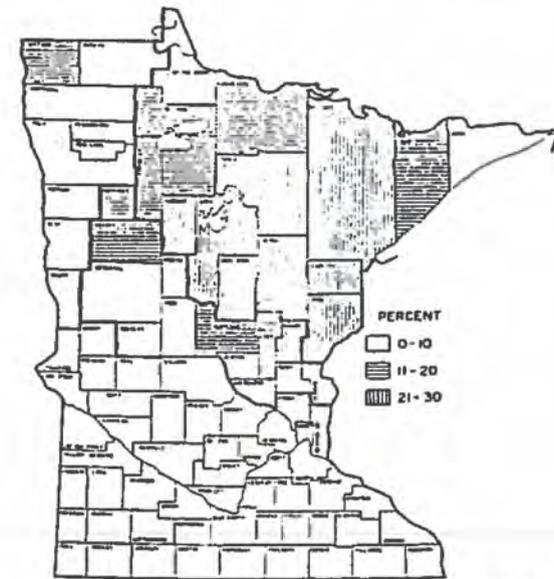


Figure 4. County ownership of land by counties, 1953.

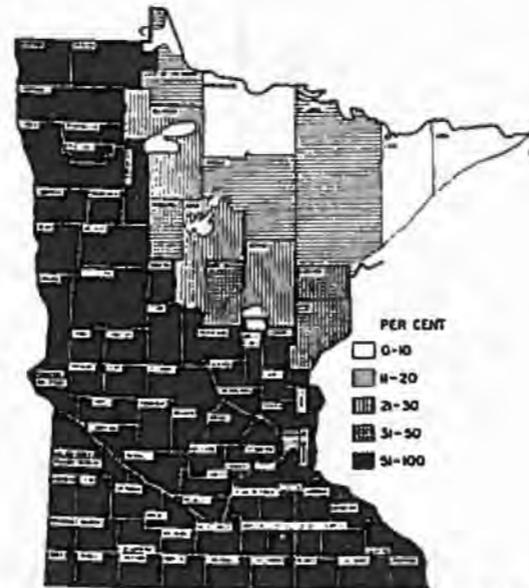


Figure 5. Industrial and other private non-farm ownership of land by counties, 1953.

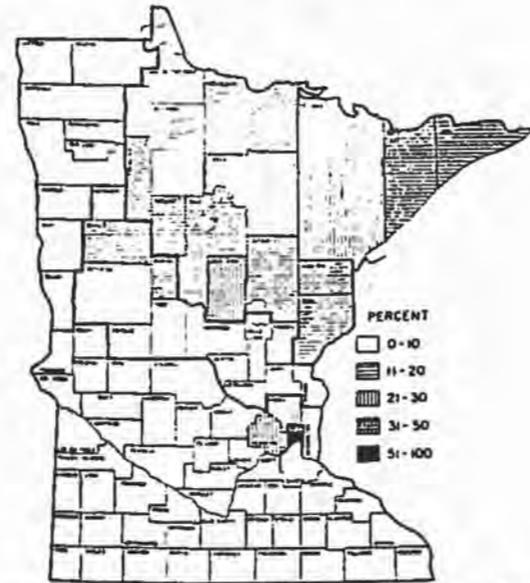


Figure 6. Farm ownership of land by counties, 1953.

Table 2. Ownership of Commercial Forest Land by Regions, Counties, and Classes of Owners, 1953.

REGION AND COUNTY	THOUSAND ACRES	PER CENT OF COUNTY				OTHER PRIVATE
		FEDERAL	STATE	COUNTY	FARM	
Northeastern						
Aitkin	894	1	39	31	17	12
Beltrami	1,220	29	33	14	15	9
Carlton	369	4	10	36	39	11
Cass	1,018	27	11	26	18	18
Clearwater	380	20	6	22	36	16
Cook	723	69	15	2	1	13
Crow Wing	459	*	4	30	28	38
Hubbard	441	*	16	31	26.5	26.5
Itasca	1,458	19	20	27	11	23
Koochiching	1,522	6	53	17	7	17
Lake	1,139	48	12	19	1	20
Lake of the Woods	555	15	64	*	11	10
Pine	526	*	14	39	28	19
St. Louis	3,234	21	14	28	10	27
	13,938	21	23	23	13	20
Central						
Becker	548	10	7	23	42	18
Benton	49	0	*	*	100	*
Chisago	68	0	4	2	82	12
Douglas	42	0	0	0	100	*
Isanti	65	0	1.5	3	94	1.5
Kanabec	166	0	5	37	52	6
Mahnomen	145	29	1	15	38	17
Mille Lacs	171	1	5	47	45	2
Morrison	243	12	3	31	53	1
Otter Tail	244	0	1	1	97	1
Sherburne	58	0	3	0	85	12
Todd	165	0	1	10	78	11
Wadena	141	0	3	11	73	13
	1,905	6	3	19	64	8
Northwestern						
Clay	19	0	*	0	100	0
Kitson	104	0	*	0	100	0
Marshall	226	5	10	20	57	8
Norman	41	0	0	0	100	0
Pennington	63	0	*	0	100	0
Polk	108	0	*	0	100	0
Red Lake	53	0	*	0	100	0
Roseau	370	1	44	5	35	15
Wilkin	3	0	0	0	100	0
	987	1	19	6	66	8

MINNESOTA LANDS

Table 2 (continued)

REGION AND COUNTY	THOUSAND ACRES	PER CENT OF COUNTY				OTHER PRIVATE
		FEDERAL	STATE	COUNTY	FARM	
Southern						
Anoka	46	0	*	0	87	13
Big Stone	3	0	0	0	100	0
Blue Earth	38	0	0	0	100	0
Brown	21	0	0	0	100	0
Carver	26	0	0	0	96	4
Chippewa	6	0	0	0	100	0
Cottonwood	4	0	0	0	100	0
Dakota	37	3	3	0	70	24
Dodge	14	0	0	0	100	0
Faribault	14	0	0	0	100	0
Fillmore	93	0	0	0	99	1
Freeborn	14	0	0	0	100	0
Goodhue	65	1	0	0	74	25
Grant	5	0	0	0	100	0
Hennepin	31	*	0	3	61	36
Houston	122	6	0	0	92	2
Jackson	8	0	0	0	100	0
Kandiyohi	34	0	0	0	100	0
Lac qui Parle	9	0	0	0	100	0
LeSueur	25	0	0	0	100	*
Lincoln	3	0	0	0	100	0
Lyon	5	0	0	0	100	0
Martin	4	0	0	0	100	4
McLeod	12	0	0	0	100	0
Meeker	17	0	0	0	100	0
Mower	13	0	0	0	100	0
Murray	4	0	0	0	100	0
Nicollet	19	0	0	0	100	0
Nobles	2	0	0	0	100	0
Olmsted	47	0	4	*	58	38
Pipestone	1	0	0	0	100	0
Pope	15	0	0	0	100	0
Ramsey	7	0	0	14	14	72
Redwood	13	0	0	0	100	0
Renville	16	0	0	0	100	0
Rice	21	0	0	0	90	10
Rock	2	0	0	0	100	0
Scott	26	0	0	0	81	19
Sibley	20	0	0	0	100	0
Stearns	94	0	0	0	96	4
Steele	8	0	0	0	100	0
Stevens	3	0	0	0	100	0
Swift	11	0	0	0	100	0
Traverse	3	0	0	0	100	0
Wabasha	62	1	1	0	86	12

STATISTICS

Table 2 (continued)

REGION AND COUNTY	THOUSAND ACRES	PER CENT OF COUNTY				OTHER PRIVATE
		FEDERAL	STATE	COUNTY	FARM	
Waseca	15	0	0	0	100	0
Washington	31	0	0	0	84	16
Watsonwan	4	0	0	0	100	0
Winona	110	0	7	0	85	8
Wright	52	0	0	0	92	8
Yellow Medicine	11	0	0	0	100	0
	1,268	1	1	*	90	8
State	18,098	17	19	20	27	17

* Less than 0.5 per cent.

Source: Lake States Forest Experiment Station (unpublished data).

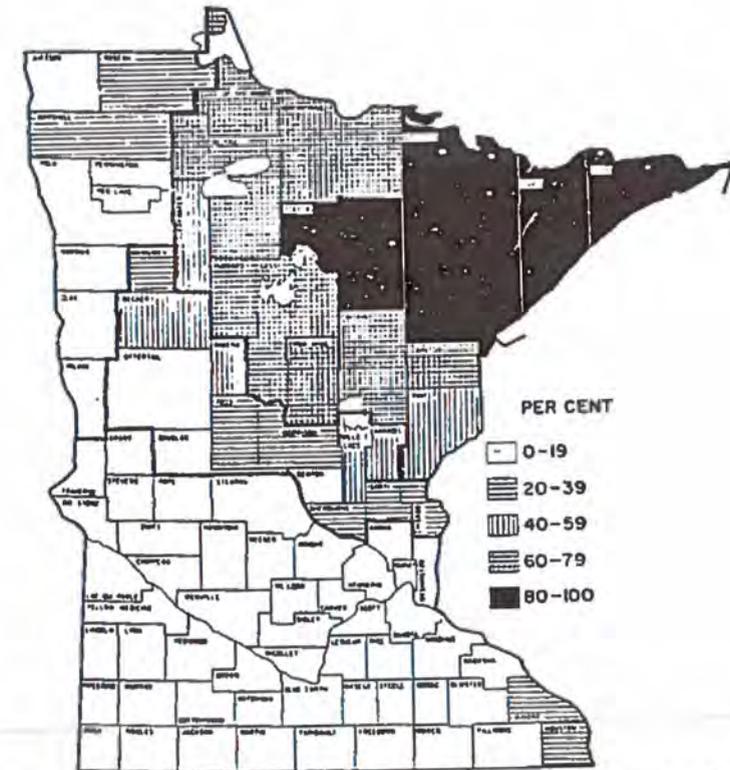


Figure 7. Percentage of total land area in each county occupied by commercial forest land, 1953.

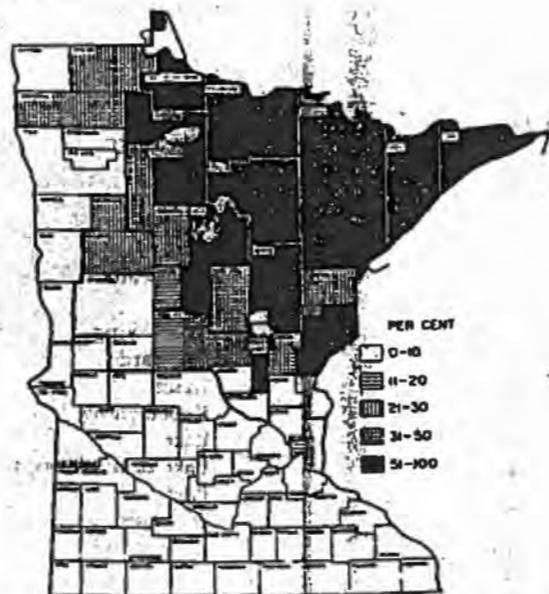


Figure 8. Public ownership of commercial forest land by counties, 1953.

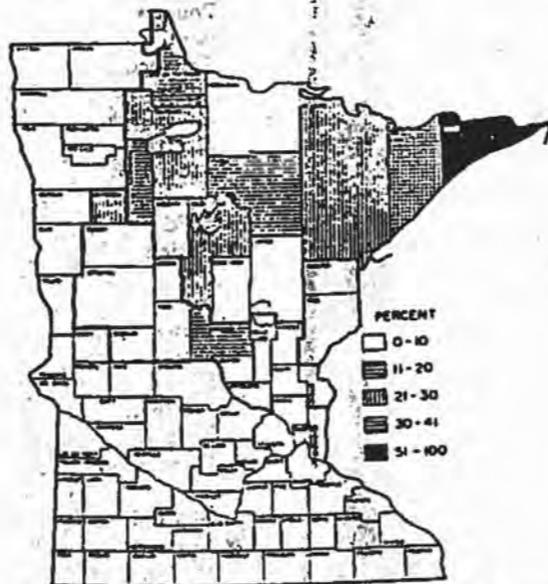


Figure 9. Federal ownership of commercial forest land by counties, 1953.

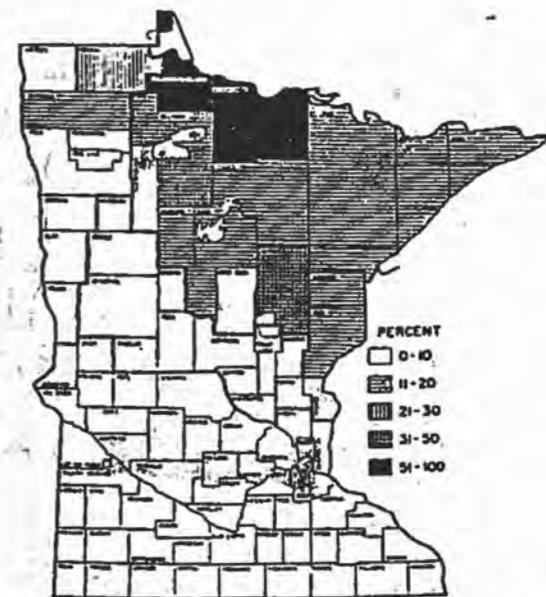


Figure 10. State ownership of commercial forest land by counties, 1953.

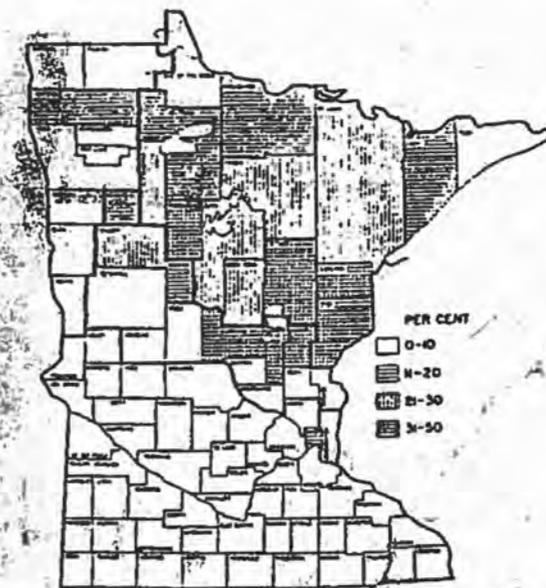


Figure 11. County ownership of commercial forest land by counties, 1953.

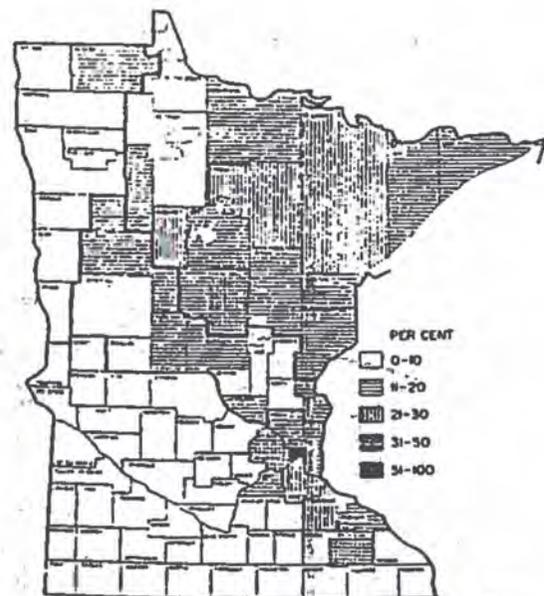


Figure 12. Industrial and other private non-farm ownership of commercial forest land by counties, 1953.

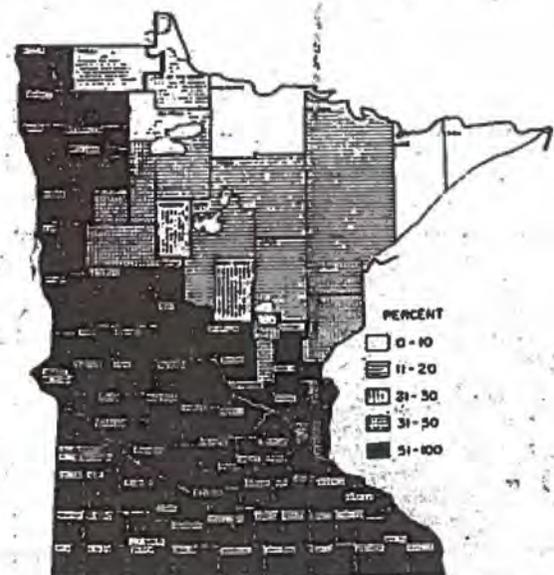


Figure 13. Farm ownership of commercial forest land by counties, 1953.

Table 3. Distribution of Trust Fund Land by Regions, Counties, and Classes, 1958.

REGION & COUNTY	SCHOOL ACRES	SWAMP ACRES	UNIVERSITY ACRES	INT. IMPR. ACRES	TOTAL ACRES	PER CENT
Northwestern						
Clay	401	357	—	—	758	•
Kittson	17,828	16,096	—	—	33,924	1
Marshall	6,330	25,873	—	—	32,203	1
Norman	160	—	—	120	280	•
Pennington	1,482	778	—	—	2,260	•
Polk	2,147	586	—	—	2,733	•
Red Lake	997	40	—	—	1,037	•
Roseau	20,482	47,879	—	—	68,361	•
Wilkin	560	—	—	—	560	•
Northwestern Total	50,387	91,609	—	120	142,116	5
Central						
Becker	9,794	6,095	—	—	15,889	1
Benton	120	—	—	—	120	•
Chisago	202	—	—	—	202	•
Douglas	160	—	—	—	160	•
Isanti	280	—	—	—	280	•
Kanabec	4,678	—	2,587	—	7,265	•
Mahnomen	—	8,768	—	—	8,768	•
Mille Lacs	5,659	42	3,754	—	9,455	•
Morrison	4,800	131	—	160	5,091	•
Otter Tail	2,274	238	—	600	3,112	•
Sherburne	1,178	—	—	—	1,178	•
Todd	3,938	44	—	600	4,582	•
Wadena	4,426	2,389	—	—	6,815	•
Central Total	37,509	17,707	6,341	1,360	62,917	2
Northeastern						
Aitkin	56,825	87,426	—	—	144,251	6
Beltrami	21,670	39,884	—	—	61,554	2
Carlton	12,334	7,516	—	—	19,850	•
Cass	34,472	103,360	2,033	3,611	143,476	5
Clearwater	5,142	17,337	—	—	22,479	•
Cook	83,748	47,636	2,151	—	133,535	5
Crow Wing	17,527	2,471	—	1,034	21,032	•
Hubbard	19,239	9,943	—	—	29,182	1
Itasca	105,297	192,862	6,018	901	305,078	12
Koochiching	183,669	669,863	—	—	853,532	32
Lake	84,110	79,407	—	—	163,517	6
Lake of the Woods	160	—	—	—	160	•
Pine	25,978	80	1,236	—	27,294	1
St. Louis	254,135	240,063	7,896	—	502,094	19
Northwestern Total	904,306	1,497,848	19,334	5,546	2,427,034	92

MINNESOTA LANDS

Table 3 (continued)

REGION & COUNTY	SCHOOL ACRES	SWAMP ACRES	UNIVERSITY ACRES	INT. IMPR. ACRES	TOTAL ACRES	PER CENT
Southern						
Anoka	682	—	—	—	682	*
Big Stone	94	—	—	—	94	*
Dakota	56	8	—	—	64	*
Fillmore	80	—	—	—	80	*
Goodhue	227	—	—	—	227	*
Grant	40	—	—	—	40	*
Houston	515	—	—	—	515	*
Kandiyohi	200	—	—	—	200	*
LeSueur	—	80	—	—	80	*
Martin	—	—	—	51	51	*
McLeod	1	—	—	—	1	*
Meeker	40	—	—	—	40	*
Pope	315	—	—	—	315	*
Renville	—	—	40	—	40	*
Rice	322	178	—	—	500	*
Scott	40	—	—	—	40	*
Sibley	—	1	—	—	1	*
Stearns	683	—	—	—	683	*
Traverse	40	—	—	—	40	*
Winona	280	2	—	—	282	*
Wright	20	—	—	—	20	*
	3,640	269	40	51	4,000	*
State-Acres	995,842	1,607,433	25,715	7,077	2,636,067	100
Per cent	38	61	1	1	100	

* Less than 0.5 per cent.
 Source: Department of Conservation, Division of Lands and Minerals (unpublished data).

Table 4. Receipts, Exclusive of K-V Funds, from Chippewa and Superior National Forests, 1949 to 1958.

YEAR	TIMBER	POWER	LAND USE	TOTAL
1949	\$ 259,924	—	\$ 14,209	\$ 274,133
1950	274,639	—	13,544	288,183
1951	432,351	—	15,139	447,490
1952	553,364	—	13,922	567,286
1953	513,528	—	19,727	533,255
1954	556,767	—	28,167	584,934
1955	532,078	—	24,081	556,159
1956	500,733	242	24,192	525,167
1957	509,569	14	26,291	535,874
1958	593,318	217	27,200	620,735
Total	\$4,726,271	473	\$206,472	\$4,933,216
Average	\$ 472,627	47	\$ 20,647	\$ 493,322

Source: Forest Service, Washington Office (unpublished data).

Table 5. Tree Farms by Regions, Counties, and Ownerships, October, 1959.

REGION AND COUNTY	INDUSTRIAL OWNERSHIP		OTHER PRIVATE		TOTAL PRIVATE		PER CENT
	NUMBER	ACRES	NUMBER	ACRES	NUMBER	PER CENT	
Northeastern							
Aitkin	—	—	23	1,929	23	2	1,929
Beltrami	1	160	35	2,423	36	4	2,583
Carlton	2	38,388	40	2,060	42	4	40,448
Cass	1	7,597	34	2,903	35	3	10,500
Clearwater	1	400	14	836	15	1	1,236
Cook	1	38,000	—	—	1	*	38,000
Crow Wing	1	3,800	10	480	11	1	4,280
Hubbard	2	8,358	58	7,176	60	6	15,534
Itasca	1	4,600	92	5,106	93	9	9,436
Koochiching	2	270,772	70	7,026	72	7	277,798
Lake	2	115,161	25	2,426	27	3	117,587
Pine	—	—	61	3,334	61	6	3,334
St. Louis	2	39,046	173	12,412	175	17	51,387
	16	526,282	635	48,111	651	63	574,393
Central							
Becker	1	100	7	619	8	1	719
Benton	1	20	11	618	12	1	638
Chisago	—	—	17	1,125	17	2	1,125
Douglas	—	—	1	6	1	*	6
Isanti	—	—	50	2,354	50	5	2,354
Kanabec	—	—	10	406	10	1	406
Mille Lacs	—	—	5	414	5	*	414
Morrison	1	400	7	889	8	1	1,289
Otter Tail	—	—	2	113	2	*	113
Sherburne	—	—	19	801	19	2	801
Todd	—	—	10	312	10	1	312
Wadena	—	—	5	251	5	*	251
	3	520	144	7,908	147	15	8,428
Northwestern							
Clay	—	—	2	51	2	*	51
Marshall	—	—	1	14	1	*	14
Norman	—	—	1	144	1	*	144
Roseau	—	—	5	372	5	*	372
	—	—	9	581	9	1	581

MINNESOTA LANDS

Table 5 (continued)

REGION AND COUNTY	INDUSTRIAL OWNERSHIP		OTHER PRIVATE		TOTAL PRIVATE			PER CENT
	NUM-BER	ACRES	NUM-BER	ACRES	NUM-BER	PER CENT	ACRES	
Southern								
Anoka	—	—	10	404	10	1	404	•
Blue Earth	—	—	4	58	4	*	58	•
Brown	—	—	1	90	1	*	90	•
Carver	—	—	7	248	7	1	248	•
Dakota	—	—	13	347	13	1	347	•
Faribault	—	—	1	79	1	*	79	•
Fillmore	—	—	10	396	10	1	396	•
Goodhue	—	—	13	542	13	1	542	•
Hennepin	—	—	18	496	18	2	496	•
Houston	—	—	5	261	5	*	261	•
Kandiyohi	—	—	4	59	4	*	59	•
Le Sueur	—	—	14	239	14	1	239	•
McLeod	—	—	1	13	1	*	13	•
Mecker	—	—	7	164	7	1	164	•
Nicollet	—	—	1	17	1	*	17	•
Olmsted	—	—	4	511	4	*	511	•
Pope	—	—	2	35	2	*	35	•
Ramsey	—	—	2	50	2	*	50	•
Renville	—	—	3	47	3	*	47	•
Rice	—	—	24	549	24	2	549	•
Scott	—	—	9	196	9	1	196	•
Sibley	—	—	3	74	3	*	74	•
Stearns	—	—	11	1,592	11	1	1,592	•
Wabasha	—	—	3	215	3	*	215	•
Waseca	—	—	3	59	3	*	59	•
Washington	—	—	21	646	21	2	646	•
Winona	—	—	9	256	9	1	256	•
Wright	—	—	18	499	18	2	499	•
	—	—	221	8,412	221	21	8,412	•
State	19	526,802	1,009	65,012	1,028	100	591,814	100

Source: Keep Minnesota Green (unpublished data).

APPENDIX II

LAND RESOURCES OF HUBBARD COUNTY—
OWNERSHIP AND MANAGEMENT

JOHN H. ALLISON

Hubbard County is located in the formerly forested, still largely wooded part of northern Minnesota. It is rectangular in shape, being approximately 24 miles wide east to west, and 42 miles long south to north. It has an area of approximately 642,000 acres (about 1,000 square miles), of which 596,480 acres is land surface and 45,450 acres is water surface.¹

GENERAL DESCRIPTION

TOPOGRAPHY AND ALTITUDE

The county's topography is dominated by a central ridge running from east to west. This ridge consists of rather rugged morainic hills which have strongly discouraged agricultural activities within the area covered by them. To the north, except where interrupted by local outwash plains, is a rolling till plain. To the south, is a belt of lower hills several miles wide containing numerous lakes, with many miles of sandy beaches. Summer resorts are highly concentrated within this belt. To the south of the lake country is quite a wide belt of outwash plains which extend southward into Wadena County. Hubbard County's agricultural activities are largely concentrated upon this outwash plain, to which they were almost entirely confined for the first 20 years following the start of settlement.

¹ Except as otherwise noted, the statistical material in this report comes from the following sources:

"The Forest Resource of Hubbard County," Office of Iron Range Resources and Rehabilitation, St. Paul, Minnesota, 1953.

"Land Economic Survey of Hubbard County, Minnesota," University of Minnesota Agr. Exp. Sta. and Minnesota Department of Conservation, Bul. 317, 1935.

"Preliminary Report of Hubbard County Land-Use Planning Committee," County Committee in Cooperation with County Extension Service, University of Minnesota, and Bureau of Agr. Econ., U.S.D.A., 1940 (mimeographed).

Census of Agriculture, 1954.

Records of the Hubbard County Auditor and Supervisor of Assessments.

The county is immediately adjacent to the source of the Mississippi River and is entirely within its drainage basin. Its elevation above sea level ranges from approximately 1,300 feet on the east line of the county at Benedict Lake to approximately 1600 feet in Lake Alice township, near Lake Itasca.

CLIMATE

The average annual precipitation at Park Rapids for the 49-year period from 1885 to 1933 was 24.4 inches, with a maximum of 39.0 inches in 1906 and a minimum of 14.3 inches in 1910. For the 25-year period from 1931 to 1955 the mean precipitation was 26.57 inches, with a maximum of 38.75 inches in 1944 and a minimum of 16.93 inches in 1934. The summers are moderately warm with the temperature very occasionally rising above 90° F. The frost-free period averages 127 days at Park Rapids but only 95 days in that part of the county adjacent to Itasca State Park, which is only 25 miles north of and approximately 75 feet higher than Park Rapids. The winters are cold with many periods of subzero temperatures. Snowfall averages about 40 inches, the ground usually being covered with snow from early November until about April 1 in the fields and until mid-April or later in the woods.

SOILS

All of the soils in the county are the result of glacial action. The continental type of glacier which produced them melted away only about 12,000 years ago. They can be divided into the seven major groups listed in Table 1.

The "medium to heavy loams" are highly concentrated in the northern part of the county with outlying islands in Akeley and Straight River townships. Although they are by far the most fertile of the soils in the

Table 1. Soil Groups of Hubbard County.

GROUP	ACRES	PER CENT	
		OF COUNTY LAND AREA	PER CENT OF GROUP IN CROPLAND, 1930
Medium to heavy loams	175,936	30	12
Sandy loams with sandy or gravelly subsoils	120,256	20	42
Light sandy soils	108,480	18	10
Sandy soils with heavy subsoils	34,432	6	Practically none
Rough stony lands	69,184	12	" "
Poorly drained mineral soils	14,464	2	" "
Peats	73,728	12	Less than 100 acres
Total	596,480	100	14.3

county, their clearing and conversion into cropland, because of distance from railroad transportation, did not really get started until after 1900. It then went forward slowly because of the difficulty and expense of removing the conifer and hardwood stumps. Since the middle 1920's further clearing has progressed at a snail's pace.

The "sandy loams with sandy or gravelly subsoils" are concentrated in the southern part of the county, where they are found on the Hubbard and Park Rapids prairies. They were the soils first brought under cultivation, partly because of the ease with which they could be cleared. Over 50 per cent of the county's present cropland area is upon this group of soils. Originally they were quite fertile, but their fertility has been severely depleted and must be supplemented by application of manure or suitable commercial fertilizers. These soils are rather seriously subject to drought.

The "light sandy soils" are widely scattered over the county. Over 15,000 acres in this group have been cleared and put into crops. But crop yields are so low that farming them is a hazardous undertaking and often ends in failure.

The "rough stony lands" are concentrated in the central ridge area of the county. They are not suitable for farming. Neither are the other three groups of soils — the "sandy soils with heavy subsoils," the "poorly drained mineral soils," and the "peats." All three of these soil groups are distributed widely over the county, especially the peats. In the bogs, the peat is usually between 2 and 8 feet in depth.

FOREST COVER

When the white man arrived in Hubbard County he found the "medium to heavy loams" and the "rough stony lands," which together include about 40 per cent of the area, covered with a mixed hardwood-conifer forest in which the white and Norway (red) pine were the important species to the lumbermen. The "sandy loams with sandy or gravelly subsoils," representing 20 per cent of the area, together with the "light sandy soils" representing 18 per cent of the area, were covered by a forest dominated by jack pine (probably as the result of past fires) intermixed with a considerable volume of Norway pine. The "peat" bogs were covered with swamp conifers in which either tamarack or black spruce dominated.

Following the logging of the "virgin" pine, aspen and birch have taken over most of the "rough stony lands," the "poorly drained mineral soils," and the "medium to heavy loams," which include 43.5 per cent of the area of the county. These species have also taken over a large part of the sandy loams. They have been greatly aided in doing so by the repeated forest fires which preceded and followed commercial logging. In the "second growth" the jack pine has continued to dominate most of the light sandy soils.

EDUCATION AND WELFARE

The total school pupil population of the county has remained almost unchanged for 30 years, being 2,635 in 1930 and 2,768 in 1958. There has been, during the last 30 years, a great reduction in the number of school districts. High schools are operated at Park Rapids, Akeley, Nevis and Laporte. Pupils are also sent to high schools in Bemidji, Cass Lake and Walker. Tuition rates for pupils coming from outside the high school districts are \$300 per year at Park Rapids, Nevis, and Akeley, \$323.25 at Laporte, \$314 at Bemidji, and \$295 at Cass Lake and Walker. School expenditures in 1955 totaled \$660,125, of which local taxation contributed \$257,922 (39.1 per cent) while state aids contributed \$402,203 (60.9 per cent). Recent school building construction (additions to existing buildings) has placed a heavy burden on the districts supporting the high schools, especially on the Laporte District.

Welfare in 1955 cost \$358,045, of which the county contributed 30 per cent, the state 22.2 per cent, and the federal government 47.8 per cent.

SETTLEMENT AND DEVELOPMENT

EARLY EXPLORATION

Henry R. Schoolcraft traversed the northwestern part of the county in July, 1832, while seeking the source of the Mississippi River. On his way back from the discovery of Lake Itasca, while crossing over from Leech Lake to the Crow Wing River, he traversed the southeastern corner of the county. The area included within the county appears to have been used only very lightly by the Indians. The U. S. land survey reached the most southerly townships in 1860. The survey township and section subdivision of the county was completed in 1879. Hubbard, Henrietta, and Straight River were the first townships to be subdivided, and Schoolcraft and Lake Hattie were the last.

ARRIVAL OF SETTLERS

By the early 1870's the region was being penetrated by timber cruisers. They reported the existence of the Hubbard and Park Rapids prairies and of the areas covered with good stands of timber. The southern part of the county was within the indemnity limits of the Northern Pacific Railroad land grant. During the 1870's this railroad established ownership to most of the odd-numbered sections within the extended limits of its land grant.

In 1879 and 1880 settlers who had unloaded their livestock and other possessions at Verndale (a station on the Northern Pacific Railroad half way between Staples and Wadena) flooded into the southern part of the county, quickly occupying the Hubbard and Park Rapids prairies, together with the lightly wooded forest lands surrounding them. These

settlers homesteaded the even-numbered sections while purchasing the odd-numbered sections from the railroad company. In 1880 the Fish Hook River was dammed at a point opposite the present Great Northern Railroad station at Park Rapids. This dam, 15 feet high, provided power for a joint grist-saw mill, the sawmill side of which was equipped with a circular saw. The village of Park Rapids grew around this mill, where much of the lumber required by the local settlers was sawed.

Hubbard County was created in 1883 out of territory previously included within the western part of Cass County. It originally included only 16 townships, to which 12 were added in 1895, bringing the total number to 28. All of the added area, except a small portion of one township previously included in Beltrami County, had formerly been a part of Cass County.

A branch line of the Great Northern Railroad, originating in Sauk Center, reached Park Rapids in 1891 and was extended in 1899 to Akeley, Walker, and Cass Lake, where it connected with the Great Northern line from Foston to Cass Lake built in 1898. The Northern Pacific Railroad's Brainerd-Bemidji branch also was constructed across the northeastern part of the county in 1899. Such agricultural settlement as has taken place north of the central east-west ridge mostly came in after the building of the railroads to Bemidji.

LOGGING OPERATIONS

In 1893 Eilersick and Sons completed a steam-powered sawmill, equipped with a single circular saw. This mill operated only during part of the year when the near-by lakes were free of ice, from about May 15 until about November 1. In 1897 the circular saw in this mill was replaced by a single band saw which raised its 10-hour per day capacity to 50,000 board feet. In 1902 the mill was sold to "The Park Rapids Lumber Company," which continued to operate it during the lake ice-free season only but doubled its daily capacity by operating it 20 hours a day. It had to close down at the end of the 1910 season because of lack of sawlogs. For several years thereafter its planing mill still continued to operate part time on portable-mill timber hauled in to it for planing.

In 1899 the Red River Lumber Company built at Akeley a double-band mill with a 20-hour per day capacity of 375,000 board feet. This mill burned in November, 1909, and was replaced in 1910 by a mill moved there from Scanlon, Minnesota, which had a 20-hour per day capacity of 500,000 board feet. It completed cutting the available timber in 1915 and was dismantled in 1917. This was a railroad logging operation covering much of the central ridge and the areas immediately adjoining that ridge, both to the north and the south. Toward the north the logging railroads extended to Lake George, and to the west they extended to the eastern edge of Itasca Park. A number of portable or semi-portable sawmills were set up in the western and northern parts of

the county during the 1890-1915 period. These mills cut the virgin white and Norway pine not already logged and river-driven or rail-roaded to the large mills located at Akeley, Park Rapids, Motley, and Little Falls. These small mills later cut into lath, "grain-door" stock and box shooks most of the jack pine, of which there was a very considerable volume that had not been cut during the logging of the "virgin" white and Norway pine.

The first commercial logging of old-growth timber in the county was carried on during the winter of 1879-80 from a camp located on Palmer Lake. The logs were driven down the Crow Wing River to Motley, where they were milled. The next winter crews from logging camps located on Portage Lake and on the Shell River in Straight River township were active. The logs cut from these camps were driven down the Fish Hook and Shell Rivers to the Crow Wing River and thence probably to the sawmill then located at Motley.

Outside of the Hubbard and Park Rapids prairies and the lightly timbered areas surrounding them, most of the more heavily timbered lands passed through lumberman or lumber-company ownership before becoming available to farmer or land-speculator ownership. These timberlands were acquired through purchase from the Northern Pacific Railroad Company, directly from the U. S. Government at land sales held at St. Cloud, and through the use of soldier scrip. The 1862 homestead law was also used, both legitimately, through the purchase of land or timber from homesteaders, and illegitimately through the use of dummy homestead entries. Probably more than 75 per cent of the land area of the county passed through lumberman ownership during the "virgin timber" logging stage. Much of it was still in this form of ownership when it passed back into public ownership through tax forfeiture.

POPULATION

In its rural and village characteristics Hubbard County is a sample of a much larger district which includes the rural areas of Clearwater, Becker, Wadena, Crow Wing, and Cass counties and of that part of Beltrami County lying south of the Red Lakes. In all of this area the economy is one in which relatively low-productivity agriculture and forestry is combined with considerable lake-shore recreational use. According to the 1950 Census, the gross income of the average family in the region totaled about \$1,900 a year.

The sharp increase in the county's total population between 1890 and 1900 occurred while the homesteading of public land was proceeding most rapidly (Table 2). Between 1900 and 1910 there was a further increase in population, probably mostly rural, due to a moderate influx of settlers who expected to clear and put into cultivation the land which they were acquiring, chiefly by purchase. Between 1910 and 1920 there

Table 2. Population of Hubbard County, 1890-1956.

CENSUS YEAR	POPULATION		RURAL POPULATION		POPULATION PARK RAPIDS
	TOTAL	PER SQ. MILE	TOTAL	PER SQ. MILE	
1890	1,412	2.7			415
1900	6,578	7.1			—
1910	9,831	10.5	5,552	6.0	1,801
1920	10,136	10.9	7,050	7.6	1,603
1930	9,596	10.3	6,547	7.1	2,081
1940	11,085	11.9	7,305	7.9	2,643
1950	11,085	11.9	7,012	7.6	3,027
1956 (est.)	10,361	11.1	6,288	6.7	—

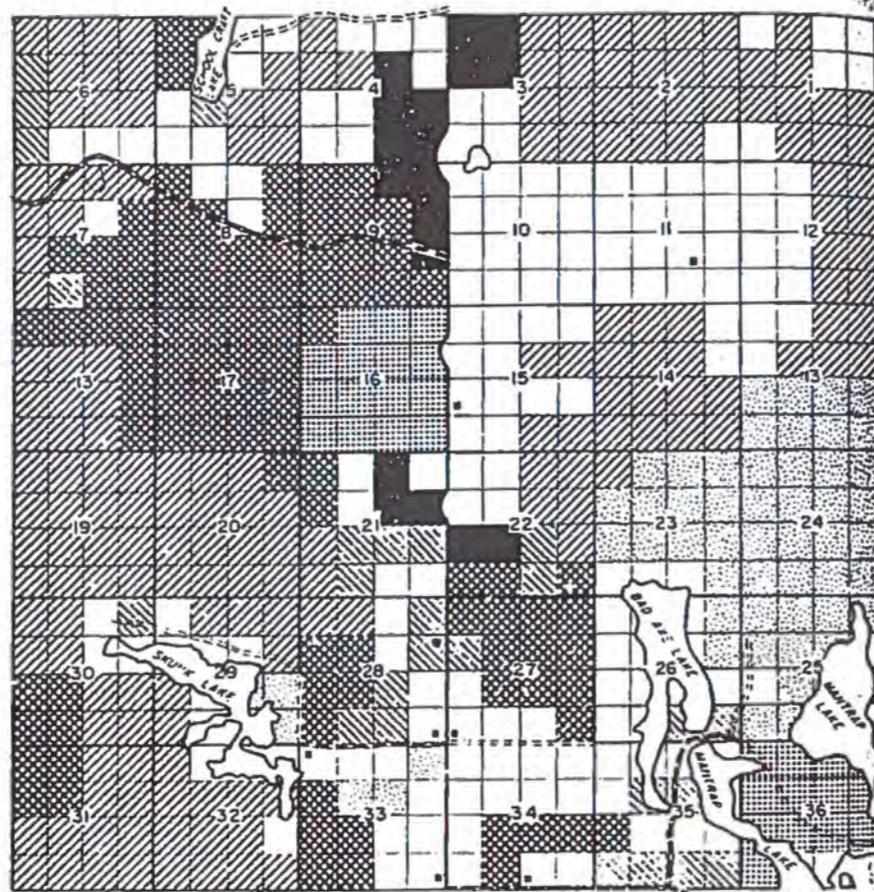
Note. The land area was 519 square miles prior to 1895, 932 square miles thereafter.

was about a 10 per cent increase in total population, all of it in the rural area, where the population increased about 25 per cent while the village population decreased about 30 per cent. The decrease was due mostly to the closing of the large sawmills located in Akeley and Park Rapids. Since 1920 the total population of the county has remained relatively stationary, while that of Park Rapids, the county seat, has grown moderately but persistently. With the continuous improvement of the county's highway system, Park Rapids is becoming more and more the shopping center of the county. The farm population reached its peak in 1925 at 5,550. By 1945 it had dropped to 5,001. As of 1956 it was estimated at 3,400. However, the number of persons who are using the rural area as a place to live, but who are not farmers, rose from 652 in 1940 to 2,888 in 1956.

TRANSPORTATION

By 1900 the southern and extreme eastern parts of the county were being fairly well served by railroads, the other parts only by poor earth roads. In 1917 the construction of the present state highway system reached the county. It is served by 141 miles of blacktopped state trunk highways, 323 miles of county state-aid highways (partly blacktopped, but mostly only gravelled), 200 miles of other county roads, and 596 miles of township roads, very little of which is gravelled.

The highway total is now 1260 miles, or 1.35 miles of public road per square mile of land area, a rather low figure when compared with the intensely cultivated southern agricultural counties of the state. In addition to the public highway mileage, there are 95 miles of Minnesota Division of Forestry access roads which are important in prevention and control of forest fires and to loggers operating on both publicly and privately owned lands, especially those located within the central ridge area.



COUNTY LAND:

	Sale Unrestricted		STATE LAND
	Sale Restricted		PRIVATE LAND
	Memorial Forest		Taxes Delinquent
	Farm House		Auxiliary Forest

Figure 1. Land ownership in Clay Township (T. 142 N., R. 34 W.), 1956.

LAND USE - GENERAL

The uses to which land in Hubbard County is being put are summarized in Table 3. Ownership is given in Table 4, and the pattern of ownership in a sample town is shown in Figure 1. The principal uses - agriculture, recreation, and forestry - will be discussed by ownerships in that order.

Table 3. Land Use Classification.

	ACRES
Non-Forest Land	
Urban and Industrial (1956 Tax List)	2,763
Rights of Way	9,237
Cropland (1955 Census)	72,700
Other Farm, Non-forest Land (1955 Census)	22,300
Miscellaneous Non-farm, Non-forest Land	32,030
	139,030
Forest Land	
Within Itasca State Park	4,644
Farm Woodlands (1955 Census)	103,145
Non-farm Woodlands	349,661
	457,450
	596,480

Table 4. Land Ownership, 1958.

	ACRES
Federal Lands	
Indian Trust Lands	200
Other Federal Lands ("flowage," 59; BLM, 8)	67
	267
State Forest Land	
Trust Fund (School and Swamp)	15,306
Acquired	
By Purchase ¹	32,108
From County, "50-50" lands	16,592
	64,006
Other State Lands	
Itasca State Park	4,644
Trust Fund (School and Swamp)	13,032
Div. of For., outside State Forests	307
Highway Dept. (gravel pits)	14
	17,997
	329

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Table 4 (continued)

	ACRES	
County-managed Tax-forfeited Lands		
Memorial Forests (Approved & Proposed)	51,534	
Conservation Lands	58,453	
Unrestricted Lands	24,923	
Still to be Classified	10,706	
		145,616
Miscellaneous Public Lands		
Other County Lands (gift, gravel pits, etc.)	73	
School Forests	475	
School Districts, Churches, Cemeteries, etc. (tax free) ¹	400	
Hamline University (tax free)	719	
Park Rapids Airport	445	
Highway and Public Roads Rights of Way	9,650	
		11,762
Public Ownership		
Farm Ownership (1954 Census)	215,375	239,648
Railroad Rights of Way	850	
Within Villages ²	4,518	
Other Forms of Private Ownership	136,089	
Private Ownership		
		356,832
All Ownerships		
		596,480

¹Purchased by the Department of Conservation during the years 1935-36, inclusive. The gross income from these lands is divided equally between the state and the county in the same manner as is the income from tax-forfeited lands within state forests which have been transferred to the state under the "50-50" law.

² Includes the 102 acres of tax-free land in the Bad Axe Lake Camp owned and operated by the Red River Valley Council, Boy Scouts of America.

³ Includes non-urban lands within village corporate limits.

LAND USE - AGRICULTURE

OVER-ALL SITUATION

A number of pertinent facts pertaining to the agricultural development of Hubbard County are brought out by Table 5. Perhaps the most important items are:

1. The relatively high percentage (48) of improved land per farm in the relatively small area (10 per cent) of the county in farm lands in 1890. This situation is accounted for by the high 1890 concentration of farms in the prairie townships of Hubbard and Todd.

2. The peak in the number (1,682) of farms in 1935, probably brought about by the return to rural areas of part of the then recently urbanized families because of the economic depression of the 1930's.

3. The peaks in total farm area of 202,448 acres in 1925 and of 236,966 acres in 1950, due to the agricultural booms of World Wars I and II.

4. The peaks (\$46.52 in 1920 and \$35.15 in 1955) in the average value per farm acre of farm land and buildings, apparently due to World War I boom and high hopes for the future of agriculture held during the 1915-1925 period, and to inflation plus actual added investment in the 1915-1955 period.

5. The relative stability of farm ownership from 1920 to 1955. However, a real change in the agricultural picture, a long-term downward trend in the area in farm ownership, may be setting in. This is as yet only uncertainly indicated by the 21,000-acre loss in total farm ownership between 1950 and 1955, but there are indications that the 1960 census will record further losses in number of farms and in total farm area. Since 1920 agricultural activities in the county have been quite definitely concentrated in the seven southern townships of Hubbard, Todd, Henrietta, Straight River, White Oak, Badoura, and Nevis, and in the three northeastern townships of Hart Lake, Helga, and Farden.

USES OF FARM LANDS

An outstanding feature of the county's agriculture, compared with that of the southwestern part of the state, is the relatively small portion (42 per cent) of the average farm in cropland and the relatively large portion (58 per cent) in other forms of land use (Table 6).

Table 5. Agricultural Development by U. S. Census Periods.¹

YEAR	NUMBER OF FARMS	TOTAL ACRES	PER CENT OF TOTAL LAND AREA	ACRES PER FARM	PER CENT OF AVERAGE VALUE		
					FARM IMPROVED	OF LAND	PER FARM ACRE
1890	194	35,000	10	180	48	\$ —	\$ —
1900	641	99,162	17	155	30	1,587	11
1910	843	151,984	25	180	37	3,766	18
1920	1,252	191,996	32	153	42	7,133	47
1925	1,442	202,448	34	140	43	4,931	35
1930	1,304	197,034	33	151	43	4,400	29
1935	1,682	228,247	38	136	42	2,318	17
1940	1,489	208,311	35	140	36	2,009	14
1945	1,284	220,591	37	172	38	2,796	16
1950	1,331	236,966	40	178	42	6,066	33
1955	1,095	215,375	36	197	42	7,012	35

¹ Total land area of county: 335,971 acres in 1890, 596,480 acres in 1900 and thereafter.

Table 6. Uses of Farm Land, 1955.

LAND USE	ACRES	PER CENT
Cropland	90,495	42.0
Woodland, pastured	63,025	29.3
Woodland, not pastured	39,527	18.4
Other land	22,328	10.3
	<u>215,375</u>	<u>100.0</u>

Table 7. Value of Farm Products Sold, 1954.

PRODUCT	VALUE	PER CENT
Field Crops	\$214,947	9.9
Forest Products	43,719	2.0
	<u>258,666</u>	<u>11.9</u>
Dairy Products	946,602	43.5
Livestock & Livestock Prods.	732,947	33.7
Poultry & Poultry Prods.	238,589	10.9
	<u>1,918,138</u>	<u>88.1</u>
	<u>2,176,804</u>	<u>100.0</u>

Table 7 emphasizes the great importance of dairy-livestock-poultry products, especially dairy products, and the relatively small importance of field crops and forest products as sources of cash income to Hubbard County farmers. However, this was not the situation in the 1880's and 1890's. Wheat, oats, potatoes, and hay were then the more important farm products, probably because of the local market for flour, potatoes, and horse feed provided by the settlers themselves and still more importantly by the near-by logging camps which were rapidly cutting the virgin pine surrounding the Hubbard and Park Rapids settlements.

With the disappearance of the logging camps and the arrival of railroad transportation at Park Rapids in 1891 and at Nevis, Akeley, Laporte, and Bemidji in 1899 and 1900, the importance of wheat, oats, and hay as cash crops markedly decreased. By 1910, dairy and other livestock products had become more important as sources of farm cash income than were field crops. By 1930 dairy products had become the most important item in cash income.

In recent years, particularly since 1950, there has been a considerable increase in total milk production in the county, but a decrease in the number of farms reporting the production of milk. In other words, the number of dairy herds is decreasing while their average size and production are increasing.

AREAS AND INCOMES PER FARM

The relatively large proportion of farms with small acreage and small income per farm is noteworthy. Of the 832 commercial farms enumerated by the Census in 1954, 40 per cent were less than 180 acres in size and only 3 per cent were larger than 500 acres. Gross income was less than \$1,200 on 23 per cent of these farms, less than \$2,500 on 63 per cent, and exceeded \$5,000 on only 11 per cent. There were also 284 non-commercial farms (part-time and residential), the income from which was less than \$250.

An undetermined number of the low-income farms is occupied by old people who have retired and who are receiving annuities or pensions sufficient to cover their living expenses. The rest must secure enough income from off-farm labor to take care of their needs or "go on relief." Census reports show that in 1954, 50 per cent of the farm operators engaged in off-farm work and that 25 per cent had other income in excess of that received from farm products sold.

PUBLIC AIDS

As of January 1, 1959, 28,805 acres (31.8 per cent of the 1954 Census total) of cropland had been approved for inclusion in the Soil Bank program. This program must be reducing materially agricultural activities in the county. Rumor has it that a number of farms have been bought by persons from outside of the county and put under this program. No attempt was made to substantiate this rumor. Of the 18,508 acres entered under the program prior to July 1, 1958, 3,850 acres (20.8 per cent) have been planted to trees, while 14,658 acres (79.2 per cent) were put into other permanent cover crops. Probably about the same distribution will apply to the additional 10,000 acres recently approved for inclusion in the "conservation reserve."

Hubbard County is being given special attention in the Agricultural Stabilization and Conservation Program ("A.S.C."). A "rural development agent" is assigned to the county and is devoting full time to its agricultural problems. He is working with about 75 families and believes that the program is improving very materially the economic situation of most of them.

The University of Minnesota's Agricultural Extension Service has a county agent assigned to the county. He is working with many farm operators.

The federal Soil Conservation Service is cooperating with A.S.C. but its activity in the county is very limited.

The Division of Forestry in the Department of Conservation has a forester, with headquarters at Park Rapids, who works on forestry problems with woodland owners of less than 1,000 acres. Much of his time is spent with farmers.

WOODLOT ACTIVITIES

Table 8 provides information on woodlot activities in the agricultural picture.

Table 8. Forest Products Obtained from Farm Woods.

PRODUCTS	1949		1954	
	NUMBER OF FARMS	QUANTITY OF PRODUCT	NUMBER OF FARMS	QUANTITY OF PRODUCT
Firewood	877	13,831 cords	673	11,028 cords
Fence posts	383	35,181 posts	316	48,890 posts
Pulpwood	138	2,857 cords	119	2,506 cords
Sawlogs	208	1,807 M.bd.ft.	170	816 M.bd.ft.
Value of products		\$55,305		\$43,719

For the time being, at least, the farm woodland as a source of farm income appears to be of decreasing importance. However, publicly owned and also non-farm privately owned woodlands may be and probably are of considerable importance to the approximately 25 per cent of the farm operators who obtain part of their annual gross income from work off their farms. Actually the ratio of farmers cutting forest products in their farm woodlands to the total number of farmers in the county has remained almost unchanged at between 60 and 65 per cent. In U. S. Census records the high year for farm forest products sales was 1944, when they reached \$154,738. It probably will be a long time before they reach that value again. World War II brought a great increase in market value for all forest products, but especially for lumber and pulpwood. During the 1920's and 1930's much jack pine had accumulated on the southern Hubbard County farms. Suddenly, in the early 1940's, the farmers along with many others realized that the sandy land jack pine had real value; and they proceeded to sell it either as stumpage or in the form of lumber and pulpwood. During the early and middle 1940's there was a very active market for tax-forfeited jack pine timberlands. News of the sales of such lands by the county at then almost unbelievably high prices rapidly penetrated to the farmers owning merchantable jack pine. Now there is very little merchantable jack pine left on the farms.

SUMMARY

Among the basic uses of land, as measured by gross income produced, agriculture was in first place from 1915 to 1955. However, the acreage in cropland was nearly stationary from 1925 to 1950, and since then has shown a declining trend. The probability that this trend may continue for many years is supported by the decline in the number of farms from 1,682 in 1935 to 1,095 in 1955, and in the farm population from 6,550 in 1925 to 3,400 in 1956. Another use of land, for recreational purposes, may very soon be, if it is not already, more important in Hubbard County's economy than agriculture.

LAND USE - RECREATION¹

GROWTH OF INTEREST

The creation of Itasca Park in 1891 and the coming of a railroad to Park Rapids in that same year soon brought a trickle of tourists to this region. They were primarily interested in seeing the source of the Mississippi River. En route from Park Rapids to Lake Itasca they passed near several of Hubbard County's best resort lakes. By 1900 at least three and perhaps five or six resorts had been established in the Park Rapids area. By 1920 there were ten resorts in active operation. Also a number of farms were taking in summer guests. By 1930 the number of active resorts had grown to 82, while 2,579 acres had been platted and were in process of development as recreational projects. Areas being used as sites for lake shore cottages or as unplatted resorts covered another 3,700 acres.

By 1956, according to the town assessment books, the total number of platted resorts had grown to 92 with a combined area probably in excess of 4,000 acres, while the unplatted lake shore acreage being used for recreational purposes had grown to over 16,000 acres. The latter area is divided into about 1,100 units, ranging in size from a small fraction of an acre to over 100 acres per unit. Many of these units do not as yet have buildings on them, but it is patent that they are being held as lake shore cottage sites. Approximately 125 of these units have been developed as unplatted resorts.

Neither from the point of view of public revenue nor of community income was the summer visitor of much importance until after 1930. But by 1940 he had become of real importance, and by 1956 of great importance, especially to the villages of Park Rapids, Nevis, and Akeley and to considerable sections of the county, particularly the lake-studded area lying directly south of the central ridge.

According to a 1930 survey there were an average of 1,118 guests per day at the commercial resorts during that year's summer season and another 179 guests per day at the farm resorts within the county. These figures represent 83,861 tourist days for the commercial resorts and 16,313 for the farm resorts. Of these tourist days, 71 per cent for the commercial resorts and 77 per cent for the farm resorts were accounted for by people coming from outside of the state. A very approximate estimate places their expenditures while in the county at not less than

¹ This section is based on information obtained from the township assessment and tax payment record books for 1956 through the courtesy of County Auditor, Dell Leaman and County Supervisor of Assessments, Harvey Larson; from the "Land Economic Survey of Hubbard County, Minnesota"; from "Property Taxation in Selected Towns in the Forest Land Regions of Minnesota," Forest Taxation Inquiry Progress Report No. 9, U.S.F.S., 1930, mimeographed; and from "Hubbard County, Minnesota, A Preliminary Report of County Land-Use Committee" prepared by the County Land Use Committee in Cooperation with the County Extension Service, Univ. of Minn. and Bur. of Agr. Econ., U.S.D.A., 1940, mimeographed.

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\$400,000. No estimate was made of the number of persons or their expenditures for those using summer cottages owned by themselves.

By 1940 this form of use had grown to an estimated value of not less than \$600,000.

For the summer of 1958 the number of summer residents plus the number of tourists spending one or more nights in Hubbard County resorts, including motels, was more than 35,000 families and their expenditures were in excess of \$2,500,000¹. This estimate includes expenditures made by resort owners and operators and by lake-shore residence owners for building materials and supplies needed for construction or repair of buildings. It also includes expenditures made by tourists and summer cottagers for hotel or motel lodging and boats, meals at restaurants, groceries, and such other expenses as gasoline, oil, and car service at garages and service stations.

Another measure of the value of recreational activities to the county for which there are more dependable statistics is that provided by the fish and game licenses issued by the Hubbard County Auditor. The number of these licenses and the amount paid for them are listed in Table 9. The figures probably fall considerably short of the true total because many in-state and perhaps some out-state visitors buy their licenses outside of the county.

TAXATION

One contribution to the economy of the Hubbard County community which can be measured quite accurately is the real estate taxes paid by the lake-shore cottage owners and by the tourists, through the operators of commercial resorts. The amount of this contribution and its relationship to the total amount of real-estate taxes levied on rural (non-village) property are shown in Table 10.

The great growth in importance of lake-shore lands used for recreational purposes as a source of tax revenue, especially since 1939, is striking. The number of acres involved is small, but the values are large.

This situation is not the result of over-assessment of lake shore property. As determined by the Minnesota State Department of Taxation the ratio of "assessed values" to "sale values" of lake-shore summer resident and resort property in Hubbard County is essentially identical with the same ratio for agricultural property. This statement does not mean that the owners of lake-shore resident and resort property are not paying relatively higher taxes than the owners of agricultural property. They are. But they are doing so because of the "property classification" act of 1913 as amended by the "homestead exemption" act of 1933. Even without the leverage of the property classification and homestead laws

¹ Correspondence with Neal K. Budrow of the Mississippi Headwaters Resort Owners Association.

LAND RESOURCES OF HUBBARD COUNTY

there would still have been, between 1929 and 1956, a large increase in the assessed value and in the tax liability of lake-shore property as contrasted with agricultural property because of the many miles of fine lake shore for which there is a high demand.

Table 9. Fish and Game Licenses Issued by Hubbard County Auditor.

KIND	1940		1957	
	NUMBER	PAID	NUMBER	PAID
Ind. Fishing	2,700	\$ 989.55	1,845	\$ 2,452.95
Non-Res. Ind.	4,250	10,143.90	17,168	61,804.80
Non-Res. Comb.	3,000	10,141.20	—	—
Coupons	1,000	748.80	—	—
Res. Small Game	1,200	846.90	1,210	2,178.00
Trappers	350	289.80	64	144.00
Fishhouse	300	261.00	611	549.90
Non-Res. Small Game	15	247.50	47	1,057.50
Res. Big Game	1,400	2,091.60 (deer)	1,844 ¹	5,808.60 ¹
Res. Big Game Seals	1,400	290.50	—	—
Non-Res. Big Game Seals	5	None	—	—
Non-Res. Big Game	5	" (deer)	8 ¹	361.80 ¹
White Fish & Tags	50	9.90	—	—
Inland Herring	50	3.60	—	—
Spearing Fish	—	—	914	822.60
Wild Life Stamps	—	—	1,254	1,254.00
Res. Deer (Bow & arrow)	—	—	11	34.65
Others (mostly resident combination fishing)	—	—	2,183	3,926.70
Total	14,335	\$26,064.25	27,159	\$80,395.50

¹ Using gun.

Table 10. Relationship Between Real Estate Taxes on Lake-Shore Recreational Property and on All Rural Property.

YEAR	TAX-PAYING LAND USED FOR RECREATIONAL PURPOSES		ASSESSED VALUE OF LAND USED FOR RECREATIONAL PURPOSES		PER CENT OF TOTAL ASSESSED VALUE OF ALL RURAL LANDS	
	ACRES	PER CENT OF TOTAL RURAL TAX-PAYING LAND	VALUE	PER CENT OF LAND USED FOR RECREATIONAL PURPOSES	TAX LEVY ON LANDS USED FOR RECREATIONAL PURPOSES	PER CENT OF TOTAL RURAL REAL ESTATE
1929	6,291	1.10	\$100,143	2.63	\$ 6,841	2.76
1939	Not Reported		172,563	9.87	21,375	8.45
1956	20,800 ¹	6.03 ¹	987,141	50.29	165,077	49.44

¹ Includes platted area, estimated at 4,500 acres. Unplatted area totals 16,240 acres.

SITUATION IN LAKE EMMA

The 1926-1956 land-use record of the town of Lake Emma (T 141 N, R 34 W) will now be examined for the purpose of securing a more detailed view of the development of recreational use in the county.

PHYSICAL CHARACTERISTICS. The southwest corner of this township lies approximately 4.5 miles north northeast of Park Rapids. The Park Rapids-Lake George highway passes through it, near its center, from south to north. To the west of it lie Potato, Blue, and Pickerel Lakes; to the east, Big Sand, Emma, Mantrap, and the Bottle Lakes. On this highway the Emmaville store is located on the north line of the township.

Topographically the township is moderately hilly. Loamy sands and sandy loams predominate. In 1875 jack pine was probably the predominant forest cover, although there was enough Norway pine to justify the loggers in cutting most of it. Jack pine still predominates in the second-growth forest cover over most of the township. However, in the north-western part aspen predominates, and it is here that one finds most of the 1800 acres of tax-forfeited land. About 6,450 acres (36.5 per cent) of the township, according to the assessor's 1956 classification, is in farm ownership. Of this area only about 25 per cent is in cropland.

Some 25 lakes which are wholly or partly within the township cover 5378 acres, almost 23.5 per cent of its total area. They have many miles of beautiful beaches. Recreational use of the lake-shore lands began about 1900. By 1925 it had become so extensive that it was beginning to press agriculture for first place as a source of public revenue. According to the 1956 assessment book, there are now 17 platted resorts, covering a total of over 800 acres, and more than 30 unplatted resorts. Also, there are some 170 "descriptions" of lake-shore sites upon 95 of which summer homes or cottages have already been built, leaving 75 sites for future development. There is thus room for a very considerable expansion in the recreational use of the town's lake shores, with resulting increase in public revenue.

ASSESSED VALUES AND TAXES. Table 11 summarizes the land-use and public-revenue aspects of this form of resource use. Some lake-shore lands are not suitable for recreational use and should remain in the

Table 11. Comparison of Real Estate Assessments and Taxes on Lands with Assessments and Taxes in Lake Emma.

YEAR	LAKE SHORE RESORTS AND PRIVATE HOME SITES-ACRES	PER CENT OF TOTAL TAX-PAYING AREA	ASSESSED VALUES		REAL ESTATE TAXES	
			DOLLARS	PER CENT OF TOTAL ASSESSMENT	DOLLARS	PER CENT OF TOTAL
1926	4,065	23.92	33,704	31.66	1,671	31.35
1940	2,859	—	36,304	57.52	4,536	59.55
1946	2,997	21.71	44,381	68.86	6,769	70.20
1956	3,328	23.17	179,545	82.87	28,758	85.86

"farm," "timberland," or "public ownership" classifications, but it is probable that some of the lands now in these classifications will ultimately move into lake-shore recreational use.

It would perhaps be better to use "full and true" values rather than "assessed" values in Table 11, but "full and true" values were not readily available for 1940 and 1946. For 1926 the assessor's "full and true" value for the recreational lake-shore real estate was \$101,112; for all real estate in the town it was \$315,484. The corresponding figures for 1956 are \$526,670 and \$669,505, respectively. The ratio of the "full and true" value of the real estate used for recreational purposes to the "full and true" value of all rural real estate was 32.05 per cent in 1926 and 73.66 per cent in 1956.

Only one of the 170 tracts listed as unplatted lake-shore recreational lands is tax delinquent. However, that tract covers 6.75 acres and has a building on it. The 1956 tax on this tract was \$40.24. Of the lands listed by the assessor, 280 acres, with a total tax \$61.79, were delinquent in 1957, and 200 acres (tax \$41.49) were forfeited to the state on September 24, 1957. No land listed by the assessor as "farm" was forfeited during 1957, but 331.74 acres were tax delinquent to the extent of \$137.47. This tax delinquent "farm" land was concentrated in Section 10.

SUMMARY

To summarize, the recreational use of lake-shore lands is very important in and to Hubbard County. Such use is especially important in and to the rural town of Lake Emma, where it is more important than to any other town in the county. For the county, it produces approximately 50 per cent of the real estate tax revenue obtained from its rural area; for Lake Emma, it produces about 86 per cent of that revenue.

Are the county and the towns taking the steps which they should take to protect the public's interest in proper access to the county's many lakes? Should not the county secure ownership to more beaches and other lake-shore property than it now possesses through the workings of the tax-forfeiture laws? Are there not legal actions which the county should take to protect its ownership of tax-title, lake-shore lands from "re-purchase" by private citizens?

LAND USE — FORESTRY

FOREST AREA AND VOLUME

Approximately 440,600 acres (74 per cent of the land area of the county) is in commercial forest (1958). Of this area, 337,700 acres (76 per cent) is in non-farm ownership divided as follows:

County — 145,700 acres, 43 per cent.

Private — 131,000 acres, 39 per cent.

State — 61,000 acres, 18 per cent.

The 1952 merchantable volume of timber on the commercial forest

area was estimated at 1,450,000 cords, 48 per cent of which was softwood and 52 per cent hardwoods, mostly aspen. The county owned 33 per cent of this volume, the state 17 per cent, farmers 24 per cent, and other private owners 26 per cent. Each of these types of ownership will be discussed separately.

COUNTY FORESTRY

TAX FORFEITURES AND SALES. In Hubbard County the private ownership of land reached its peak in 1926, when 579,982 acres (97 per cent) of its total land area was privately owned. Up to 1921 there was scarcely any rural land tax delinquency, but by 1926 tax delinquency had risen to 179,000 acres and by 1930 to 261,000 acres. Forfeiture to the state of these tax delinquent lands began in 1936, following the enactment of legislation which provided the counties and their subdivisions with a major incentive for forfeiting long tax-delinquent lands through giving them 90 per cent of the revenue to be obtained from such lands together with a major say as to their management and sale.

By 1939 the tax-forfeited area had reached 157,511 acres. Land on the delinquent roll not yet subject to forfeiture had dropped to 157,460 acres, and land still paying taxes had dropped to 210,597 acres. Since 1939 the tax-delinquent list has fallen very materially while the tax-forfeited area has continued to rise, although very slowly because annual sales of tax-forfeited lands have nearly offset new forfeitures. The total area forfeited to 1946 totaled 225,347 acres, but the net acreage rose only to 163,380 acres because of sales.

Since 1946 the net acreage of forfeited land has fallen very slightly, from 163,380 acres to 162,317 acres as of 1958. The latter figure was arrived at by adding the 16,592 acres of tax-forfeited lands transferred to the state Division of Forestry prior to 1958 under the provisions of the "50-50" law to the acreage, 145,725 acres, of tax-forfeited lands actually under the control of the county. Actually, for the 18 years from 1940 to 1957, inclusive, new tax forfeitures have been almost exactly offset by sales and "re-purchases," which they exceed by only 200 acres per year. However, during the five years from 1953 to 1957, inclusive, the average rate of forfeiture has been twice that of sales (approximately 2,200 acres versus 1,100 acres per year).

The first sales under the current program were made in 1937. They included sales of tax-forfeited lands and of timber without the land. The income received from these sales was, and still is, applied (1) to the payment of the expenses incurred in making the sales and (2) to the paying off of such indebtedness as may be a lien against the tract of land or timber stumpage sold. Whatever is left is divided 40 per cent to the school district, 30 per cent to the county, 20 per cent to the town, and 10 per cent to the state.

When the sales of tax-forfeited lands and timber were initiated, Hub-

bard County and a number of its towns and school districts were quite heavily in debt. By 1946 most, if not all, of these debts to which income from tax-forfeited land sales could be applied had been paid off, mostly from such sales. During the nine years from 1937 to 1945, inclusive, the disposal of 62,542 acres of unplatted lands, 51,604 by sale and 10,838 through "re-purchase" (over which the county has no control) produced a gross income of about \$200,000, while the disposal of platted lands, mostly by sale, produced an additional gross revenue of about \$67,000.

The total incomes from sales and "re-purchases" and the total costs of making those sales are shown in Tables 12 and 13. The distribution of this income between platted and unplatted lands for the 1937-1945 period is an estimate based upon incomplete records, but the 1946-1957 record is complete. During this latter period the proportion of the gross income accruing from the disposal of platted lands has dropped to about 5 per cent. In other words, most of the platted property which has gone through tax forfeiture was sold or "re-purchased" prior to 1946.

RECEIPTS AND COSTS. During the period from 1937 to 1952 the County Board appraised the land and timber to be sold with the aid of the local staff of the State Division of Forestry (Table 12). Beginning with 1953 an Iron Range Resources and Rehabilitation (I.R.R.R.) forester was assigned to the county and has since been the County Board's official

Table 12. Receipts and Costs Connected with the Disposal of Tax-Forfeited Lands and Timber, 1937-1952, Inclusive.

YEAR	RECEIPTS ¹	COSTS	NET INCOME
1937	\$ 1,927	\$ 1,180	\$ 747
1938	15,005	848	14,157
1939	8,377	559	7,818
1940	16,956	2,331	14,625
1941	26,346	2,334	24,012
1942	31,709	2,056	29,653
1943	41,640	2,056	39,584
1944	61,347	2,574	58,773
1945	63,656	2,508	61,148
1946	102,105	3,308	98,797
1947	43,445	3,710	39,735
1948	62,933	4,076	58,857
1949	26,816	2,868	23,948
1950	28,807	2,889	25,918
1951	54,944	4,606	50,338
1952	37,356	1,326	36,030
Total	\$623,482	\$39,229	\$584,253
Ave. per year	38,967	2,452	36,516

¹Total income from sales less refunds.

Source: County auditor's annual "Financial Statements of Hubbard County."

MINNESOTA LANDS

advisor in the management of the county's tax-forfeited lands and in the sale of the timber thereon. During this latter period county expenditures have been at a considerably higher level than they were during the earlier period (Table 13). During that period the county was carrying on a capital-resource liquidation program, almost exactly parallel to that carried on in the county between 1899 and 1915 by the Red River Lumber Company. By 1953 the county had liquidated the greater part of its more valuable jack pine and is now left in possession of a much lower value forest in which aspen is the dominant tree. Since then the county, aided by the Office of Iron Range Resources and Rehabilitation, has been managing this property as a capital resource. The county must share in the cost of such management.

PROSPECTS. Assuming that the county now plans to retain indefinitely a large portion of its tax-forfeited lands and to operate them as a going forestry enterprise, what does it have to work with? In 1952, the I.R.R.R. completed an intensive study of the county's forest resources. Since then the acreage in county ownership has changed only slightly. Hence, the use currently and for some time to come of the I.R.R.R. records, estimates, and proposals is justified.

Detailed estimates of volumes by species and ownership are not available in "The Forest Resources of Hubbard County," but on total volumes by ownership classes, the county is credited with owning 352,400 cords, of which 48 per cent are conifers. Locally jack pine is much the most important of the conifers. Table 14 gives unpublished data available to the county forester which is very pertinent to planning and carrying on the management of the county's forest lands.

Only about 134,500 acres (84 per cent) of the county's land ownership is classified as forest, and of this area, only 113,000 acres is at present

Table 13. Receipts and Costs Connected with the Disposal of Tax-Forfeited Lands and Timber, 1953-1957, Inclusive.

YEAR	RECEIPTS			COSTS			NET INCOME
	LAND	TIMBER	OTHER PRODUCTS	TOTAL	COUNTY	I.R.R.R.	
1953	\$21,013	\$18,158	\$ 686	\$39,857	\$ 5,446	\$ 4,520	\$ 34,411
1954	15,047	15,750	744	31,541	5,027	4,926	26,514
1955	9,446	16,371	534	26,351	5,247	5,193	21,104
1956	18,110	19,178	530	37,818	7,467	5,004	30,351
1957	13,927	24,280	452	38,659	7,802	5,143	30,857
Total	77,543	95,158	2,946	174,226	30,989	24,786	143,237
Average per yr.	15,509	19,032	589	34,845	6,198	4,957	28,647

Source: County auditor's annual "Financial Statements of Hubbard County" and I.R.R.R.

LAND RESOURCES OF HUBBARD COUNTY

productive. Also, large portions of the 113,000 acres of the latter area are in understocked stands or in very young stands which will not become merchantable for 20 or more years. Consequently, the recommended "allowable cut" must be considerably below the estimated current annual growth. Tables 14 and 15 show the annual growth on county-owned forest lands and compare the actual cut with the "allowable" cut. The "allowable" cut is a compromise between the growth and the volume of the stands actually available for cutting.

Hasty consideration of Tables 12 and 13 might cause one to conclude

Table 14. Forest Types and Annual Growth on County Lands.

TYPE	AREA ACRES	PER CENT	ESTIMATED GROWTH IN CORDS			PER ACRE
			CURRENTLY MERCHANT- ABLE	CURRENTLY NOT MER- CHANTABLE	TOTAL	
White and Norway Pine	997	0.7	440	33	473	.47
Jack Pine	21,403	15.9	2,570	3,059	5,629	.26
Spruce	3,673	2.7	460	231	691	.19
Spruce-Fir	1,958	1.5	220	236	456	.23
Tamarack	2,024	1.5	560	393	953	.47
Cedar	65	—	—	14	14	.21
Aspen	69,156	51.5	9,360	13,461	22,821	.33
Aspen-Birch	9,918	7.4	170	2,974	3,144	.32
Northern Hard-woods-Oak	2,746	2.0	390	387	777	.28
Lowland Hardwoods	949	0.7	50	124	174	.18
Brush or Grass	21,631	16.1	—	—	—	—
	134,520	100.0	14,220	20,912	35,132	.26

Table 15. Allowable Cut Versus Actual Cut on County Lands.

SPECIES	ALLOWABLE CUT	ACTUAL ANNUAL CUT (AVE.)	
		1951-52	1953-57
----- CORDS -----			
White and Norway Pine	110	8.5	11.6
Jack Pine	3,160	3,986.5	2,791.6
Spruce	360	329.0	267.8
Balsam	230	393.5	194.8
Tamarack	240	33.5	155.2
Cedar	20	—	0.2
Aspen	7,870	2,849.5	2,524.0
Birch	840	1.0	28.6
Others	1,390	8.5	12.0
	14,220	7,610.0	5,985.8

that non-technical management as represented by the actual cut in 1951 and 1952 was more successful than the more intensive management which has controlled cutting during the 1953-57 period. Such a conclusion would probably not be correct. In this county there is an active market for jack pine, but a sluggish one for aspen and a very poor one for birch and the other hardwoods. Prior to 1953 the jack pine was overcut. Since then the cut of jack pine has been held at such a level that it will be available for cutting indefinitely into the future. Considering jointly area, volume, and value, jack pine is the most valuable species in the county part of the forest complex. Continued overcutting would in time have resulted in the almost complete discontinuance of income from that species and the severe falling off of income from the forest property as a whole.

The low cut of aspen, birch, and other hardwoods is due to lack of markets, which in turn is due to their low rating as sources of lumber and wood pulp. Past fires and, to a less extent, past logging practices are responsible for the large area and relatively large volume of aspen and other hardwoods. The soils of the county are not favorable to the production of high-quality aspen and birch. Markets for low-quality aspen, birch, and other hardwoods are urgently needed if the lands occupied by these species are to produce a reasonably satisfactory income. Rather intense and perhaps long-continued research in the forest products field will be necessary if such markets are to be developed.

The relatively poor financial results of the forest management program sponsored by I.R.R.R. since 1953 should not be charged against this program. They are due primarily to the fact, already noted, that a very large part of the valuable jack pine which the county came into possession of between 1935 and 1945 was dissipated by sales of land and timber between 1940 and 1952. Also, the "re-purchases" of more than 10,000 acres during that period took much good jack pine away from the county.

Hubbard County as of 1958 finds itself the managing owner of approximately 146,000 acres of land of which about 135,000 acres are classed by I.R.R.R. as "productive forest lands," that is, lands which, until recently, carried merchantable stands of timber. Of this area about 16 per cent has been so completely denuded by logging, fire, and, in some cases, by clearing, that natural re-establishment of the forest cover cannot be expected for a long time to come. Much of this denuded area is covered with brush. Artificial reforestation, probably planting, will be required to restore it to productivity.

The currently productive part of these lands contains 352,400 cords of merchantable wood, 170,500 cords (48 per cent) of which are softwoods. Only a very small portion of this merchantable timber is large enough for conversion into lumber.

In view of its area and the quantity of pulpwood timber growing on it, this land constitutes a very sizable and valuable property. What should the county do with it? To answer this question requires asking and answering other questions.

QUESTIONS. Should the county try to sell immediately all or the greater part of this property? Probably it could not do so even if it wished.

Should the county zone against sale those forties which are located in areas of heavy forfeiture? Quite extensively it is really doing so by use of the "memorial forest" and "restricted sale" classifications. But the use of these classifications may not be as effective in preventing people from locating in areas where school and road services are excessively expensive as would "zoning."

Should the county zone against year-round settlement areas of scanty population and small crop production, either buying out the owners of such isolated and uneconomical living places or exchanging better located county lands for theirs? St. Louis County has gone far in the use of its zoning authority. Wisconsin, which twenty or more years ago zoned against new settlement in areas where tax forfeiture had been heavy, appears to have found the best method to be the moving of families from areas with excessive cost for school and road services.

Sales of land in small units (40's, 80's, etc.) are favored in this county. Should larger sales also be considered for the purpose of establishing forestry enterprises?

There still are several thousand acres of tax-forfeited lands within the state forests. Much of this land is covered with aspen and birch of low value. Should the county turn over more of these lands to the State Division of Forestry under the "50-50" law? For a long time to come these lands will be low-income producers.

Presumably the county is going to retain most of its tax-forfeited lands, especially those covered with softwoods. Should it not then establish the office of "Land Commissioner" and hire a man competent to look after the administration and technical management of its lands? This would involve an additional expenditure for salary. Can the county expect to have I.R.R.R. provide indefinitely technical and managerial supervision for its forested lands?

There are over 20,000 acres of cutover lands now covered with brush or grass. During the last six years, the county has planted 546 acres of these lands. Should it not attack this problem more vigorously — that is, increase very materially the rate at which planting is carried on?

The county seat is in the southwest corner of the county. There is a considerable area of tax-forfeited land in the northern part and especially in the northwest corner of the county, forty or more miles away by road from the county seat. Should not the county give serious consideration to the establishment of some form of field quarters for the use of

its forestry employees when they are working in that part of the county?

Is there not plantation release, thinning, and other timber stand improvement work which the county ought to have carried out on its forest lands? In doing such work might it not be able to get back some valuable service from the persons being carried on "general relief"? Marinette County, Wisconsin, has quite advantageously so used its "poor relief" funds.

Do the County Board and other county officials take as much interest in the problems and the accomplishment of their forester and his aides as they should?

Should not the county have a strong, active, and interested land-use committee — a committee which will continuously act as advisor to county officials with reference to its land-use problems, particularly those pertaining to the development or disposal of tax-forfeited lands?

To protect the county's interest in tax-forfeited land values and to enable the state to give good title to such lands as the county chooses either to retain or to sell, the legislature should adopt a statute of limitations which would limit to two or three years the period within which a forfeited land "description" could be "re-purchased" by its former owner or his assignee. Many tracts of valuable tax-forfeited timberland have been taken away from the county through "re-purchase," with resulting receipts much less than would have been received if the timber had been auctioned off, either with or without the land.

The county auditor reports 42,250 acres as being included within "memorial forests." As of October, 1958, the forester's maps show approximately 51,500 acres in, or recommended for inclusion in, "memorial forests" with one township still to be classified. To what extent do ordinances approved by the County Board cover the establishment of these "memorial forests?" Should further action be taken?

STATE FORESTRY

Hubbard County contains the whole of the Paul Bunyan and parts of the Foothills and Mississippi Headwaters state forests, with a net state-managed area of 64,006 acres, or 14 per cent of the forest lands of the county. Upon the 48,700 acres of "acquired" land within this area the county receives half of the gross income from the sales of timber and other products. In 1956 these receipts totaled only \$1,586.68, or 3.2 cents per acre. The land producing this income is covered mostly with young or "off-site" aspen, from which the income should ultimately be much larger. The remaining 15,306 acres of state forests in Hubbard County are trust-fund lands, the income from which is covered into the proper state trust funds.

On the Paul Bunyan State Forest, which includes the 48,700 acres just referred to, the state has planted nearly 4,000,000 coniferous trees on "off-site" aspen lands. Additional planting is planned for the future.

Some aerial spraying for the release of pine plantations from competing hardwoods is planned. Considerable trail construction and maintenance work has been done in Ts 141, Rs 32 and 33 and in Ts 142, Rs 32, 33, and 34. Public access has been developed at two points on Mantrap Lake and will soon be developed at one point on Waboose Lake. Wildlife is given careful consideration in the operation of the state forests, and a considerable area within the Paul Bunyan is a game refuge.

In the state forests, protection from fire, diseases, and insects and silvicultural management are as effective as legislative appropriations to the State Division of Forestry permit.

Trust fund lands outside of state forests comprise approximately 13,000 acres. On these lands the sale of timber is handled by the State Division of Forestry, while the sale of land, which is available for purchase, is handled by the State Division of Lands and Minerals.

PRIVATE FORESTRY

Non-farm privately owned forest lands total approximately 140,000 acres. These lands are in small holdings, mostly of less than 1,000 acres. Only one holding reaches 5,000 acres in area.

As of October, 1958, 6,130 acres of this area were included within 46 approved "tree farms."

"Auxiliary forests" covering 7,015 acres have been approved. The county auditor reports that as of September, 1958, no applications were pending.

The State Division of Forestry has a "farm and small woodland owner" forester stationed at its Park Rapids headquarters. He assists and gives advice in forestry matters to private owners whose forest holdings do not exceed 1,000 acres. This forester, whose activities extend to several adjoining counties, is assisting some 25 or 30 owners in the management of their forest lands.

At least one private owner, the Northwest Paper Company, with a part of its holdings in "auxiliary forest," is applying intensive forest management to its forest property.

Current tax forfeitures of approximately 2,000 acres a year are concentrated in the small ownerships.

The marked lack of interest which most of the private owners have in forestry as a use for land is probably due largely to their belief that agriculture will ultimately need these lands. That need will then enable them to recover, or more than recover, the money put into them. But will agriculture, in our times, need these lands? Probably not. Nevertheless it is this hope that keeps most of the owners of this class of land from letting them go to tax forfeiture.

Can the natural growth of the forest on these lands justify their retention in private ownership on the basis of the periodic income,

received at the time of cutting the timber, which they are producing? Could the application of forestry practices to them produce enough additional income to justify their retention in private ownership?

TAXES AND INCOMES. To answer these questions one must estimate the probable productivity of these lands in dollars and cents, with and without the application of forestry practices. One must also estimate the costs which an owner must meet if he is to hold these lands. Taxes are the most important item in those costs. Let us check into that phase first, then into probable amount of income production.

Table 16 shows that there are great differences from town to town in the current tax load on forest lands. No attempt will be made to explain these differences, which are probably typical of irregularities appearing erratically throughout the entire twenty-eight townships in the county. The variance in the tax load from town to town appears to depend much more on the needs of the town and the local agricultural rating of the forest lands than upon their ability to carry the tax load placed upon them.

Table 16. Tax Loads (1956 Levy) on Forest Lands in Four Representative Towns.

TOWN	ACRES	FULL & TRUE VALUE		TAX		TYPE OF TOWN
		TOTAL	PER ACRE	TOTAL	PER ACRE	
Lake Emma	4,233	\$31,554	\$8.45	\$1,747.62	\$0.412	Recreation
Crow Wing Lake	6,652	29,302	4.40	1,645.63	0.247	Agriculture
Clay	2,740	15,535	5.60	650.08	0.210	Forest
Schoolcraft	1,287	5,045	3.92	251.03	0.195	Forest
Total and Ave.	14,912	\$81,236	\$5.45	\$4,494.36	\$0.301	

As elsewhere in the county, tax forfeiture in these four towns has been confined almost entirely to forest lands. Assuming that all forfeited lands are forest lands, tax-forfeited lands now make up 32 per cent of the forest area in Crow Wing Lake, 46 per cent in Lake Emma, 82 per cent in Clover, and 91 per cent in Schoolcraft.

In 1926 the tax levy on forest lands was \$0.26 per acre in Lake Emma, \$0.23 in Crow Wing Lake, \$0.26 in Clay, and \$0.31 in Schoolcraft. There was practically no tax delinquency in these towns in 1920. By 1930 tax delinquency had become very extensive, especially in Clay and Schoolcraft. As of 1925 there remained very little merchantable timber available for cutting in any of these towns; and as yet private owners did not consider forestry as a use for land. If the land could not be converted into cropland or improved pasture, did it have any value? Most owners thought not. By 1930 it had become clear that agriculture would not need these forest lands for a long time to come. Hence, the very large tax forfeiture among them.

But since then, stands of aspen, jack pine, and other forest trees have

developed on these lands. Can these stands carry the tax loads being placed upon them? Let us balance their uncared-for productivity (Table 17) against taxes plus other costs.

Table 17. Productivity of the Two Principal Species in Hubbard County.

SPECIES	AVERAGE		VALUE PER ACRE
	ANNUAL GROWTH CORDS PER ACRE	STUMPAGE VALUE PER CORD	
Jack Pine	.26	\$3.00	\$0.78
Aspen	.19	1.00	0.19

On the sandy soils of Crow Wing Lake and Lake Emma the dollar productivity of the jack pine has been great enough to cover the taxes and leave an appreciable balance to apply on supervision and return to the capital invested in the land and timber. But in Clay and Schoolcraft, where aspen is the chief species, the income falls considerably short of the amount needed to cover taxes.

Even a jack pine owner might now feel worried about tax costs. A check on a group of "descriptions" reasonably well stocked with jack pine, and scattered among three townships in the southeastern part of the county, showed that in the 1958 levy they were taxed at an average rate of \$0.47 per acre. That rate, on the basis of nature-established productivity, leaves little in the way of income for management and return upon capital.

PROSPECTS. To what extent would application of good forestry practices increase the annual income earned by the forest property through increased growth? Growth plots within managed jack pine stands indicate that it might be possible to increase the merchantable annual growth of that species to about 0.50 cords per acre per year. Such a rate of growth would meet the 1958 real estate ad valorem tax levy and still leave a fairly comfortable margin.

As for the aspen type, which from the standpoint of area is the most important type in the county, there appears to be no chance that its dollar productivity can be increased to a point beyond the amount now being taken by taxes.

Hence, the prospects for obtaining a satisfactory return on capital invested in the practice of forestry, under present taxes, are at best only fairly good for the jack pine type, which occupies about 20 per cent, and are non-existent for the aspen type, which occupies approximately 50 per cent of the forest lands of the county.

Before the prospects become reasonably bright for the private owner to obtain a dependable and sizable net income from the use of land for the production of timber, there must be a real change in the public attitude toward forest production as a use for land. The public gives lots of lip service to the practice of forestry, but when it comes to lightening the tax load upon forest property it quickly becomes lukewarm.

To bring about a favorable climate for the practice of forestry the public, which really controls the assessment of privately owned property, must realize that taxation must be based upon the ability of the property taxed to pay the tax levied upon it.

A way to limit the tax take to the forest property's ability to pay has been partially provided by the "auxiliary forest" and the "tree growth" tax laws. Under the "auxiliary forest" law, a major part of the forest property's tax liability is postponed until income is received from the sale of timber. Under the "tree growth" law, the tax is payable annually, as are other taxes, but the amount of the tax is tied directly to the productivity of the forest. But the listing of a forest property under either of these laws requires approval by the County Board of Commissioners, which is usually difficult to get. Hence, the tax climate under which private forestry must be carried on in Hubbard County, as well as elsewhere in Minnesota, is not favorable.

CONCLUSION

Hubbard County was first settled in the late 1870's. Commercial logging started about the same time and spread gradually throughout the county. By 1920 most of the coniferous timber had been cut and attempts to farm the cutover lands had fallen far short of the anticipated success. Recreational use of lake-shore lands started slowly, but has spread rapidly since 1930.

Today the county's economy is based on agricultural and forest lands of relatively low productivity and on lake-shore lands of steadily increasing value for recreational purposes. In 1956, the tax levy on these lake-shore lands constituted approximately half of the tax levy on all rural real estate. Forest lands fail to make the contribution to the economy of the county in the form of employment and taxes of which they are potentially capable. This failure is due to their depleted condition resulting from heavy cutting and fires, to the lack of interest in forest management on the part of small woodland owners, and to tax levies which are unduly high in relation to the productive capacity of the land.

The county itself is responsible for the management or disposal of lands comprising about a fourth of the total land area of the county, which have come to it by tax forfeiture. Its major problems in the field of land use concern the handling of these lands, the encouragement of forestry on private lands by equitable taxation, and the assurance of adequate public access to its many attractive lakes. To a large extent these problems also exist in the rural areas of Clearwater, Becker, Wadena, Crow Wing, and Cass counties and of Beltrami County south of the Red Lakes. Joint consideration of the problems by these and other counties with somewhat similar situations would do much to facilitate their solution.

APPENDIX III

LAND RESOURCES OF ITASCA COUNTY— OWNERSHIP AND MANAGEMENT

RUSSELL N. CUNNINGHAM

Itasca County, although not typical in all respects of northeastern Minnesota, serves very well to illustrate the kinds of land-use problems found in that area.

The existence of valuable iron mines differentiates Itasca County, St. Louis County, and to some extent Crow Wing County, from other counties in the northeastern group. The mines have a large effect upon the tax situation and the whole economy of the adjacent communities. Itasca County nevertheless shares with others in the northeastern group the serious problem of providing educational facilities and general governmental services to a small population scattered over a vast domain of primarily non-agricultural land.

The county contains large public forests under federal, state, and county control. County forests have been under management for seventeen years and must be rated as among the best cared for of all county lands in the state. Industrial forests are represented on a modest scale. Farm forests and miscellaneous private holdings are extensive and are fairly representative of the north country. Thus most of the problems associated with these several types of ownership can be observed in this locality.

ORGANIZATION OF LOCAL GOVERNMENT

COUNTY

Itasca County has the usual organization of county commissioners and the usual administrative setup. Its budget runs close to \$2.5 million a year. Reported receipts for county purposes in 1954 were \$2.35 million, of which 64 per cent came from the general property tax, 32 per cent from state aids, and 4 per cent from other sources.

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Some of the salient features of the tax situation are as follows:

1. The acreage of tax-paying land, as shown below, has become somewhat stabilized. The area on the tax roll is less than in 1930, but delinquency is also less.

	1930	1941	1957
		M ACRES	
Area on tax roll	1,350	694.4	607
Area tax delinquent	632	228.7	140 (estimate)
Area paying taxes	728	465.7	467

2. Assessed valuations went through the wringer shortly after 1930. They have only now returned to a level slightly above 1930, with a total of \$27.4 million.

3. Tax rates and tax levies have gone up drastically since 1930. The average tax per capita has more than doubled.

In general, the county and the towns have attempted to meet their rising financial needs by raising tax rates rather than by increasing property appraisals. In the case of mining property, however, valuations are determined by a formula which currently reflects changes in ore values, so that mine valuations are kept more in line with market values.

Failure to raise the assessed valuation on most rural and urban property to keep pace with rising market values has given the county a greatly undervalued tax base and a nominally extortionate average tax rate of 255 mills for all units of government combined.

TOWNSHIPS

The principal function of the 41 organized townships is to maintain local roads. In the 50 unorganized townships, the county applies a 21-mill levy against taxable property to provide for road maintenance.

In the organized townships the local levies in 1957 ranged from about 8 mills in Sago to 86 mills in Kinghurst, with an average of about 25 mills. The total levy of \$291,000 was double the levy of 1932. In view of the depreciation of the dollar during the intervening period, this does not suggest any upward trend in township activity.

Aside from the administrative aspect, the organized townships exercise considerable political influence. County officials are inclined to refer matters of local concern to township boards for advice. For example, if county land is to be offered in exchange, or is to be placed in a memorial forest, the land commissioner will seek the concurrence of the local board. Their advice is sought on applications for the listing of auxiliary forests. They participate in changes in the county zoning ordinance.

SCHOOL DISTRICTS

The taxable resources of the school districts in the county vary greatly. To partially equalize the tax burden, the county levies a 10-mill tax on

LAND RESOURCES OF ITASCA COUNTY

all property and apportions the receipts among the school districts on a per-pupil basis. Under this arrangement, the Deer River District gets back nearly \$3.00 for every dollar collected within its boundaries. The Grand Rapids District receives nearly two for one. The Keewatin District about breaks even; but the Coleraine District, in which mining property contributes 92.5 per cent of the assessed valuation, pays out two for one.

In addition to local tax levies, the school districts receive more than \$1,500,000 a year in state aid, which in 1955 amounted to 38 per cent of total receipts. School costs now exceed \$400 per pupil as compared with \$142 in 1940-1941. School taxes in 1957 amounted to 52 per cent of all property taxes in the county as against 40 per cent in 1941.

VILLAGES

Seventeen communities in 1950 accounted for about half of the county's population. These included Grand Rapids with a population of 6,019, eight mining villages with a population of 8,633, and eight other villages with a population of 2,614 supported by forestry, tourist business, and surrounding agriculture.

To prevent villages where the tax base is primarily mining property from levying excessive taxes for local purposes, the legislature has placed per-capita limitations on the levy. A number of items are excluded from these limitations, and recent amendments to the law authorize upward adjustment to keep pace with the consumer price index.

Local assessors in mining communities in adjoining St. Louis County have recently come in for considerable criticism for failing to assess non-mining property at reasonably adequate levels. Specifically, they have been criticized for omitting personal property entirely from the appraisal of a majority of residences. The temptation for underassessment is equally present in Itasca County.

PEOPLE AND SOURCE OF LIVELIHOOD

The population in 1955 was estimated to be 36,546. This amounts to 13.5 persons per square mile compared with 53.3 for the portion of the state outside of the fourteen northeastern counties.

The labor force is about 12,000, total personal income approximately \$50 million.¹

Iron mining is the primary economic activity. Including transportation of ores and some local processing, it gives employment to 3,000 to 4,000 workers, many on a year-long basis. In 1957 mining companies

¹The writer is indebted to Mr. Ed Becker, in charge of Rural Redevelopment Projects in northern Minnesota and stationed at the North Central Station of the University of Minnesota at Grand Rapids, and to Mr. George A. Rossman, publisher of the Grand Rapids Herald-Review, for most of the figures and ideas given here relative to employment and personal incomes in Itasca County.

paid about 71 percent of the taxes for county purposes, 70 percent of those for school districts, 83 percent of those for townships, and up to 97 percent in some villages.

Forestry, including cutting, hauling, and processing pulpwood and other forest products is a second dominant activity in the county. Employment may reach 2,000. Contribution in taxes is considerably less than from mining but nevertheless is vitally important to the county and its subdivisions.

Recreation is becoming increasingly important as a source of employment and income for county residents. It has been estimated that 800 people make a business of servicing tourists. Income approaches \$3,500,000.

Agriculture falls behind mining and forestry in employment and income. Nevertheless, farming is important. In addition to giving full employment to at least 400 commercial farmers, it provides many other men with a base where they can raise much of their food and obtain some cash revenue, and from which they can seek outside part-time employment. Of approximately 1,700 "farmers" in 1954, about three-fourths (1,281) found employment off the farm. Nearly 60 percent (1,006) obtained more income from outside work than from sale of farm products.

Other primary activities give rather limited employment and income. Professional services, local government, trade, etc. occupy the attention of some 5,000 persons.

Perhaps more than in the average situation these various economic activities are interdependent. Wholesome development of any of them quickly stimulates the well-being of others, and any serious slump in one is immediately reflected in the others. Because of the dominance of mining and forestry, it is very important that public policy contribute to the maintenance and growth of these activities. Specifically, it will mean much to the local economy to have a system of taxation which will encourage marginal mines to continue operation, spur new exploration, and stimulate new developments with low-grade ore. In forestry, not only should all public forests be operated for sustained yields, but similar good management should be made possible and attractive on industrial forests and farm woods.

CHARACTERISTICS OF FOREST LANDS

The land area of Itasca County is 2,663 square miles or 1,707,300 acres, making it the third largest county in the state (after St. Louis and Koochiching). About four per cent of the area is cropland; less than one per cent is used for mining; a limited area is included in villages and rights-of-way. The remainder, nearly 95 per cent, is made up of forest, brush, and marsh land.

Table 1 summarizes some of the important characteristics of forest lands in different ownerships. About a fourth of the forest land consists of softwood types — principally spruce and balsam fir of pulpwood size or smaller. Somewhat more than half consists of hardwood types — principally aspen. About a fifth of the forest land is non-stocked. Of the latter, nearly three-fourths is swampy in character.

Table 2 indicates average volumes of timber per acre, allowable cuts, and actual cuts for softwoods and hardwoods and for different classes of owners. The average volume of merchantable timber (sawtimber and pulpwood) per acre of forest land is only 4.4 cords, which indicates the generally immature status of the forest. The lowest average volume per acre is found on county lands, where it is less than half that on federal

Table 1. Characteristics of Forest Land in Different Ownerships.

OWNERSHIP	PER CENT OF LAND WHICH IS FOREST	PER CENT OF FOREST WHICH IS		
		SOFTWOOD TYPES	HARDWOOD TYPES	NON-STOCKED
Farm	63	26	62	12
Other Private	93	14	59	27
	—	—	—	—
All private	80	18	60	22
County	92	19	56	25
State	91	38	36	26
National forest	94	29	62	9
Other federal	91	18	64	18
	—	—	—	—
All public	92	28	51	21
	—	—	—	—
All owners	88	24	55	21

Table 2. Timber Volumes, Allowable Cut, and Actual Cut by Ownership.¹

OWNER-SHIP	VOLUME, 1950		ALLOWABLE ANNUAL CUT, 1950			ACTUAL CUT, 1948			
	TOTAL WOODS	SOFT- WOODS	TOTAL WOODS	SOFT- WOODS	TOTAL WOODS	SOFT- WOODS	HARD- WOODS		
	CORDS PER ACRE								
All private	3.9	1.5	2.4	.15	.05	.10	.26	.15	.11
County	3.2	1.2	2.0	.10	.03	.07	.05	.03	.02
State	4.4	2.5	1.9	.20	.11	.09	.10	.07	.03
Federal	7.2	2.9	4.3	.32	.11	.21	.07	.03	.04
	—	—	—	—	—	—	—	—	—
All owners	4.4	1.9	2.5	.18	.07	.11	.13	.08	.05

¹ The volume per acre and the estimated allowable cut per acre exclude firewood and some other low-grade material.

MINNESOTA LANDS

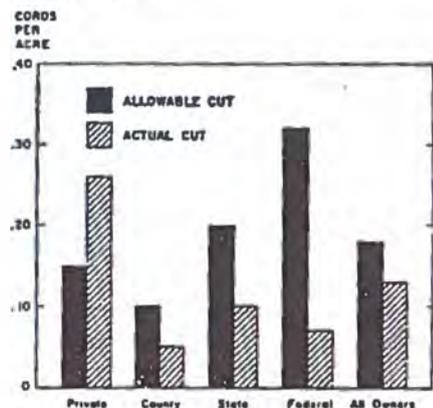


Figure 1. Comparison of estimated allowable cut, 1950, with actual cut, 1948, by classes of ownership.

lands. The substantially larger volume of hardwoods (mostly aspen) per acre is noteworthy.

Figures for volume per acre and estimated allowable cut are for the year 1950, those for actual cut for 1948 (Fig. 1). Since then the cut on private lands has declined somewhat, while that on public lands has increased moderately; but the situation as a whole has probably not changed materially. The actual cut on privately owned lands of all classes exceeds a desirable level, but the excessive cutting is occurring on farm woodlands and miscellaneous small holdings, not on industrial forests. On the other hand, the actual cut falls far short of the allowable cut on public lands. The gap is particularly noticeable on federal lands.

ORIGIN OF PRESENT LAND-USE PATTERN

Following the Revolution, all land in Minnesota became the property of the United States, subject to a right of occupancy by the various tribes and bands of Indians. As this right of occupancy was gradually eliminated, Congress proceeded to dispose of the government's title to large areas by grants to the state and by grants and sales to individuals and corporations.

During the period of heavy lumbering and the period of agricultural expansion which followed, about four-fifths of the land in Itasca County passed into private hands. The other fifth consisted of part of the original Minnesota National Forest, several hundred thousand acres of state land, and a comparatively small acreage of Indian land and federal public domain.

During the 1920's and 1930's the prospective income from neither forestry nor farming appeared commensurate with the mounting tax burden, and a large share of this land became tax-delinquent.¹ Some of

¹ In 1930 the county still carried nearly 1,360,000 acres on its tax roll, though nearly half (about 632,000 acres) was tax-delinquent. In 1957 only 606,800 acres of privately owned land were on the tax roll.

LAND RESOURCES OF ITASCA COUNTY

the abandoned land was purchased by the federal government to add to the Chippewa National Forest. The bulk of it, after an extended period of delinquency, was forfeited to the taxing agencies and came under the control of the county.

Since World War II, conditions for private land ownership have been somewhat more favorable and some private acquisition has been undertaken.

CURRENT OWNERSHIP AND MANAGEMENT OF FOREST LAND

The ownership of all land and of forest land in Itasca County in 1951, as determined by the Forest Service, is shown in Table 3 and Figure 2. Some changes have occurred since that time. Farm land declined to 225,464 acres in the 1954 Census of Agriculture. County land was only 432,173 acres in 1958. National-forest land, on the other hand, increased to 297,243 acres in 1958 through the purchase of Indian allotments. The 1951 figures are, however, convenient to use because they include considerable detail concerning the characteristics of the lands.

Table 3. Land Ownership, 1951.

CLASS OF OWNERSHIP	ALL LAND		FOREST LAND	
	ACRES	PER CENT	ACRES	PER CENT
Farm	268,200	16	168,300	11
Other Private	365,300	21	338,500	23
All private	633,500	37	506,800	34
County	438,100	26	405,200	27
State	335,200	19	305,000	20
National forest	285,000	17	268,400	18
Other federal	12,700	1	11,600	1
All public	1,070,300	63	990,200	66
All owners	1,704,300	100	1,497,000	100

Table 1 shows that 88 percent of all land in Itasca County is forest land. Even in the case of farm lands the percentage is 63. In all classes of public ownership it exceeds 90.

FARM OWNERSHIP

At least 1,630 of the 1,714 farms in the county have a large part of their area in forest. The average area of forest and wild land per farm is about 89 acres as compared with 30 acres in crops. Farm forests average somewhat better in quality than those in other private ownership (except industrial) and of about the same quality as those in public ownership.

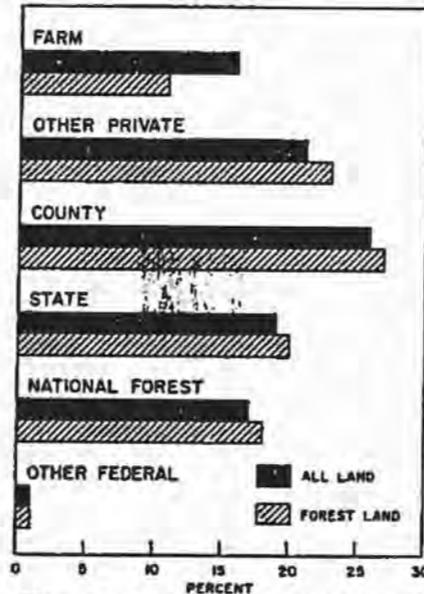


Figure 2. Percentage of all land and of forest land in different ownerships, 1951.

According to the 1954 Census, three-fourths of all farmers in the county received a part of their income from work away from the farm, and well over half of them received more income from off-farm work than from the sale of farm products. The off-farm work was not classified, but it is believed to consist mainly of work in the mines, in the woods, in the paper mill and other wood-working plants, and in catering to tourists.

The Extension Service maintains a forester in the county agent's office who is available to assist farmers in making forest management plans, in marking timber for cutting, and in finding markets for their timber products. He also cooperates with the Agricultural Stabilization and Conservation Committee in approving and supervising cost-share practices under the Agricultural Conservation Program. In 1958, some 32 farmers received reimbursement for planting 158,000 trees (about 158 acres), and 42 were paid for timber improvement work on 185 acres.

Itasca County is one of three counties in Minnesota selected by the U. S. Department of Agriculture for special attention under the Rural Development Program. Local representatives of the Department, working closely with the county agent, assist farmers in making individual farm plans, including choice of enterprise, layout of fields, cropping practices, soil treatment, drainage, etc. In most cases forest management, in one form or another, makes up a significant part of the plan.

The conservation-reserve phase of the Soil Bank Program has had some impact on farming in the county. The belief is current that there will be a growing inclination among farmers to list entire farm units under the program.

Advice to farmers is available from foresters connected with the office of the county land commissioner, the Office of Iron Range Resources and Rehabilitation, the Department of Conservation, the Chippewa National Forest, and the Lake States Forest Experiment Station. In addition to these public aids, a forester of the Blandin Paper Company stationed at Grand Rapids is available for consultation, and the company furnishes forest planting stock to farmers without charge. Other industries in the area will also give assistance in management and marketing upon request.

Those concerned with the future of agriculture in Itasca County recognize that straight commercial farming is beset with many handicaps. They feel that the best opportunities lie in the concentration of effort on the choicer areas and in the combination of farming with other types of resource management, among which timber production ranks high.

OTHER PRIVATE OWNERSHIP

About 49,100 acres, or nearly 10 per cent of all privately owned forest land, is owned by three pulp and paper companies. A few hundred acres is owned by other forest industries and operators of small sawmills. Several mining companies own limited areas of forest land which they hold for potential mineral value or for some use in connection with mining, not for forest management. Thus, industrial holdings, which comprise only about 3 per cent of the land area of the county, are relatively very small.

The industrial lands are reputedly somewhat above the average in quality. For the most part they support young aspen, balsam fir, pine, and spruce ranging up to pulpwood size. Roughly 12 per cent is non-productive. Most of the pulp company area is registered as tree farms. Two-thirds has been accepted for classification as auxiliary forest.

All non-farm land in private ownership (including industrial forests) comprised 23 per cent of the total area of forest land in 1951. It may now be somewhat larger as a result of farm shrinkage. About 32 per cent of the area is in sawtimber and pole timber, 41 is restocking, and 27 per cent is non-stocked.

Outside of the pulp and paper industry, little is known about the details of ownership in this group except that practically all of the individual owners hold less than 5,000 acres. They include retired farmers, resort and summer-home owners, mining-claim holders, heirs to estates, land speculators, and others. The great majority are non-residents

of the land they own and many are non-residents of the county. These small owners are eligible for practically all of the technical forestry assistance available to farmers, but few take advantage of it.

This situation points to the need for learning more about the composition and interests of this group, with special reference to their motives as landowners. If more were known about them, it might be possible to adjust some of the existing public programs to better fit their needs. At the same time it would be possible for forest industries to develop closer contacts to mutual advantage. With a fifth of the forest area of the county involved, the problem of improving the present low level of management of these lands deserves serious attention.

STATE OWNERSHIP

The state owns about 19 per cent of the total land area of Itasca County. Nine-tenths of this is forest land. The latter includes comparatively little pine but much balsam fir, spruce, tamarac, and cedar. Aspen is abundant, but proportionately somewhat less so than in the Chippewa National Forest. About a quarter of the forest area is non-stocked or permanently non-productive.

Areas of the three state forests in the county in 1959 were as follows:

FOREST	GROSS AREA		NET AREA	
	ACRES	ACRES	ACRES	PER CENT OF GROSS AREA
George Washington	298,853	88,974		30
Third River	45,416	22,812		50
Bowstring	55,954	55,954		100

The Bowstring State Forest has the same gross area and net area since it comprises all state land (and no other land) within the boundaries of the original Chippewa National Forest. The state also owns the Scenic State Park of 2,122 acres and approximately 120,000 acres outside of organized units.

FEDERAL OWNERSHIP

Federal lands comprise nearly a fifth of the total area of Itasca County. Of this, 96 per cent is in the Chippewa National Forest. The remainder consists mostly of Indian lands, with a small area of public domain and miscellaneous holdings. More than half of the timberland within the national forest is of the aspen type; only 29 per cent supports softwoods, and only 9 per cent pine. Stands of sawtimber and of pole timber comprise respectively 5 and 55 per cent of the forested area. 31 per cent is restocking, and 9 per cent is non-stocked.

The Forestry Study Committee of the state legislature in its 1954 report had this to say about the management of the Chippewa National Forest:

"Productive forest lands within the Chippewa National forest . . . have over the past 5 years, produced a gross income of \$0.38 per acre. Within twenty years the gross income . . . will probably rise to around \$0.60 per acre . . . Forest management costs run around \$0.14½ per acre." Inasmuch as this forest is one of the most productive and probably the most intensively managed in the state, these figures provide a point of reference in considering prospects for forest properties in other ownerships.

The costs quoted by the commission are confined to current management activities and do not include capital investments in roads, trails, lookout towers, buildings, etc. A portion of these capital costs, which come close to \$0.87 per acre, can be regarded as payments for services to local communities in lieu of taxes. In addition, the Forest contributes 25 per cent of its gross receipts to the county in cash for schools and roads. During the five years from 1953 to 1957, these cash payments averaged \$24,745 a year. Federal expenditures for trails, roads, and highways ran to much higher figures.

COUNTY OWNERSHIP

County lands are prominent in the pattern of land ownership in Itasca County. They comprise 26 per cent of all land and 27 per cent of the commercial forest land in the county. Redemptions and sales of tax-forfeited lands have reduced the county's present holdings to about 70 per cent of the total area that has come under its control since 1940, when it started to enforce the tax-forfeiture laws.

Some 405,000 acres (94 per cent) of the total area under county control are forest lands. They consist almost entirely of what is commonly called "cutover land," from which most of the timber of value was removed prior to its reversion for taxes. The types and condition of the county's forest lands as of 1950 are shown in Table 4.

A fourth of the area is still non-stocked; another fourth is stocked with pulpwood and small sawtimber; and a half is stocked with seed-

Table 4. Types and Condition of County Forest Lands, 1950.

TYPE	MERCHANTABLE	SEEDLINGS	TOTAL	
	SIZE	& SAPLINGS	M ACRES	PER CENT
Pine	13.4	3.3	16.7	4.1
Other softwood	16.2	45.0	61.2	15.1
Hardwood	74.6	150.5	225.1	15.5
Non-stocked	—	—	102.2	25.3
All types	104.2 ¹	198.8	405.2	100.0
Percentage	25.5	49.2	100.0	

¹ Only 6 per cent is sawtimber.

lings and saplings. Compared with state and federal holdings, the county has less of the softwood types and less area supporting merchantable timber. It has about the same proportion of non-stocked land as the state but considerably more than the federal government.

Since 1942 the county lands have been under the administration of a County Land Department, which now consists of a land commissioner, a forester, a chief clerk, and five field men (appraisers and cruisers). Table 5 compares the average annual cut of timber since 1941 with the estimated allowable annual cut. Timber sales are given fairly close supervision. The volume offered for sale is controlled by the condition of the market and the condition of the forest. To date there has been no need to hold back on sales of species other than spruce, for which the demand has been pushing close to the allowable cut. This situation might also appear to be true for other softwoods, but studies indicate that for most of these the growth is sufficiently rapid to promise a substantial increase in allowable cut for the decade starting in 1960.

Some 139,160 acres, or about a third of the forest area in county ownership, have been designated as "memorial forests," which are dedicated to permanent forest management. In Itasca County, however, the distinction between memorial forests and other county forests is primarily a budgetary one. County policy for a number of years has been to "plow back" 10 per cent of the receipts from sales into the management and development of its forest lands. On memorial forests, which in almost every instance lie in unorganized townships and are therefore not a vital source of income for local government, the present policy is to withhold 25 per cent of income for management.

Planting has been on a rather modest scale, with a total area planted to 1959 of 1,868 acres. Future planting is expected to run about 500 acres per year. The area needing planting has not been determined specifically, but would presumably be mainly in the following classifications:

CLASS OF LAND	ACRES
Poorly stocked pine	928
Poorly stocked spruce-fir	5,040
Poorly stocked aspen	1,394
Poorly stocked northern hardwoods	4,456
Upland grass and brush	25,736
	<u>37,554</u>

The factor largely responsible for the slow pace in planting is its high cost. Planting sites are small and scattered. Many are brushy, and many are exposed to damage by natural enemies. Planting costs of \$25 to \$30 per acre are common, and costs of \$40 to \$50 are not rare.

Table 5. Average Annual Cut of Timber from County Lands, 1941-1957, Compared with Allowable Annual Cut.

PERIOD	PINE	OTHER		ALL SPECIES
		SOFTWOODS	HARDWOODS	
----- M CORDS -----				
1941-1945 ave.	0.9	2.1	2.7	5.7
1946-1950 ave.	2.1	5.6	7.3	15.0
1951-1955 ave.	3.9	6.7	7.4	18.0
1956	6.7	7.4	8.5	22.6
1957	5.0	10.7	9.2	24.9
17-year average	2.9	5.4	6.2	14.5
Allowable Annual Cut ¹	4.8	8.9	33.2	46.9

¹ Estimate for 1950.

PROBLEMS

OVERLAPPING JURISDICTIONS

Neither the federal government, the state, nor the county have their lands well consolidated for efficient management.

The original Chippewa National Forest had fairly solid government ownership but the extension of boundaries in the 1930's encompassed much state and private land. Inasmuch as the Forest Service bought a large share of the tax-delinquent land, the county holdings within the boundaries are not large. Present ownership of that portion of the Chippewa National Forest in Itasca County is:

	Per cent
Federal	49
Private	30
State	17
County	4

A similar intermingling of ownership is found within the three state forests in the county—the George Washington, the Third River, and the Bowstring. Table 6 shows the situation in the George Washington and Third River state forests. The Bowstring State Forest includes all of the state land within the boundaries of the original Chippewa National Forest. Outside of designated state forests, the state owns some 120,000 acres of more or less scattered land within the county. Some is adjacent to solid blocks of county land. The thorough intermingling of ownerships in two blocks of townships in the northwestern and northeastern parts of the county is illustrated in Figures 3 and 4. A particularly complex pattern of ownership exists in the northwestern corner (Fig. 3), where the Third River State Forest is surrounded on

MINNESOTA LANDS

Table 6. Land Ownership in George Washington and Third River State Forests.

	GEORGE WASHINGTON	THIRD RIVER
	PER CENT	
Federal	*	22
State	29	50
County	40	12
Private	31	16
	100	100

* Less than 0.5 per cent.

three sides by the Chippewa National Forest and is intermixed with federal, county, and private holdings. In the northeastern corner (Fig. 4), there is no federal land, but county, state, and private lands are thoroughly intermixed.

The county has some land in all but 5 of the 91 townships. About three-fourths of the land is in fairly well consolidated blocks; the remainder is scattered. Its location with respect to other public lands is as follows:

	M ACRES	PER CENT
Within state forests	126.0	29
Within national forests	20.4	5
Outside of state or national forests	285.8	66
	432.2	100

Administrators in each agency, and also private owners, recognize the advantages to be gained from consolidations of ownership through sales and land exchanges, but progress in these directions has been slow because of legal obstacles and other considerations. The legal obstacles to exchange of land between the state and the county are discussed elsewhere in this report.

In Itasca County, the land commissioner seeks the advice and consent of town boards in organized townships on questions of land exchange and other matters which may affect their current income. (Townships and school districts have a 60 per cent equity in the net receipts from county lands.) Exchanges which give up acreage in one locality and acquire land of equal value in another may benefit one township at the expense of another.

Another possibility of effecting consolidations which would be administratively desirable would be for the county to transfer certain of its lands to the state under the 50-50 arrangement, whereby the county would thereafter get 50 per cent of the gross receipts. Whether if so under what specific conditions, is a question which can be an-

LAND RESOURCES OF ITASCA COUNTY

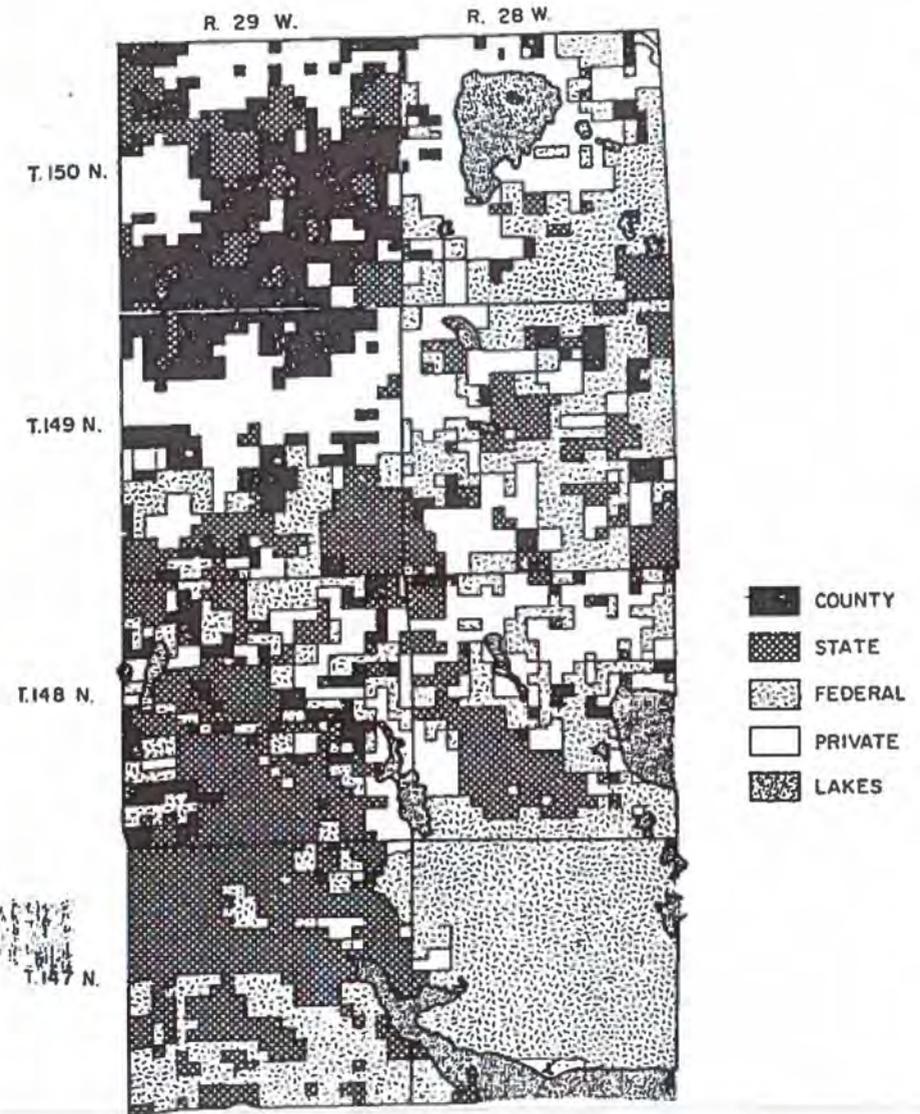


Figure 3. Land ownership in eight townships in northwestern Itasca County. All of the Third River State Forest is included and part of the Chippewa National Forest.

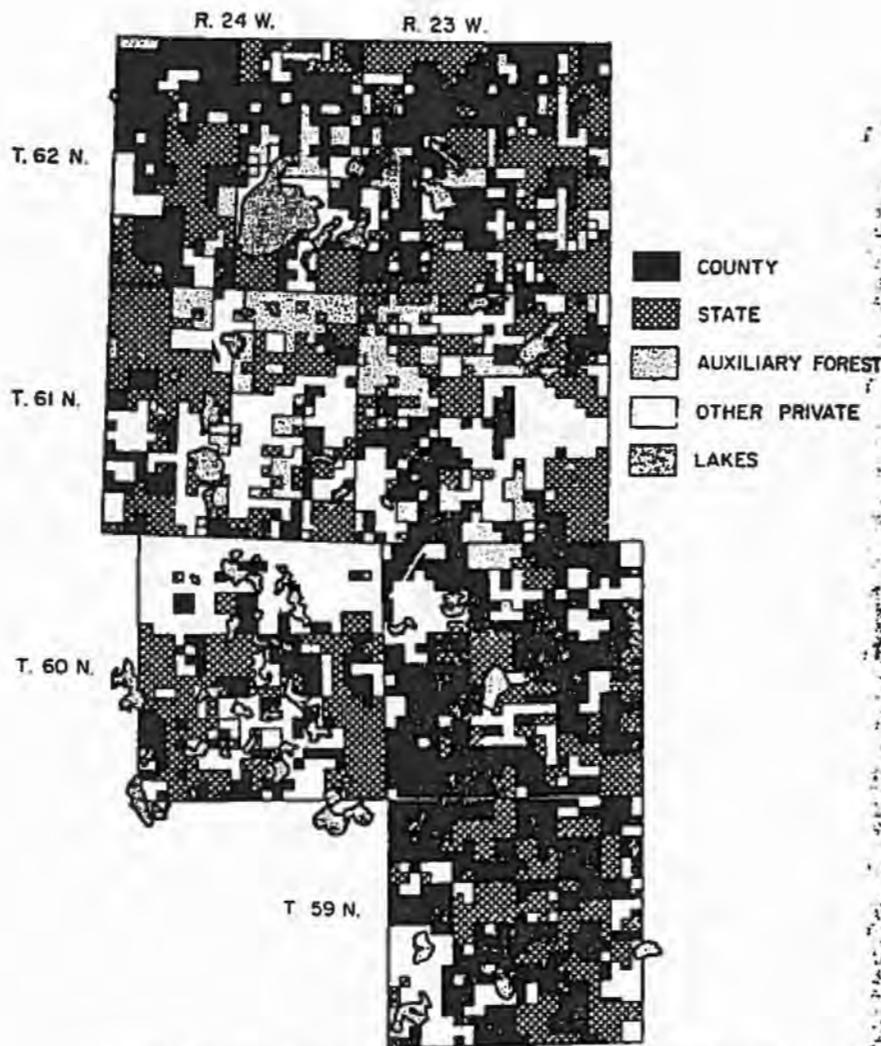


Figure 4. Land ownership in seven townships in northeastern Itasca County. Part of the land in the George Washington State Forest is included.

this arrangement would be financially advantageous to the county, and swered only by further study. Some town boards are reported reluctant to have the county turn over blocks of land to the state for management under the 50-50 arrangement.

Both the federal and state agencies are reviewing their boundary situation with the aim of eliminating some areas where their ownership is very light. In 1956 the federal government approved elimination from the Chippewa National Forest of 62,327 acres, of which only 5,539 acres is in federal ownership.

A possible improvement where state and county lands are badly intermixed would be a rearrangement of administrative responsibilities without necessarily a change in land ownership. In some areas state men could handle timber sales for the county and remit sale proceeds to the county treasurer, and vice versa. The feasibility of such a procedure should be explored.

Full and continuing consultation between all classes of owners is essential to work out mutually acceptable plans for improvement of the present unsatisfactory situation.

TAX TITLES

The county, in its administration of tax-forfeited land, is handicapped by cloudiness in the title of much of the land that forfeited between 1935 and 1957. Recent legislation and better administration have improved the situation in current forfeitures.

The state legislature, with the aim of safeguarding the landowners, set up an elaborate procedure by which the counties take possession of land delinquent for seven years. This includes sending a sheriff's deputy upon the land, serving a notice upon the occupant, publishing a notice in a county paper, and keeping a full record of these procedures. If any slip-ups occur in the procedure, or if any of the steps fail to appear in the record, the original owner can take the case to court with a pretty good chance of regaining possession. Such large acreages were taken over between 1935 and 1945 that full compliance was difficult. Some men experienced in this matter say that it is possible to break practically any title.

This possibility of repossession makes all tax-forfeited land titles questionable and interferes with some land exchanges the county would like to make. For example, the federal government will not accept the ordinary tax title when exchanges are made within the national forest. Legal steps must be taken to quiet the claims of previous owners before the title is acceptable. All of this takes time and money.

County officials feel that it would be administratively desirable and at the same time fair to the original owner to remove now this right of repossession on all lands forfeited prior to 1957.

MANAGEMENT OF TAX-FORFEITED LAND

All of the public agencies—federal, state, and county—face a formidable task in restoring cover on denuded land and improving the thrift and quality of timber on restocking areas. All will need to make substantial investments over a period of several decades. Itasca County with its large acreage of cutover land has a big problem of this kind.

Ideas differ as to the best final disposition of tax-forfeited lands. Some groups feel that they should be absorbed into the state forest system. Some favor returning them to private ownership. Some believe that continued county control offers the best prospects. No doubt the proper answer will differ in different counties. In Itasca County there exist some of the most favorable circumstances for county management—better than average taxable resources, a large and valuable forest property, competent technical personnel, considerable support for county land ownership, and a favorable attitude on the part of the county board. Study of its experience to date should be instructive.

During the period from 1941, when the county forests were set up, to 1955, the county received income at a steadily rising rate (Table 7). Starting at 8 cents per acre during the first five years, it increased to almost 27 cents during the third five years. Of these receipts, 77 per cent came from land sales in 1941-1945 and 48 per cent in 1951-1955. Income dipped somewhat in 1956 and 1957. Future increases are anticipated to a total of 50 cents in 1975, of which it is estimated 20 per cent would come from land sales.

Table 7. Average Annual Actual and Projected Receipts from Tax-Forfeited Lands, 1941-1975.

PERIOD OR YEAR	LAND SALES ¹		TIMBER SALES AND MISC. INCOME		ALL RECEIPTS	
	TOTAL	PER ACRE	TOTAL	PER ACRE	TOTAL	PER ACRE
1941-1945	\$28,238	\$.061	\$ 8,541	\$.019	\$ 36,779	\$.080
1946-1950	47,094	.106	35,899	.081	82,993	.187
1951-1955	55,933	.128	61,586	.141	117,519	.269
1956	41,416	.096	55,931	.129	97,347	.225
1957	32,399	.075	48,283	.112	80,482	.187
Projected ²						
1965	43,000	.100	122,400	.28	165,400	.38
1975	43,000	.100	172,000	.40	215,000	.50

¹ Includes the appraised value of timber sold with land.

² Land sales were projected at the 17-year average (1941-57), timber sales at the rate of increase shown from 1941 to 1955. The latter procedure assumes a steady improvement in the market for pulpwood (especially aspen), which is dependent on a healthy and expanding forest industry.

During the 17-year period the aggregate income from sale of capital assets in the form of city lots, lake-shore property, farmland, and timberland exceeded the income from sale of stumpage and other revenue from forest management. However, the receipts from land sales have not shown the same tendency to rise from year to year. Barring a major change in county policy, they may be expected to level off or possibly decline. On the other hand, receipts from stumpage should continue to rise as more and more timber stands grow into merchantable size and are opened up by logging improvements. Combined annual income, projected in line with 1941-1955 trends, may reach \$215,000 by 1975. This figure, which amounts to 50 cents per acre, may be compared with an estimate of 60 cents per acre from timber alone on the Chippewa National Forest in 1970.

During the seventeen-year period to 1957, the expense of managing the tax-forfeited land also rose steadily from 1.5 cents per acre during the first five years to 7.2 cents for the third five years. Unlike receipts it continued upward through 1956 and 1957. Projecting ahead one can see need for something like 17.5 cents per acre or about \$75,250 annually by 1975 (Table 8). By this time, no doubt, the county will need four or five technical foresters and four or five subprofessional men for forest management alone. Costs will be still further increased if the county decides to expand its activities in forest recreation or to accelerate its planting program. The 17.5 cent figure may be compared with a recent statement of current timber-management costs on the Chippewa National Forest of 14.5 cents per acre. Past and projected receipts and expenses are compared in Figure 5.

Table 8. Average Annual Actual and Projected Expenses of Administration of Tax-Forfeited Lands, 1941-1975.

PERIOD OR YEAR	LAND SALES ¹		TIMBER SALES AND MISC. INCOME		ALL EXPENSES	
	TOTAL	PER ACRE	TOTAL	PER ACRE	TOTAL	PER ACRE
1941-1945	\$ 4,250	\$.009	\$ 2,825	\$.006	\$ 7,075	\$.015
1946-1950	7,063	.016	17,084	.038	24,101	.054
1951-1955	8,390	.019	23,070	.053	31,460	.072
1956	6,212	.014	31,194	.072	37,406	.086
1957	4,860	.011	38,351	.089	43,211	.100
Projected ²						
1965	6,450	.015	47,300	.110	53,750	.125
1975	6,450	.015	68,800	.160	75,250	.175

¹ Actual expense of administering land sales was not recorded by the county. The land commissioner states that the cost is less than for timber sales because scaling and continuous supervision is not required. Here it is estimated at 15 per cent of gross receipts.

² Timber sale expense is projected at the rate of increase shown from 1941 to 1957.

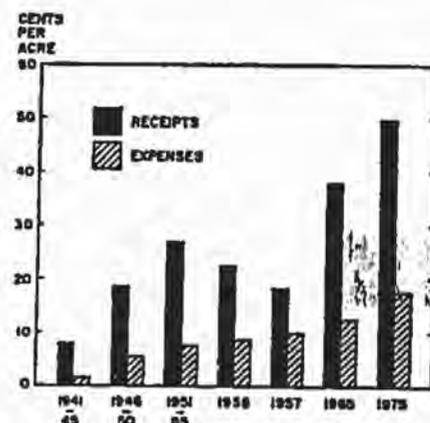


Figure 5. Average annual actual and projected receipts and expenses connected with tax-forfeited lands.

Table 9. Division of Administrative Expenses between Itasca County and the State of Minnesota, 1941-1957, and Possible Division of Projected Expenses, 1965 and 1975.¹

PERIOD OR YEAR	AVERAGE ANNUAL EXPENDITURE			STATE PER CENT OF TOTAL
	COUNTY	STATE ²	TOTAL	
1941-1945	34,990	2,085	7,075	29
1946-1950	17,351	6,750	24,101	28
1951-1955	24,615	6,845	31,460	22
1956	30,172	7,234	37,406	19
1957	34,410	8,801	43,211	20
Projected				
1965	43,000	10,750	53,750	20
1975	60,200	15,050	75,250	20

¹ The cost of the special project, "Relocating Section Corners," is not included in this table.

² State expenditures shown here are those made by the Office of Iron Range Resources and Rehabilitation. They do not include state expense for fire protection, for supervision of timber sales, or for planting stock to reforest county lands.

The state government through the Office of Iron Range Resources and Rehabilitation has been helping the county with administrative costs (Table 9). In recent years it has contributed about 20 per cent of the total. If this proportion holds up to 1975, it will provide a little more than \$15,000, thus reducing the county requirement to \$60,000.

Assuming that the county will have a gross revenue of \$215,000 by 1975 with administrative costs of roughly \$60,000, the net income will be \$155,000, or 36 cents per acre. This is a return of between 5 and 6 per cent on an estimated land and timber value of \$6.72 per

acre. In addition the county will have substantial capital gains as the timber grows in volume and value. How do these figures compare with the returns to the county if the lands were to be turned over to the state or sold to private owners?

Using the same premises as to receipts and costs under a 50-50 agreement with the state, the county would have no annual costs and would receive as its share \$107,500 in 1975. For the acreage as a whole, this does not appear advantageous to the county. That is not to say that there may not be some tracts of tax-forfeited land so located that they should be turned over to the state for more economical and profitable handling.

If the lands were to be sold to private owners and thus returned to the tax rolls, the county and its subdivisions would receive 90 per cent of the sale proceeds which it could use to pay off bonded indebtedness or, if not so needed, theoretically could be loaned out at interest. Also they would receive annual revenue from taxes. Assuming the sale price to be the roughly appraised value of \$6.72 per acre and a typical current property tax rate, the annual revenue per acre would be about:

Interest (4% on 90% of sale price)	\$0.25
Property tax	0.25
	<hr/>
	\$0.50

Fifty cents per acre is more than the county can expect to net from its own management of the land in the near future. However, it seems most unlikely that private individuals and companies will want to take over a woods-run of county lands (including deforested areas) and hold them under the uncertainties of the property tax as now applied. Either they will select only areas which promise to yield valuable products in the very near future, leaving the county with an unprofitable and difficult-to-manage residue, or they will seek some other form of taxation.

Under the auxiliary forest law, the annual tax would be about 11 cents now, possibly 14 cents by 1975. This perhaps is aside from the point inasmuch as the county boards seem disinclined to approve extensive classifications under this law.

Under the tree growth tax law, rough calculations indicate that a woods-run mixture of forest and brush lands such as held by Itasca County would yield about 13 cents per acre growth tax. The kinds of land most likely to be purchased by private owners probably would yield 20 cents per acre or more. In fact, one application approved recently is reported to yield close to 30 cents per acre. Thus the financial return to the county from land transferred to private ownership prom-

ises to be close to the return under county management. Decision as to whether land should be sold or retained should be based on answers to these questions:

(1) Is there reasonable assurance that the purchaser will provide good forest management and use the property to stabilize local industry and settler income?

(2) Is the proposed purchase so located that it will not break up logical county management units?

All in all, the present system of county management with constructive state aid seems to offer very good promise in Itasca County. Without doubt, the county can gain a great deal in efficiency by transferring some lands to the state either by exchange or under the 50-50 arrangement, by exchanges with the federal government and private owners, and by the sale of selected tracts to these two classes of owners. But over a period of 17 years, the county has demonstrated its ability to manage a forest property profitably and constructively.

TAXATION OF CUTOVER LAND

Ever since the late 1920's and early 1930's when a wave of tax-forfeiture reduced the taxable area from a high point of about 1,360,000 acres down to 465,700 acres (actually paying) in 1941, Minnesota has been seeking a method of taxing forest land which will stimulate private ownership and management. Recently, increasing value of forest products and increasing productivity of the land have created a somewhat more favorable environment for private ownership and a few forest industries have made small purchases of land. However, the general property tax, which places a fairly stiff annual tax on reforesting land throughout a long period when the land is producing little if any revenue, deters landowners from reforesting denuded areas and carrying young forests through to maturity. Current tax forfeitures are sufficient to offset purchases and the total acreage on the tax rolls was no greater in 1957 than in 1941.

The auxiliary forest law has been the principal device by which Minnesota has sought to improve conditions for the forest owner. Under most recent amendments it provides for a 10 cent per acre annual tax plus a 10 per cent levy on the value of the timber stumpage at the time it is cut. It requires voluntary application on the part of the landowner and approval of the county board. Generally this law has not been popular with the county boards and in some counties no applications have been approved, mainly for the reason that the deferred yield tax is of no help in meeting current expenses. Itasca County has approved 10 applications with a total area of 32,129 acres—about 6 per cent of all privately owned forest land. These lands paid the taxing districts \$.06 per acre annual tax and an average of \$.008 per acre yield tax in 1955.

Another special forest law, called the tree growth tax law, proposed by some of the forest industries and county commissioners, was passed by the 1957 legislature. It provides for a series of tax rates per acre approximating 30 percent of the estimated value of mean annual growth for the various timber types. This tax promises to appeal to the taxing districts more than the auxiliary forest law in that it provides steady revenue from year to year. Proposals have been accepted in the counties of St. Louis, Koochiching, Hubbard, Crow Wing, and Itasca and several thousand acres have already been entered. Other counties are considering the matter.

It is noteworthy that the report of the Taxation Inquiry of the U. S. Forest Service summarizing the results of extensive studies in northern Minnesota and elsewhere in the late 1920's concluded that "the remedy consists not in arbitrary fixed assessments nor in specific taxes . . . It is to be found rather in accurate assessments of individual properties . . ." Itasca County, with its centralized assessment system and with access to technical forestry advice, is in a good position to attempt a scientific appraisal of forest land for tax purposes. In making the assessments, recognition can be given to the growth capacity of the different types and value of products, as under the tree growth tax law, and a distinction can be made between nearly mature forests and those which have been established recently. Recognition should be given also to the fact that property in general is assessed far below market value in this locality, so that forest values should be discounted correspondingly if local tax rates are to apply equitably.

Studies made by the Minnesota Department of Taxation in 1955 and 1957 showed that the assessors' "full and true value" on the average was only about one-third of the estimated market value of the properties in the state as a whole. In Itasca County it was much less than this figure except for industrial and public-utility property. Table 10 shows the variation between classes of property. Under Minnesota's

Table 10. Comparison of Assessors' "Full and True Value" with Estimated Market Value by Classes of Property.

CLASS OF PROPERTY	1955	1957
	PER CENT OF FULL VALUE	
Residential	14.6	17.6
Commercial	18.3	22.0
Industrial	29.9	31.9
Public Utility	43.1	42.0
Lake Shore	9.8	10.4
Farm	20.2	18.2
All classes	17.4	20.7

classification law appraised value of forest land for taxation purposes is $33\frac{1}{3}$ per cent of the assessors' "full and true value," or 20 per cent if the land is actually managed for forestry purposes.

The acreage now in private ownership in Itasca County plus scattered pieces of county land which may be acquired could form the basis for some very substantial industrial forests. Much of this land will need to be rehabilitated and carried for a period when expenses will largely offset income as was the case with county lands 20 years ago. It is important therefore, that a tax system favorable to this development be established, whether it be under the auxiliary forest law, the tree growth tax law, or by scientific appraisal under the general property tax.

LAND-USE PLANNING

Possible reduction in the tax base to encourage forestry (and mining) will require governmental efficiency and possibly some redistribution of functions between townships, county, and state. One tool for exploring possible improvements is land-use planning, including zoning.

Itasca County was one of the first counties to create an active land-use committee in the late 1930's when a similar problem faced the area. It was among the first to pass a zoning ordinance and has made some land exchanges to bring in isolated settlers to places where they can be given school and road service at lower cost. Presently, extension and rural development men are making progress in individual farm planning. And yet, one senses a lack of momentum in the broader phases of land planning. Much of the steam has gone out of the program started twenty years ago.

Today, no one appears to be giving much thought to improving the geographic pattern of agriculture. The zoning ordinance is not fulfilling its possibilities. Land exchanges and purchases to concentrate scattered settlers are not an active part of the current program. Coordination among different classes of owners in forestry and recreational development is decidedly incomplete.

This situation suggests the desirability of re-creating a County Land-Use Planning Committee to take a new look at these problems. It may be that full advantage of this move will not be realized until similar action is taken in adjoining counties and at the state level. However, Itasca County was a leader in the program twenty years ago and may be the logical one to revive the movement now.

APPENDIX IV

SYNOPSIS OF MAJOR LEGISLATION RELATING TO TAX DELINQUENCY AND TAX FORFEITURE

JOHN H. ALLISON

TAX DELINQUENCY and the duties and responsibilities of the county auditors, county treasurers, and county boards are given considerable attention in Minnesota General Laws, 1859-1860, Chapters 1 and 2. These laws, passed by the first legislature elected following the admission of Minnesota to statehood, cover the entire administrative field within which the above officers and boards function and operate. Hence they are very long.

The emphasis with reference to the control of tax delinquency is placed upon providing an opportunity for purchasers to buy tax titles to delinquent parcels. To redeem and clear of liens their titles to tax-delinquent lands, the owners of record were required to pay not only past due taxes but also rather large penalties and high interest rates on the delinquent taxes. Also, if the owner of record wished to redeem his title, where the tax title had been purchased by someone else, he was required to pay the purchaser 12 per cent on the money he had put into purchasing the tax title, plus the money he had spent on paying later taxes, plus the appraised value of any "improvements" which the tax title purchaser had put on or into the land.

At the time these laws were passed it was believed that the threats contained in them would be sufficient to prevent the building up of considerable amounts of tax delinquency. Extensive

taking of title to lands by the state through tax forfeiture does not seem to have been expected or provided for. The only provision made for such a contingency was a clause which ordered the county auditor to add each year to the current list of tax-delinquent lands being offered for sale a list of the parcels which had previously been offered and which had been neither redeemed nor sold.

Between 1860 and 1890, in their biennial reports to the governor and the legislature, the state auditors reported extensive tax delinquency, particularly during periods of business depression and also during periods of great locust activity. Successive state auditors urged the legislature to strengthen the laws covering forfeiture of land titles to the state for nonpayment of taxes in such a manner that the state could give merchantable title to buyers. They also urged the legislature to require the county auditors to carry through forfeiture of title to lands three or more years tax delinquent. Nothing of importance resulted from these recommendations.

Minn. Laws 1899, c. 322 constitutes probably the first real attempt to control tax delinquency through the threat of effective forfeiture of title to the state of lands upon which taxes were three or more years delinquent. But according to the minutes of the then recently created State Forestry Board,

the auditors in the counties where there were considerable acreages of tax-forfeitable land (mostly "cut-over" lands), effectively defeated the purpose of the law by their failure to take action under its provisions. The State Forestry Board was interested because it thought that the forfeiture of tax delinquent lands in the northeastern forested counties could be made a means of establishing a considerable acreage of state forests. The county auditors, however, nipped this program before it could get started by refusing to forfeit the lands eligible to forfeiture.

The 1899 tax-forfeiture law undoubtedly was a result of the 1893-1897 "depression," which was accompanied by extensive tax delinquency of "wild" lands located in the northern and northeastern parts of the state. However, the 1898-1920 agricultural boom rather quickly transformed tax-delinquent lands into tax-paying lands—so why worry about tax delinquency. But with the coming of the agricultural depression of the 1920's tax delinquency in the northern part of the state assumed great size.

Minn. Laws 1925, c. 208 represents the first real attempt of the state to deal with this situation. It was the first of the "bargain counter" delinquent-tax-redemption laws. It ordered the county auditors, at the sale of property for delinquent taxes, to sell such property to the highest bidder, but not for less than the aggregate of the delinquent taxes plus penalties, interest, and costs. However, if the cash value of any parcel was less than the sum of the charges, the tax lien could be settled by a payment in lieu of taxes equal to its cash value as "fairly" determined by the county board, after approval by the Minnesota Tax Commission.

This law further provided (and here comes the "bargain counter") that all parcels bid in for the state for taxes for the year 1918 or prior years could be disposed of for one half of the total

taxes as originally assessed. Furthermore, all unsold parcels which had been tax delinquent for ten years or more and had been subject to sale for three years or more could be disposed of for not less than one-fifth of the total taxes as originally assessed. However, the law required payment, outside of municipalities, of all ditch liens and other special assessments in full unless specifically reduced by county board resolution; and, within municipalities, of all special assessments in full unless such assessments were specifically reduced by the governing body of the municipality.

The 1925 "bargain counter" law was followed in 1927, 1929, 1931, 1933, and 1935 by a series of laws all very similar in their terms. These laws were accompanied by other laws, the purpose of which was to make tax forfeiture more certain if the tax-delinquent lands were not redeemed.

Neither set of laws brought about any large-scale redemption of the longer tax-delinquent lands. The former owners of the greater part of these lands had definitely abandoned them, and no reduction in the amount of taxes due would induce them to re-establish ownership. Gradual realization of this situation brought about the passage by successive legislatures of tax-forfeiture laws which, by 1936, provided for reasonably effective forfeiture to the state of title to lands five or more years delinquent.

Minn. Laws 1927, c. 119 embodied the first major effort on the part of the legislature to deal effectively with the state's large area of lands which were then five years or more tax delinquent. This law ordered the county auditors, on the second Monday in November of each year, to offer each tax-delinquent parcel for sale to the highest cash bidder who bid not less than the aggregate taxes, penalties, interest, and costs, except where the cash value of the parcel as determined by the Minnesota Tax Commission was less than that sum. In that case the cash value

of a "Red Lake Game Preserve" is authorized, and the kinds of income to be credited to it are specified.

The law orders the county auditors to list with the State Auditor by September 1, 1929, all the parcels of land within this "Preserve," lying outside of the boundaries of cities and villages, which had been bid in for the state at the delinquent-tax sale held in 1928 and not redeemed or assigned to a purchaser. Details as to the amount of delinquent taxes and special (drainage-ditch) assessments, etc. must also be reported.

Section seven of this act authorizes the taking of absolute title by the state, free from the trust in favor of taxing districts provided for in Laws 1927, c. 119, to all parcels of land outside of the boundaries of incorporated villages and cities that tax forfeit to the state under the provisions of that law.

Section eight requires the Department of Conservation to classify all tax-forfeited lands acquired under section seven with reference to their suitability for agricultural, forestry, and game-production use. Future reclassification is also provided for. Sale of lands more valuable for agricultural use or for timber production than for game production is authorized.

Minn. Laws 1929, c. 415 provides that in June of each year the county auditor shall transmit to the state auditor a list of all tax-forfeited lands remaining unredeemed, together with a statement of all taxes, penalties, interest, and costs thereon. All parcels of land bid in for the state, and not yet assigned to purchasers or redeemed within three years from the date of the tax sale at which they were first offered, shall be offered at a sale commencing on the second Monday of August of each year and continuing from day to day until the first day of September, and thereafter at intervals until the second Monday in December. At no such sales shall the rights of the state acquired at delinquent-tax sales held in 1928 or subsequent years be

becomes the minimum amount that the county auditor may accept as a cash bid. If there is no cash bidder, then the parcel may be sold to a bidder who offers to pay not less than one-tenth of the minimum authorized sale value in cash, with the balance payable in nine equal annual installments with interest at six per cent. If there was no full-cash or installment-cash bidder, the tax delinquent parcel might be offered for sale under "bargain counter" provisions almost identical with those in the 1925 law.

Then the 1927 law proceeds to provide that all parcels of land which had been offered at five successive tax delinquent sales "shall become the absolute property of the purchaser or of the state, or of his or its assigns, without any right of redemption on the part of the former owner." Notice to this effect must be included in each tax judgment sale directly above the signature of the clerk of the district court. Title to each parcel of land acquired by the state through tax forfeiture is to be held in trust for each and all of the taxing districts interested in the delinquent taxes and special assessments, penalties, etc.

Furthermore, the act provides that all lands becoming the property of the state under its provisions must be classified into agricultural and non-agricultural land by the county board under the supervision of the State Auditor. After classification these lands must be offered for sale at public auctions for not less than their appraised value.

The state and its subdivisions are authorized to purchase for public purposes any parcels of land offered at a tax-forfeited land sale.

Minn. Laws 1929, c. 258 states the reason for and authorizes the creation of the "Red Lake Game Preserve" to cover definitely specified portions of Beltrami, Koochiching, and Lake of the Woods counties. This "Preserve" is to be under the management of the Department of Conservation. Creation

disposed of.

Then comes the authorization of a "bargain sale," but with a proviso exempting tax-delinquent lands within the Red Lake Game Preserve from its provisions.

The act further provided that anyone having an interest in a tax-delinquent parcel could redeem it at any time during the first five years following the date of its first delinquent tax sale, after which all right of redemption ceases. Notice to this effect must appear on each tax-forfeiture list directly above the signature of the clerk of the district court. Repeated from the act of 1927 was the proviso "that no action, defense, or application attacking the validity of the sale of any parcel at an annual delinquent-tax sale or the validity of any subsequent delinquent taxes shall be entertained unless brought, interposed, or made within five years from such sale."

Other provisions, outside of the "bargain counter" feature, authorized the county auditor and county treasurer to accept as payment in full of the taxes assessed in 1926, 1927, and 1928, the amount levied without inclusion of penalty or interest (the 1925 assessment already having been taken care of in a similar manner by Minnesota Laws 1929, c. 117), on condition that the owner pays the delinquent taxes accumulated prior to 1925 as reduced by the "bargain counter" features of this act.

Finally, the act authorizes the refunding to the taxpayer of that portion of the taxes paid by him on any parcel where, upon appeal to the county board, the assessed value of the parcel is found to be in excess of its fair and true value.

By this time (1929), more than 6,000,000 acres of land in the northern part of the state were tax delinquent. Chapters 117 and 415 of that year's laws represent a further attempt to entice taxpayers into clearing up their delinquent taxes by offering them large discounts on the amounts due. At the

same time the legislature attempted to say to these delinquent owners that they would definitely lose their equity in their tax-delinquent lands unless they now promptly redeemed them. This law seemed to provide absolute, unbreakable forfeiture of title of lands five or more years tax delinquent—but that did not prove to be the case. It was soon discovered that the courts were going to take a very friendly position toward land owners who wished to redeem their parcels of land which by law they had absolutely forfeited. The courts supported the breaking of the forfeiture of title wherever any error had been made in the forfeiture procedure, no matter how minor that error might be.

Minn. Laws 1931, c. 32 authorizes, within the Red Lake Game Preserve, the exchange of lands acquired by the state through tax forfeiture for privately owned lands within the Preserve and fixes the procedure to be followed.

Minn. Laws 1931, c. 407 authorizes the creation, maintenance, and management of reforestation and flood-control projects. It provides for the acquisition by the state of unredeemed tax-delinquent lands forfeiting to the state within the boundaries of such projects and the utilization of such lands for reforestation or flood control purposes. It provides means for the payment and retirement of county, township, and school-district bonds secured in part by tax and special-assessment levies resting upon the tax-delinquent lands to be acquired by the state under the provisions of this law. It defines the powers and duties of the counties and their officers within the areas included in these projects. It provides for the issuance of certificates of indebtedness to cover the paying off of the bonds and for the levying by the state of the taxes necessary for the paying off of such certificates.

The law also authorizes the county commissioners of counties in which, on January 1, 1931, more than 35 per cent

of the taxable lands are delinquent, and in which the bonded ditch indebtedness, including accrued interest, equals or exceeds nine per cent of the assessed valuation of the county, exclusive of monies and credits, to request the state to establish one or more reforestation or flood-control projects within its boundaries. Each such project must include lands which have been assessed for all or part of the costs of public ditches and upon which assessments or installments of such assessments are delinquent.

Each such project thus submitted by a county board must be approved by the Department of Conservation, by the Executive Council, and by the Governor before being accepted by the state. If such a project is accepted, it is to be developed and managed by the Department of Conservation under such rules and regulations as may be necessary.

The \$1,500,000 of certificates authorized by this law (increased to \$2,250,000 by *Minn. Laws 1937, c. 312*), together with all income from projects established under this act, are to be used first to pay off the ditch bonds of the area included within each project and then, if there is any remainder, for other authorized purposes.

As soon as possible after the acceptance by the state of a project, the county auditor is to compile and certify to the state auditor a list of the tax-delinquent lands within the project, together with a record of the amount of the delinquency for each parcel on drainage assessments, etc.

Within the boundaries of the project, the lands which have already forfeited and those which forfeit in the future are to become the absolute property of the state, free from any trust in favor of the taxing districts. They are to be classified by the Commissioner of Conservation, and if classified as agricultural are to be offered for sale. Timber also may be sold.

Minn. Laws 1933, c. 402 restates *Laws 1931, c. 407*. In doing so it re-

duces the tax-delinquent acreage from 35 per cent to 25 per cent and ties this latter percentage to the township, rather than to the county, thus making it possible to include within a reforestation or flood-control project the whole or any part of a township in which 25 per cent of its area was tax delinquent on January 1, 1933. It raises, however, the minimum amount of the bonded ditch indebtedness of a county for eligibility for a reforestation or flood-control project from nine per cent to 15 per cent of its assessed valuation as determined by the Minnesota Tax Commission, exclusive of monies and credits. The county board must request the establishment of a project or projects of this character.

This act gives the state absolute title to lands within this type of project, the county, township, and school district having no interest in the income produced by the tax-forfeited lands coming into state ownership under its terms.

It specifically makes the Department of Conservation responsible for management of the forests and wildlife lands included within these projects. All income, except that produced by Trust Fund and Rural Credits lands, is to be paid to the State Treasurer and credited to the project fund from which the income is secured.

The Conservation Department is granted the right of eminent domain when necessary to acquire privately owned lands needed in the development of the project.

Minn. Laws 1933, c. 407 was the first of many "repurchase" laws. It gives the owner of lands sold to the state for taxes for the years 1926 and 1927 an option to repurchase them by paying one-half the amount of taxes accrued to the date of forfeiture, less penalties, interest, and costs, with interest at four per cent upon this sum from the date of forfeiture to the date of repurchase; the owner may pay one-tenth of the above amount in cash and the remainder in 20 annual installments

with interest at four per cent per annum. Not more than 320 acres of non-platted land or two lots in platted lands may be repurchased under this law. An owner of larger acreages of non-platted lands may limit his repurchase to any 40-acre tract within such larger acreages which he selects to repurchase. No occupant of forfeited land may be evicted until after two years have passed following the date of tax forfeiture.

This act does not apply to tax-forfeited lands within the boundaries of the Red Lake Game Preserve established by Laws 1929, c. 258, or the conservation areas established by Laws 1931, c. 407, or within any other conservation area or forest heretofore or hereafter established by the legislature.

Minn. Laws 1933, c. 414 is a very liberal "bargain counter" law for the redemption of tax-delinquent lands.

Minn. Laws 1933, c. 418 authorizes the exchange of lands acquired by the state through tax forfeiture for private lands, but the lands so exchanged must lie within the same county.

Minn. Laws 1935, c. 210 requires the county boards of the counties within which is located the Red Lake Game Preserve to classify as agricultural or non-agricultural all lands to which the state gets absolute title under Laws 1929, c. 258; but lands classified as agricultural shall not be offered for sale until after that classification has been approved by the Commissioner of Conservation. Lands so approved are to be appraised by the county board and are to be offered at public sale at not less than their appraised value. The record owner, one week or more before the public sale, may purchase any parcels which he formerly owned at their appraised value.

Sales may be made for cash or on the following terms: 15 per cent of purchase price in cash and the balance in equal installments over a period of 20 years, with interest at four per cent per annum.

The state reserves the mineral rights

to all lands sold.

Minn. Laws 1935, c. 278 extends to July 1, 1936, the time for the redemption of parcels sold for taxes and bid in by the state at the tax-judgment sales for 1926, 1927, 1928, and 1929. However, it limits the redemption period for lands bid in for the state at the tax-judgment sales held in 1930 and thereafter to five years. Upon the expiration of the redemption period, absolute title vests in the state, the purchaser, or its or his assigns. Anyone having an interest in the parcel is authorized to redeem it.

Notice of the expiration of the period within which the owner of a tax-delinquent parcel may redeem it must be given him by the county auditor. For parcels bid in by an actual purchaser, this notice must be given not more than 60 days prior to the expiration of the period of redemption, which will expire 60 days after the date set in the auditor's notice. If the parcel is not redeemed within this period, the purchaser of the tax title to it becomes the absolute owner of the parcel.

For parcels bid in by the state and not thereafter sold to a cash purchaser at a subsequent tax-judgment sale, notice of the period within which the owner of a tax-delinquent parcel may redeem it must be given him not more than 60 days before the expiration of the redemption period; but the tax-delinquent owner has one year more within which to redeem it before the state becomes possessed of absolute title.

The act spells out the form of notice that must be given to the presumed owners of parcels tax delinquent for a period of five years, the place in which it is to be posted, the form in which it is to be published in the county's official newspaper, and the manner in which the sheriff is to "serve" the occupants of tax-delinquent parcels about to forfeit to the state, and other details.

This act specifically orders the state

to hold the title to every such parcel in trust for the respective taxing districts interested in the taxes, special assessments, penalties, interest, and costs accrued against them.

Minn. Laws 1935, c. 386 provides for the administration and sale of the parcels which forfeit to the state. It requires the county board to classify all tax-forfeited parcels as agricultural or non-agricultural. Such classification must be approved by the Conservation Commission (now by the Conservation Commissioner) before any individual parcels are offered for sale. Those being offered for sale must be appraised by the county board before being offered.

Sales are actually made, at or above appraised value, by the county auditor in the name of the state, either at public or private sales conducted at the county seat. Either cash or partial payment at time of sale is authorized. No timber may be cut or timber products removed from a parcel sold on partial-payment terms until the buyer has paid at least the full appraised value of the timber at the time it was purchased. If a purchaser defaults on either his payments or his current taxes, his contract will be cancelled. Such cancellation may be deferred if it will result in undue hardships, as determined by the county board.

On payment of the full purchase price, an appropriate conveyance in fee shall be issued by the Minnesota Tax Commission (now the Tax Commissioner), which shall have the force and effect of a patent from the state.

All parcels not sold or not offered for sale shall continue to be held in trust by the state, under supervision of the Conservation Commission, for the taxing districts having an interest in them.

The county board may limit the use of the parcels offered for sale, and/or it may limit the expenditure of public funds which the buyer may demand after his purchase of the parcel. Thus, undue expenditures for access-road

construction and excessive school costs may be prevented. This is an important provision of the law.

Prior to sale of the land, the county auditor may sell hay stumpage, and dead, down, or mature timber, or lease forfeited lands, as directed by the county board, at a public sale and to the highest bidder. The approval of the Conservation Commission must be secured before any tract of timber is offered for sale. Income from such sales and leases is apportioned in the same manner as income from land sales.

Parcels of land, except those located within villages or cities, which have become the absolute property of the state, and which lie within the boundaries of conservation areas established by the laws of 1929, 1931, and 1933, are exempted from the provisions of this act. The county auditor is ordered to cancel all taxes and tax liens and all special assessments pertaining to such parcels immediately following their forfeiture to the state.

In the apportionment of receipts from forfeited lands each parcel's pro-rata share in special assessments of all kinds and in school, district, town, village, city, or county indebtedness must be taken care of first. Any remainder is to be apportioned as follows: State 10 percent, county 30 percent, township, village, or city 20 percent, and school district 40 percent. The county auditor and county treasurer are ordered to set up a "Forfeited Tax Sale Fund," into which all receipts from tax-forfeited lands will flow. Against this fund shall be charged compensation to members of the county board at a rate not to exceed \$3.00 per day plus mileage, such compensation as the board may allow the county auditor, and such expenditures as may be necessary for clerical help.

County boards are authorized to appoint land commissioners who are to assist county auditors in the sale or rental of tax-forfeited lands and in other administrative activities connected with the tax-forfeited lands.

The land commissioner's salary and expenses are paid out of the "Forfeited Tax Sale Fund." Cost to the Tax Commission of cancelling cancellable contracts are also to be paid out of this fund.

In the sale of lands all minerals and mineral rights are reserved.

Minn. Laws 1935, c. 387 is the last of the "bargain counter" laws, under which a title could be freed of long-delinquent tax liens by an authorized payment of a portion of the outstanding taxes, with all or the greater part of the penalties, interest, etc. waived. This law essentially postponed the application of Chapter 278 of the laws of 1935 until July 1, 1936.

Minn. Laws, Extra Session 1935, c. 72 is the first of a series of laws known as the "confession of judgment" laws under which the delinquent taxpayer agrees to accept the county auditor's determination of the delinquent taxes due on a specified parcel of land. To take advantage of this act, he must confess to the clerk of the district court that he owes the amount of taxes as determined by the county auditor. In exchange for making this "confession" and paying, or agreeing to pay, the delinquent taxes as originally levied, he is given specified concessions. To take advantage of the act the delinquent taxpayer must pay his current taxes before they become delinquent, but he may pay the delinquent taxes in installments.

This act applies only to taxes delinquent at the time of its passage. However, acts similar in form, wording, and purpose, but specifically excluding lands assessed at over 40 per cent of their full and true value (really excluding mineral lands) were passed as follows: Minnesota Laws, 1937, c. 486; Minnesota Laws, 1939, c. 91; Minnesota Laws, 1941, c. 17; Minnesota Laws, 1943, c. 163; and Minnesota Laws, 1945, c. 121. The 1945 "confession of judgment" act was the last in this series. During the 1935-1945 decade this series of laws was the most widely

used form of delinquent-tax legislation available to delinquent taxpayers who wished to redeem their property. According to the 1940-1942 Biennial Report of the Minnesota Department of Taxation, 83,590 taxpayers took advantage of these laws during the period from 1935 to 1942 inclusive. No information is furnished upon the acreage (rural areas), number of lots (urban areas), or total amount of the tax liens covered by these "confessions of judgment."

Minn. Laws, Extra Session 1935, c. 47 authorizes the counties to assume principal and interest of bonds issued by school districts or towns lying wholly or partly within state reforestation or flood-control projects.

Minn. Laws, Extra Session 1935, c. 105 amends Laws of 1935, c. 386 by extending the provisions of that act to all parcels of land which have become the absolute property of the state, in trust, under the provisions of any existing law declaring the forfeiture of lands to the state for taxes. It further states that "nothing in Sec. 7 of c. 387 of the Laws of 1935 shall apply to the cancellation of taxes and tax liens on state trust fund land."

Minn. Laws 1937, c. 326 definitely forfeits to the state absolute title to tax-delinquent trust fund lands forfeiting to the state under Laws of 1935, c. 386 and Extra Session Laws, 1935-36, c. 105. It eliminates any and all claims on the part of the county and its subdivisions to any income received by the state from the resale of tax-forfeited trust fund lands.

Minn. Laws 1937, c. 391 created a legislative interim commission to study and report to the next session of the legislature upon the classification and zoning of tax-forfeited lands into agricultural and non-agricultural areas, the payment of indebtedness against lands in state forests, game preserves, and conservation areas, and woodlot and shelterbelt problems in the agricultural sections of the state.

Minn. Laws, Extra Session 1937, c.

71 authorizes the cancellation of real-estate tax-judgment-sale certificates, state assignment certificates, or forfeited-tax-sale certificates if not properly recorded within the time limit allowed for such recording, and also their cancellation under certain other specified circumstances.

Minn. Laws, Extra Session 1937, c. 38 repeals Laws 1933, c. 407 as of September 1, 1937. It authorizes the former owner of tax-delinquent lands which forfeited for non-payment of taxes for one or more of the years 1926, 1927, 1928, 1929, and 1930 to repurchase such lands, prior to March 1, 1938, by paying three-fifths of the aggregate of all accrued taxes and assessments at the time of forfeiture, less interest and penalties but including costs. Upon repurchase, any special assessments payable in 1937, cancelled by Laws 1935, c. 386, are to be reinstated. Persons making the repurchase may elect to pay one-fifth of the repurchase price at the time of repurchase and the balance in ten equal installments, with interest at four per cent. No timber is to be removed from repurchased lands until the repurchase price is paid in full. Payments received under this law are distributed by the county auditor as are other real-estate taxes and assessments.

This law, like all other repurchase laws, does not apply to tax-forfeited lands within the Red Lake Game Preserve or other conservation areas.

The other "repurchase" laws, differing in detail but with the same basic intent of facilitating the redemption of tax-forfeited lands, are as follows: Minn. Laws 1939, c. 283; Minn. Laws 1941, c. 43 and c. 108; Minn. Laws 1943, c. 164, c. 535, and c. 603; Minn. Laws 1945, c. 296, c. 487, and c. 505; Minn. Laws 1947, c. 366, and c. 490; Minn. Laws 1949, c. 461; Minn. Laws 1951, c. 124 and c. 514; Minn. Laws 1953, c. 471; Minn. Laws 1955, c. 612; and Minn. Laws 1957, c. 32 and c. 832. Minn. Laws 1957, c. 832 is almost a word for word duplication

of Minn. Laws 1957, c. 32, except that it does not have a terminal date. Thus it appears to convert that act into a general law, to run indefinitely into the future. These laws have been codified into Minn. Statutes 1957, c. 282, secs. 282.012 and 282.41.

Little or no use seems to have been made of the original "repurchase" law passed in 1933. "Repurchases" as an important activity in the tax-forfeiture situation started with the "repurchase" act of 1937 (Extra Session Laws, 1937, c. 88). Under this law 5,947 repurchases, producing \$873,378 were made. Under the 1939 and 1941 laws a total of 1,756 repurchases were made, and produced \$431,266. These laws provide delinquent taxpayers whose land has recently been tax-forfeited with a procedure under which they can redeem title to their land at two-year intervals, approximately from mid-March to November 1.

Minn. Laws 1939, c. 264 amended existing legislation so as to require the payment of the taxes which have accrued upon a parcel of land since its purchase, where it has been purchased on a deferred-payment plan, before the Tax Commission will issue a deed (specified as a quit-claim deed) covering such parcel. It also states that failure of the purchaser of a tax-forfeited parcel to pay any deferred installment on the principal of the purchase price plus current taxes will, without any action on the part of the state, cancel the purchaser's rights to the parcel.

Minn. Laws 1939, c. 328 constituted a re-writing and major revision of chapter 386 of the laws of 1935, which provided for the disposal or retention by the county of lands which had tax forfeited to the state.

It requires the classification of tax-forfeited parcels into conservation and non-conservation lands, lists guides to be used in making such a classification, and authorizes reclassification from time to time when justified. Approval of the county board's classification by

the town board is required.

Tax-forfeited lands may be sold to governmental subdivisions when such divisions will use the lands for public purposes. The law requires the retention in public ownership of the lands classified as "conservation" lands. It authorizes the Commissioner of Conservation to assist the county board in the management and development of such lands, but specifies that the selling of timber and other products is to remain under the jurisdiction of the county board and county auditor.

Non-conservation land may be sold, at either public or private sale at not less than its appraised value, after appraisal by the county board. The value of timber standing on the parcel must be appraised separately from that of the land, and the county board's appraisal must be submitted to the Commissioner of Conservation for approval before the parcel is offered for sale.

Sales are to be conducted by the county auditor and must be immediately reported to the Tax Commission in order that it may prepare the deed if the sale is for cash or set up the necessary record if it is on terms. Not later than October 31 of each year, the county auditor must report to the Tax Commission such tracts as are in default with reference to principal payment, interest, or taxes due, so that the commission may order the county board to cancel the sale, take possession of the land, re-appraise it, and re-offer it for sale. Under certain circumstances, cancellation of the contract may be delayed for a year. For cash and completed term sales the Tax Commission will issue a deed which shall have the force and effect of a patent from the state.

All parcels to be offered for sale must first be offered to the highest bidder at a public sale. If there is no bidder, the parcel may be offered at private sale at not less than its appraised value. If no such sale is made, the parcel may be re-appraised by the

county board and re-offered at the next public sale. Parcels not offered for immediate sale continue to be held in trust by the state for taxing districts, under the supervision of the county board.

The county auditor is specifically authorized (1) to sell hay stumpage on tax-forfeited lands and to lease both conservation and non-conservation tax-forfeited lands as directed by the county board, and (2) to sell dead, down, and mature timber upon any tract designated by the Conservation Commissioner. Leases of tax-forfeited lands and sales of hay and timber stumpage on such lands must be offered at advertised public sale at not less than their appraised values. The appraised value of the timber and the forestry practices to be followed in cutting it must be approved by the Commissioner of Conservation. Non-conservation lands must not be leased for more than one year at a time.

Where an undivided portion of any parcel forfeits to the state, the owner or owners of the non-forfeiting portion may maintain an action against the state aimed at bringing about its subdivision into tax-forfeited and non-tax-forfeited portions.

The net proceeds from the sale or rental of any parcel of forfeited land, or from the sale of any products therefrom, are to be apportioned by the county auditor to the taxing districts interested therein as follows:

- (a) To the discharge of any special assessments for drainage or for other purposes;
- (b) To discharge the parcel's pro-rata share of any school district, township, city, village, or county indebtedness properly a lien on such parcel;
- (c) The balance, if any, to be apportioned 10 per cent to the state, 20 per cent to the township, village, or city, 30 per cent to the county, and 40 per cent to the school district.

All monies received through the

operation of the act are placed in a "Forfeited Tax Sale Fund," which is to be used:

1. To compensate the members of the county board at a rate not to exceed \$3.00 per day (total annual compensation for all forms of service not to exceed \$1,200.00) for the time spent in classifying and appraising tax-forfeited lands, plus mileage as fixed by law.
2. For necessary clerical help plus such additional compensation to the county auditor as the county board may allow.
3. For other necessary expenses connected with the administration of tax-forfeited lands. However, disbursements from the fund for repairs, refunds, costs of quieting title, or any other expenses pertaining to specific parcels are charged against the account of the taxing districts within which such parcels are located. (One county auditor has suggested that there ought to be a minimum account below which such payments should not be required to be calculated and paid.)
4. The remainder to be distributed, at the regular March settlement, in accordance with (a), (b), and (c) in the preceding paragraph.

The record owner of the fee title to any tax-forfeited parcel at the time it forfeited to the state may, not less than one week prior to the date of the public sale at which that parcel is being offered, repurchase it at its appraised value.

Minn. Law 1939, c. 341 specifies that the county auditor's certificate of forfeiture, filed as provided for by law, shall be prima facie evidence that all requirements respecting the taxation and forfeiture of the lands therein described were complied with, and that at the date of the certificate absolute title to such lands was vested in the state. It also provides in detail the procedure to be followed by anyone claiming title to lands covered by such

an auditor's certificate.

The act also authorizes the state to bring action to quiet title, either to single parcels or to groups of parcels of tax-forfeited land, which might include all parcels in any county.

Minn. Laws 1941, c. 97 authorizes the payment of delinquent taxes in inverse order to that in which they were levied. However, if such a procedure is followed the parcel will tax-forfeit on the basis of the oldest outstanding delinquent tax. This act also orders rents collected by the sheriff on tax-delinquent real estate to be applied on the last due delinquent taxes outstanding against the property producing such rent.

Minn. Laws 1941, c. 215 authorizes the creation of the Beltrami Island and the Pine Island Conservation Projects, spelling out in detail the exact area to be covered by each. The Commissioner of Conservation is made responsible for the management and administration of these projects. Disposition of receipts is specified.

Minn. Laws 1941, c. 278 requires the approval by the Conservation Commissioner of the county board's classification of tax-forfeited lands as agricultural before they can be offered for sale. However, it authorizes the county auditor, with the approval of the Conservation Commissioner, to sell any parcel of tax-forfeited land to any governmental subdivision of the state for any public purpose for not less than its appraised value as determined by the county board.

This act orders the county board to appraise any merchantable timber found upon tax-forfeited lands which it classifies as agricultural separately from the land. The appraised value of such timber must be approved by the Commissioner of Conservation before it can be offered for sale.

Sale notice and procedure were somewhat amended by the act. All sales under the act must be for cash or with at least 15 per cent of the purchase price payable at the time of

the purchase, the balance to be paid in equal annual installments over a period of 20 years with interest at 4 per cent. The appraised value of all merchantable timber on all agricultural lands offered for sale must be paid for in cash in full at the time of their purchase.

The county auditor, with county board approval, is authorized to sell for cash any dead, down, or matured timber designated by the Conservation Commissioner at not less than its appraised value to the highest bidder at a public sale. Timber offered at a public sale but not sold may be sold later by the county auditor at private sale for not less than its appraised value. The purchaser of timber must follow such forestry practices as may be specified by the Commissioner of Conservation.

Minn. Laws 1941, c. 397 forbade the removal of buildings or other improvements or of any standing timber, minerals, sand, gravel, peat, subsoil, or top soil from tax-delinquent lands unless the income received for these items is paid to the county treasurer for application on the amount of taxes due.

Minn. Laws 1941, c. 511 exempts the Red Lake Game Preserve and the reforestation and flood-control lands from the provisions of Laws 1939, c. 328 governing the sale of tax-forfeited lands. It authorizes the deeding of tax-forfeited lands to governmental subdivisions for authorized public use.

This law also authorizes county boards to offer non-agricultural tax-forfeited lands located within state forests to the state for management, and requires the Commissioner of Conservation to examine such lands and if he finds that they are suitable for timber production, game refuges, etc. to accept them for the state and to incorporate them in the proper state forest or game refuge. The title of all lands so accepted shall be held by the state free from any trust in favor of any taxing districts. All proceeds

derived from the sale of timber, hay stumpage, or other sources are to be paid into the general revenue fund of the state.

Minn. Laws 1943, c. 171 authorizes the payment to the counties of 50 per cent of the gross income produced by non-trust-fund state forest lands in state forests. This provision includes tax-forfeited lands turned over to the state by the counties for management and non-trust-fund lands acquired in any other manner.

Minn. Laws 1943, c. 204 requires governmental subdivisions to reconvey to the state such tax-forfeited lands transferred to them for specific uses as are not being used for the purposes for which they were transferred. If not so reconveyed, the Commissioner of Taxation is empowered to repossess such lands by cancelling the local government's title to them.

Minn. Laws 1943, c. 287 sets up administrative procedures to be followed when minerals and mineral rights are being developed upon tax-forfeited lands where title is still held by the state, and where lands have been sold but the state has retained mineral rights.

Minn. Laws 1943, c. 327 provides for the acquisition by the state of tax-delinquent lands, prior to forfeiture, where such acquisition is approved by the county board, through acceptance by the state of conveyance, without payment of delinquent taxes, executed by the title holder of record. Lands acquired in this manner have the same status as tax-forfeited lands.

Minn. Laws 1943, c. 578 created an interim commission of House and Senate members, including the Commissioner of Conservation, to study (1) the tax-delinquency and tax-forfeiture problem in its relation to forestry, (2) the use of tax-forfeited lands for forest production, and (3) the whole forestry problem as it relates to the people of Minnesota and the development of the resources of the state.

Minn. Laws 1943, c. 627 deals with the sale procedure pertaining to tax-forfeited lands. In the case of deferred-payment sales it requires the buyer, at time of purchase, to pay not less than 10 per cent of the purchase price for land and improvements, and the balance in yearly or monthly installments spread over a period not to exceed 10 years, with interest at 4 per cent. All timber or timber products on the land must be paid for at the time of purchase.

Full payment for all timber sold on tax-forfeited lands must be made at the time of purchase. However, the county board may require final settlement to be made on the basis of the scale of the products after cutting. Prices per unit of scale by tree species and procedure to be followed in scaling, together with a listing of the forestry practices to be followed in the cutting of the timber, must be included in the timber-sale contract. Persons doing scaling for the county must be approved by the Commissioner of Conservation. Small amounts of timber, the appraised valuation of which does not exceed \$250.00, may be sold at private sale at its appraised valuation. Not more than one sale at a time may be made to a single individual.

The county auditor may lease unsold tax-forfeited lands for use as cottage or camp sites and for agricultural use under such terms as the county board may prescribe, and may dispose of hay, sand, gravel, etc. He may also grant easements across such lands for telephone, telegraph, electric power, sewer, and water lines, and for highways and railroads. The right to sell tax-forfeited lands subject to such leases or easements must be retained by the county; also the right to cancel them. Leases involving a consideration of more than \$10.00 per year must be offered at public sale.

Net proceeds from any sale of timber or other products or leases are to be deposited in the "forfeited tax sale

fund" and are to be distributed as are the receipts from sale of tax-forfeited land.

An owner or owners of an undivided portion of a parcel of land whose taxes are paid may make the state and/or the other owner of the parcel defendants in an action to partition it.

County boards were authorized to appoint necessary assistants to the land commissioner, and to delegate authority to carry on all the activities necessary to the proper protection and administration of the county's tax-forfeited lands. The county board is authorized to determine the compensation of both the land commissioner and his assistants, whose salaries and expenses are to be paid out of the "forfeited tax sale fund."

This act also authorizes the Commissioner of Conservation to delegate all of his powers and duties concerning approval of appraised timber values, forestry practices, and parcels of land from which timber may be sold to competent forestry field officers of the Conservation Department.

Minn. Laws 1945, c. 98 authorizes the reinstatement of cancelled certificates covering the purchase of tax-forfeited lands, where the purchasers have paid at least 50 per cent of the purchase price provided the lands have not been sold or included in zoned or restricted areas. All unpaid taxes, penalties, interest, and costs up to the time of cancellation, plus an amount equal to the taxes and assessments which would have been levied against the property had the certificate not been cancelled, must be paid at the time the certificate is reinstated.

Minn. Laws 1945, c. 150 requires the county auditor, when any part of the county is covered by a state forest, to submit to the Commissioner of Conservation, before first publication, a list of the lands (outside of those located within municipalities) to be offered for sale. If the Commissioner finds standing timber to be present on any parcel, with no separation in the

appraisal of timber and land values, that parcel must be withdrawn from sale until a separation is made that meets with the approval of the Commissioner.

Further, the act stipulates that, when any parcel of land includes timber, and the price of the parcel is bid up to an amount above its appraised value, the excess over the total appraised value is to be apportioned between the land and the timber in the same ratio that these values bear to each other in the appraisal. No timber may be removed from such a parcel, sold under a deferred-payment contract, until the payments on such a contract equal or exceed the prorated value of the timber.

Minn. Laws 1945, c. 151 authorizes the Commissioner of Conservation to release to the county for sale any tax-forfeited lands located within a state forest which are in an area zoned as open for agricultural development. This action can be taken only where the county has been "zoned."

Minn. Laws 1945, c. 169 definitely separates from trust-fund control parcels of land for which the purchaser had completed payment to the state but had not received patent, and which since completion of payments due the state have tax forfeited to the state. Such tax-forfeited parcels are placed under the control of the county board and are given the same status as other tax-forfeited lands.

Minn. Laws 1945, c. 347 authorizes the creation of "Memorial Forests" out of tax-forfeited lands. "Any county may by resolution of the county board set aside tax-forfeited land which is more suitable for forest purposes than for any other purpose and dedicate said lands as a memorial forest and manage the same on forestry principles. Any monies received as income from the land so dedicated and set aside may be expended from the forfeited tax fund for the development and maintenance of the dedicated forest." (Italics supplied.)

Minn. Laws 1945, c. 381 requires the county auditor to submit to the Commissioner of Conservation a copy of each contract of sale covering lands within conservation areas sold at public sales of tax-forfeited lands. The county treasurer is ordered to collect the payments required by such contracts and on June 30 and December 31 of each year to transfer to the Commissioner of Conservation, for distribution, as required by law, such monies as he has collected on such contracts during the preceding six months. By this act the county board is also required to reclassify and reappraise any lands which may revert to the state through cancellation of sale contracts.

Minn. Laws 1945, c. 466 authorizes the county board to pay the county auditor an amount not to exceed 3 per cent of his regular salary to remunerate him for the additional duties devolving upon him in connection with the administration of tax-forfeited lands. This sum is to be deducted from the gross amount of the "Forfeited Tax Sale Fund." Also the auditor is authorized to hire additional office help to assist him in keeping the necessary records connected with the administration of tax-forfeited lands, but the wages of such additional help must not exceed 3 per cent of the annual receipts from tax-forfeited lands within the county.

Minn. Laws 1945, c. 574 authorizes county boards to "declare lands classified as conservation lands as primarily suitable for timber production and as lands which should be placed in private ownership for such purposes." If such action is approved by the Commissioner of Conservation, the lands so classified, or any part of them, may be sold by the county board in the same manner as other non-conservation lands.

Minn. Laws 1947, c. 484 authorizes the cancellation of all tax-forfeited land purchase contracts which were, as of that date, in default, and it

limits the time within which an action can be initiated based upon the cancellation of such contracts.

Minn. Laws 1947, c. 496 authorizes the sale of tax-forfeited lands classified as non-agricultural and chiefly valuable for conservation purposes to purchasers who will include them in auxiliary forests.

Minn. Laws 1947, c. 143 and Laws 1949, c. 220 represent attempts to provide more realistic and reasonable legislation with reference to the legal authorizations previously in effect covering the construction of public drainage ditches. The laws in force prior to 1947 relating to such ditches enabled a very small minority of the property owners who would have to pay for them to force their construction. By 1929 the resulting ditch liens were so large that they were a very important factor in bringing about the tax delinquency and ultimately the tax forfeiture of several million acres of peat-covered and other wet lands.

Minn. Laws 1947, c. 553 authorizes the county board, before making its annual apportionment of the net amount of the "Forfeited Tax Sale Fund" to set aside 10 per cent of that fund for use in developing timber resources of tax-forfeited lands other than those included in "memorial forests." Projects upon which such money is spent must have the approval of the Commissioner of Conservation.

Minn. Laws 1949, c. 27 apportions that part of the net amount of the annual "Forfeited Tax Sale Fund" which is derived from unorganized territory, and which would normally go to a town or towns, to the county board for administration.

Minn. Laws 1949, c. 401 orders the net proceeds from the sale or rental of any parcel of tax-forfeited land, or from the sale of any products therefrom, to be apportioned by the county auditor as follows:

- (1) To the municipal subdivision such portion of the income received as

is needed to cover the increase in value of the parcel due to public improvements;

- (2) Such portion of the remainder as may be required to discharge any special assessments chargeable against the parcel for drainage or other purposes;
- (3) Such portion of the remainder as may be needed to meet the parcel's proportionate liability for any bonds issued by the school district, town, city, village, or county in which the parcel is located;
- (4) Any balance remaining shall be apportioned as follows:

(a) Annually, by resolution, the county board may set aside not to exceed 10 per cent of the remaining receipts for timber development on either tax-forfeited land or "memorial forest" land.

(b) The remainder of the "Forfeited Tax Sale Fund" is to be apportioned 10 per cent to the state; 20 per cent to the town, village, or city; 30 per cent to the county; and 40 per cent to the school district. For unorganized territory, the town's share is to be administered by the county board.

Minn. Laws 1949, c. 498, among other things, created the "Consolidated Conservation Areas Fund," specifying what items of income are to flow into this fund, what items of expense are to be paid out of it, etc. It forbids the repair of that part of any drainage system lying within a game preserve unless such repair is approved by the Commissioner of Conservation. Many administrative details are covered.

Minn. Laws 1951, c. 203 greatly expands prior legislation relating to easements on tax-forfeited lands. Lands may be sold subject to existing easements, and such easements may be canceled for non-use or other sufficient reason.

Minn. Laws 1951, c. 365 authorizes the Iron Range Resources and Re-

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habilitation Commission, when requested by the county board, to assist the county in carrying out projects aimed at the long-range development of its timber resources on tax-forfeited lands.

The act also authorizes the county board to levy a tax, not to exceed one mill, where an insufficient amount of other monies is available, for the development of the timber resources on tax-forfeited lands. This levy must not exceed \$15,000 per annum in any individual county.

Minn. Laws 1953, c. 144 liberalizes the conditions pertaining to tax-forfeited land transferred to governmental subdivisions for specific uses. If such a subdivision wishes to use the land for some other purpose, it may apply to the Commissioner of Taxation for permission to do so. Ordinarily he will grant such a request.

Minn. Laws 1955, c. 387 extends to tax-forfeited lands and the timber upon them the trespass laws prohibiting the cutting and removal of timber from state lands and prescribes penalties for violations thereof. It orders the county attorney to prosecute all trespass cases arising on tax-forfeited lands within his county.

Minn. Laws 1955, c. 389 authorizes the sale of lands classified as non-agricultural (conservation) for inclusion in auxiliary forests. It specifies how title to such lands is to be conveyed by the state to the purchaser, including title examination by the county attorney.

Minn. Laws 1955, c. 486 redistributes the income obtained from state-owned tax-forfeited lands located south of Lake of the Woods and Rainy River and outside of the boundaries of state forests,—90 per cent to the county, and 10 per cent to the state. The county's share is to be allocated 20 per cent to the county road and bridge fund, 35 per cent to the county revenue fund, and 45 per cent to the school districts within which the income accrues. Repealed, effective July 1, 1959, by Minn.

Laws 1957, c. 675.

Minn. Laws 1955, c. 619 authorizes the county auditor, with the approval of the county board, to grant permits, licenses, and leases on and across tax-forfeited lands for the depositing of mine strippings, etc., upon such conditions, for such consideration, and for such period as the county board may determine. Any income received is to be distributed as is other income received from tax-forfeited lands.

Minn. Laws 1957, c. 346 authorizes the county auditor, with the approval of the county board, in addition to activities already provided for, to permit the use of tax-forfeited lands for the depositing of mining wastes under such conditions, for such consideration, and for such period, not to exceed 15 years, as the county board may determine, subject to the approval of the Commissioner of Conservation.

Minn. Laws 1957, c. 168 by its amendment of Minn. Stat. 1953, sec. 508.67, lays down the procedure to be followed in quieting title to tax-forfeited lands by court action and registration of title.

Minn. Statutes 1957, c. 282, Secs. 282.012, 282.241, and 282.251 limit "repurchases" to such as will right hardship or injustice, or will be in the public interest. If the proposed "repurchase" is within a "restricted" area it can be authorized only by a unanimous vote of the county board, supported by the approval of the Commissioner of Conservation.

Minn. Laws 1957, c. 675 repeals Minn. Laws 1955, c. 486, and amends Minn. Statutes 1953, Sec. 84A.51 in such a manner as to require the state to pay to the counties one half of the income received in the Consolidated Conservation Areas Fund. Effective July 1, 1959, each county's share is to be apportioned as follows: 30 per cent to the county development fund for the rehabilitation and development of that portion of the county lying within the conservation area; 40 per cent to the capital outlay fund of the school

district from which derived; 20 per cent to the county revenue fund; and 10 per cent to the township road and bridge fund of the township from which derived, this share, where derived from land lying in unorganized townships, to be added to the county revenue fund. An interesting question is whether the act will apply to "Volstead lands" acquired by the state.

Minn. Laws 1957, c. 844 provides the state with what was hoped to be an effective method of preventing the breaking of the state's title to tax-forfeited parcels of land by, or in the name of, the last owner of record at the time the parcel in question became delinquent. Facts and claims to be presented to the court, and procedures to be followed, are stated. This law attempts to invalidate most of the grounds which have been used in the past to break the title of the state to those parcels of tax-forfeited lands which have a higher value than the total amount of the taxes that had accumulated against them at the time that they forfeited. Furthermore it requires the inclusion in the "repurchase" price of a tax-forfeited parcel of the taxes which would have accumulated against it between the date of forfeiture and the date of "repurchase," thus materially increasing the cost of making a "repurchase" as compared with making one prior to 1957. While this act may prove to be a very important one, it does not appear to really enable the state to give a merchantable title to the purchaser of tax-forfeited lands.

Minn. Laws 1959, c. 158 orders the distribution of income from rents and royalties from mineral leases accruing upon tax-forfeited lands to be distri-

buted as follows: 20 per cent to the general revenue fund of the state and 80 per cent to the county, to be divided 3/9ths to the county, 2/9ths to the town, village or city, and 1/9ths to the school district. Where the state owns only subsurface minerals the lessee must properly compensate the owner of the surface for any damage to him by mining operations.

Minn. Laws 1959, c. 187 authorizes the withdrawal and sale by the county board, with the approval of the Commissioner of Conservation, of such "memorial forest" tax-forfeited lands as it finds more suitable for other than "memorial forest" purposes.

Minn. Laws 1959, c. 348 authorizes the classification or re-classification of tax-forfeited lands within towns whose taxable valuation is under \$20,000 without the approval of the town board. In such classification or re-classification the "present use of adjacent lands, productivity of the soil, character of the forest or other growth, accessibility of the land to established roads, schools and other public services, or their suitability or desirability for particular uses" must be considered.

Minn. Laws 1959, c. 454 extends the period which may be covered by a cottage site lease involving tax-forfeited land to 10 years. This act also authorizes the county auditor, with the approval of the county board and the Commissioner of Conservation, without holding a public sale, to lease for periods up to 25 years in length, tax-forfeited parcels for the removal of peat under such terms and conditions as the county board may prescribe. However, the county auditor must hold an advertised public hearing before granting such a lease.

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APPENDIX V

CHRONOLOGICAL SUMMARY OF SELECTED FEDERAL AND STATE LEGISLATION RELATING TO LAND OWNERSHIP IN MINNESOTA

The purpose of the following summary is to trace the evolution of federal and state policies with respect to ownership of forest and related lands as indicated by legislative enactments. Acts that have little or no bearing on policy, including those that go into administration in considerable detail, are not included. The summary shows only by inference, and even then only incompletely, the status of legislation now in force. This information can be obtained from the appropriate federal and state codes.

"Stat." refers to United State Statutes at Large, "U. S." to United States Supreme Court decisions, and "Ch." to the chapter number of Minnesota Laws for the year indicated. The page number indicates the first page of the act cited and not necessarily the page on which the provision in question appears.

FEDERAL LEGISLATION

1785. Ordinance of May 20 provided for the rectangular system of survey of the public lands. After survey, the lands were to be sold at auction for cash to the highest bidder at not less than \$1.00 per acre.

1787. Ordinance of July 13 for the government of the Northwest Territory provided that "the legislatures of these districts, or new states, shall not interfere with the primary disposal of the soil by the United States in Congress assembled."

1789. Constitution provided (Art. 4, Sec. 3, Par. 2) that "the Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States." This provision has been repeatedly interpreted by the Supreme Court (14 Peters 526, 13 Wallace 92, and other cases) as giving Congress complete control over the public domain.

1790. Act of July 22 (1 Stat. 157) provided that no sale of lands made by any Indians, or any nation or tribe of Indians, shall be valid "unless the same shall be made and duly executed at some public treaty, held under the authority of the United States."

1796. Act of May 18 (1 Stat. 464) provided for a Surveyor General, raised the minimum price of public lands to \$2.00 per acre, and reserved all salt springs for future disposal. All navigable streams within the territory covered by the act were declared to be public highways.

1796. Act of May 19 (1 Stat. 469) forbade settlement on any lands belonging, secured, or granted to any Indian tribe by treaty with the United States, and provided that no title or claim to lands obtained from any Indian, or nation or tribe of Indians, should be valid "unless the same shall be made by treaty, or convention, entered into pursuant to the Constitution."

1800. Act of May 10 (2 Stat. 73) authorized the sale of public lands on the installment plan, and provided that lands remaining unsold after the public sales could be disposed of by the local land offices at private sales at not less than the minimum price of \$2.00 per acre.

1803. Act of October 31 (2 Stat. 245) authorized the President to take possession of the Louisiana Purchase, which added some 523 million acres to the public domain, including that part of Minnesota west of the Mississippi River.

1805. Treaty of September 23 with the Sioux nation ceded to the United States for the purpose of establishing military posts two tracts at the mouth of the St. Croix River and the St. Peter's River.¹

¹Treaties with the Indians are covered in more detail in Part II, pages , than in this summary.

1807. Act of March 3 (2 Stat. 445) forbade any one to settle on or occupy the public lands until authorized by law.

1820. Act of April 24 (3 Stat. 566) provided for the sale of public lands to the highest bidder at a minimum price of \$1.25 per acre, with full cash payment at the time of sale, and continued the existing authorization for private sale, at not less than the minimum price, of lands unsold at the public auction.

1837. Treaties of July 29 with the Chippewa Indians (7 Stat. 536) and of September 29 with the Sioux Indians (7 Stat. 538) ceded to the United States the triangle between the Mississippi and St. Croix rivers.

1841. Act of September 4 (5 Stat. 453) granted 500,000 acres for internal improvement to each of the nine public-land states then in the Union and to such new states as might later be admitted. It also made the preemption privilege general by authorizing settlement upon not more than 160 acres of surveyed, nonmineral, unoccupied, and unreserved public land and its pur-

chase at the minimum price of \$1.25 per acre.

1842. Webster-Ashburton Treaty of August 9 (8 Stat. 572) finally fixed the northern boundary of Minnesota.

1844. Act of May 23 (5 Stat. 657) provided for the disposal of town sites on the public lands in tracts not exceeding 320 acres.

1846. Act of August 3 (9 Stat. 51) authorized the Commissioner of the General Land Office to sell isolated or disconnected tracts of unoffered land without the formality of proclamation by the President.

1849. Organic Act of March 3 (9 Stat. 403) creating the Territory of Minnesota established its boundaries, provided for its government, and reserved sections 16 and 36 in each township "for the purpose of being applied to schools" in the territory.

1851. Act of February 19 (9 Stat. 568) authorized the Secretary of the Interior to reserve from sale a quantity of land not exceeding two entire townships for the use and support of a university in the territory.

1851. Traverse des Sioux Treaty of July 23 (10 Stat. 949) and Mendota Treaty of August 5 (10 Stat. 954) with the Sioux Indians ceded to the United States a large area in southern and western Minnesota (the "Suland").

1852. Act of March 2 (10 Stat. 3) made all warrants for military bounty lands assignable.

1852. Act of June 19 (10 Stat. 147) changed the name of St. Peter's River to Minnesota River.

1854. Act of June 29 (10 Stat. 302) donated to the territory for the purpose of aiding in the construction of a railroad from the southern line of the territory, by way of St. Paul, to the eastern line in the direction of Lake Superior, the alternate, odd-numbered sections within six miles of the road.

1854. Graduation Act of August 4 (10 Stat. 574) reduced the price of public land according to the time it had been on the market, with a mini-

mum of 12.5 cents per acre after thirty years.

1854. Act of August 4 (10 Stat. 575) rescinded the railroad land grant of June 29, 1854.

1854. Act of August 4 (10 Stat. 576) opened unsurveyed land in Minnesota to preemption.

1854. Treaty of September 30 (10 Stat. 1109) with the Chippewa Indians ceded to the United States a large area in northeastern Minnesota.

1855. Treaty of February 22 (10 Stat. 1165) with the Chippewas of the Mississippi ceded to the United States a large area in north central Minnesota, together with "all interest they may have in any other lands in Minnesota or elsewhere," with the exception of certain specified reservations.

1855. Act of March 3 (10 Stat. 701) liberalized military bounties so as to grant 160 acres to all participants in all wars from the Revolution to date.

1857. Enabling Act of February 26 (11 Stat. 166) authorized Minnesota to form a constitution and granted to it sections 16 and 36 in every township reserved for school purposes by the act of March 3, 1849; the two townships reserved for the use and support of a university reserved by the act of February 19, 1851; ten sections to aid in the erection of public buildings; all salt springs not exceeding twelve in number, with six sections of land adjoining; and five per cent of the net receipts from the sale of public lands within the state. These grants were contingent upon agreement by the state, in its constitution, never to interfere with the primary disposal of the soil within its borders, to impose no tax on lands belonging to the United States, and not to tax nonresident proprietors higher than residents.

1857. Act of March 3 (11 Stat. 195) granted to Minnesota for the purpose of aiding in the construction of four railroads in different parts of the state the alternate, odd-numbered sections within six miles on each side of the roads. Lieu selection was permitted to

a distance of fifteen miles from the road.

1857. Act of March 3 (11 Stat. 212) created the office of Surveyor-General in Minnesota.

1857. Act of March 3 (11 Stat. 254) authorized Minnesota, Kansas, and Nebraska to make selections in lieu of any school sections settled upon or cultivated, or selected or occupied as town sites, prior to survey.

1858. Act of May 11 (11 Stat. 285) admitted Minnesota to the Union.

1859. Act of March 3 (11 Stat. 408) forbade the unlawful cutting of timber on lands of the United States reserved or purchased for military or other purposes.

1860. Act of March 12 (12 Stat. 3) extended the provisions of the swamp-land acts of 1849 and 1850 to Minnesota and Oregon.

1861. Act of March 2 (12 Stat. 208) donated to the states of Minnesota and Oregon the lands reserved by the act of February 19, 1851, for the use of a university.

1862. Homestead Act of May 20 (12 Stat. 392) granted 160 acres of unappropriated public land subject to preemption and sale at a minimum price of \$1.25 per acre to persons who would reside on it and cultivate it for five years. Commutation, or purchase of the land at its regular price, was possible at any time after six months from the date of filing.

1862. Act of June 2 (12 Stat. 413) extended the Preemption Act of 1841 to unsurveyed land in all the states and territories and repealed the Graduation Act of 1854.

1862. Morrill Act of July 2 (12 Stat. 503) granted to each state 30,000 acres of nonmineral public land for each senator and representative to which it was entitled under the census of 1860, for the establishment of colleges of agriculture and the mechanic arts. States without public lands were given an equivalent amount of scrip, purchasers of which were not to take

up more than a million acres in any one state.

1862. Act of July 12 (12 Stat. 624) authorized the St. Paul and Pacific Railroad Company to change the route of its branch line, but made no other change in the terms of the grant.

1863. Act of February 16 (12 Stat. 652) annulled the treaties with the Sioux Indians involved in the outbreak of 1862 and forfeited their lands within their reservation south of the Minnesota River.

1863. Act of March 3 (12 Stat. 819) provided for the removal of the Sioux Indians involved in the outbreak of 1862 to a reservation to be selected by the President outside the bounds of any state, and for the sale for their benefit of the lands in their reservation south of the Minnesota River.

1863. Old Crossing Treaty of October 2 (13 Stat. 667) with the Red Lake and Chippewa bands of Chippewa Indians ceded to the United States a sizable area in northwestern Minnesota.

1864. Act of May 5 (13 Stat. 64) granted to the state to aid in the construction of a railroad from St. Paul to the head of Lake Superior the alternate, odd-numbered sections to a distance of 10 miles on each side of the road, with lieu selections to a distance of 20 miles.

1864. Act of May 12 (13 Stat. 72) increased the grant of March 3, 1857, to the state for the benefit of the St. Paul & Sioux City Railroad Company to a distance of 10 miles on each side of the road, with lieu selections to a distance of 20 miles.

1864. Act of July 1 (13 Stat. 343) repealed the act of May 23, 1844, relating to town sites, and provided in detail for the sale at auction of town sites established on public lands at not less than \$10 per lot (not to exceed 4,200 square feet in size).

1864. Act of July 2 (13 Stat. 365) incorporated the Northern Pacific Railroad Company and granted it the alternate, odd-numbered sections to a dis-

tance of 40 miles on each side of the road in the territories traversed, and to a distance of 20 miles in the states, to aid in the construction of a railroad and telegraph line from Lake Superior to Puget's Sound.

1865. Act of March 3 (13 Stat. 526) increased the grant for each of the four roads covered by the act of March 3, 1857, to a distance of 10 miles on each side of the road, with lieu selections to a distance of 20 miles.

1866. Treaty of April 7 (14 Stat. 765) with the Bois Forte band of Chippewa Indians ceded to the United States all claim to land everywhere, with certain reservations.

1866. Act of July 4 (14 Stat. 87) granted to the state to aid in the construction of two railroads the alternate, odd-numbered sections to a distance of 10 miles of each side of the road, with lieu selections to a distance of 20 miles.

1868. Act of July 23 (15 Stat. 169) granted Minnesota 200,000 acres of public land to aid the state in constructing a lock and dam at Meeker's Island to facilitate navigation of the Mississippi River between the Falls of St. Anthony and the mouth of the Minnesota River. Since construction was not begun within the required time, the grant never materialized.

1870. Act of July 8 (16 Stat. 196) authorized the Commissioner of the General Land Office to certify to Minnesota the full amount of 72 sections granted by the act of February 26, 1857, "without taking into account the lands that were reserved at the time of the admission of the state into the Union, and donated to said state by the act of Congress approved March 2, 1861 (12 Stat. 208)."

1871. Act of March 3 (16 Stat. 566) provided that no treaties should thereafter be negotiated with any Indian tribe within the United States as an independent nation or people.

1872. Act of May 10 (17 Stat. 91) constituted mineral lands a distinct class and provided for their survey and sale at \$2.50 per acre for placer mines

and at \$5.00 per acre for lode mines.

1872. Act of June 8 (17 Stat. 340) provided that innocent purchasers of illegal Chippewa half-breed scrip might complete their entries and perfect their titles by paying such price as the Secretary of the Interior should deem equitable but not less than \$1.25 per acre.

1873. Act of February 18 (17 Stat. 465) excluded lands containing iron, coal, or any other minerals in Michigan, Wisconsin, and Minnesota from the provisions of the mineral act of May 10, 1872, and opened them to exploration and purchase as before the passage of that act.

1873. Timber Culture Act of March 3 (17 Stat. 605) offered to donate 160 acres of public land to any one who would plant a specified portion of it to trees. Claimants must meet certain requirements, which reached their final form in 1878 (20 Stat. 113).

1877. Act of January 12 (19 Stat. 221) provided that saline lands which had been reserved for granting to the states on their admission to the Union were to be examined and offered for sale at public auction at not less than \$1.25 per acre if found to be actually saline.

1878. Timber and Stone Act of June 3 (20 Stat. 89) provided for the sale in Washington, Oregon, California, and Nevada of 160 acres of surveyed, nonmineral land, chiefly valuable for timber or stone and unfit for agriculture, which had not been offered at public sale, for not less than \$2.50 per acre. The purchaser had to swear that the land was being acquired solely for his own use and benefit. In 1892 the provisions of the act were extended to all the public-land states.

1879. Sundry Civil Appropriations Act of March 3 (20 Stat. 377) created the Public Land Commission, which in 1880 proposed the classification of the public lands and the sale of timber without the land. Donaldson's comprehensive "Public Domain" followed later (1880-1884).

1879. U. S. Supreme Court at its October term in the case of *Emigrant Company v. County of Adams (Iowa)* (100 U. S. 61) ruled that Congress alone has power to question the actions of a state in disposing of its swampland grant or the proceeds thereof.

1880. Act of June 15 (20 Stat. 237) relieved timber trespassers on the public lands prior to March 1, 1879, from both civil and criminal prosecution upon payment of the government price.

1886. Act of May 15 (24 Stat. 29) authorized the Secretary of the Interior to negotiate with the Chippewa Indians of Minnesota "for such modification of existing treaties and such change of their reservations as may be deemed desirable by said Indians and the Secretary of the Interior," and for the just and equitable liquidation of any claims they may have upon the government.

1887. General Allotment Act (Dawes Act) of February 8 (24 Stat. 388) authorized the President to allot lands in severalty to Indians in any reservation created by treaty, act of Congress, or Executive Order, when in his opinion the reservation or any part thereof is "advantageous for agriculture and grazing purposes." A head of a family was entitled to receive 160 acres. Indians not on any reservation who settled on any surveyed or unsurveyed public lands were entitled to receive allotment of such lands. An allottee was to receive a trust patent to run for 25 years, after which he was to receive a patent in fee simple unless the period was extended by the President.

1888. Act of June 4 (25 Stat. 166) amended the act of March 3, 1859, to forbid trespass on timberlands in Indian reservations.

1889. Nelson Act of January 14 (25 Stat. 642) authorized the President to appoint three commissioners to negotiate with the different bands of Minnesota Chippewa Indians for the cession to the United States of all their

lands in Minnesota except the White Earth and Red Lake reservations, and so much of these as were not required to fill allotments to the Indians. Proceeds from the sale of the ceded land and timber under government supervision were to go into a permanent fund for the benefit of the Indians. Agreements with the various tribes effectuating the proposed cessions were consummated between July 8 and November 21.

1889. Act of February 16 (25 Stat. 673) authorized the President to permit Indians to cut and sell dead timber on Indian reservations, provided the timber had not been intentionally killed.

1890. Second Morrill Act of August 30 (26 Stat. 417) provided for additional assistance to land-grant colleges out of proceeds from the sale of public lands.

1891. Act of February 28 (26 Stat. 794) limited allotments under the act of February 8, 1887, to 80 acres unless the land were valuable only for grazing purposes.

1891. Act of March 3 (26 Stat. 1095) repealed the Timber Culture Act of 1873 (as amended) and the Preemption Act of 1841; did not allow commutation under the Homestead Act of 1862 until 14 months after filing; limited the time within which suit to annul patent might be brought; and empowered the President to set aside as forest reserves public lands covered with timber or undergrowth, whether of commercial value or not.

1892. Act of August 3 (27 Stat. 347) granted to the state all undisposed public lands in Itasca Park, provided that the land should revert to the United States if at any time it should cease to be exclusively used for a public park, or if the state should not pass a law or laws to protect the timber thereon.

1892. Act of August 4 (27 Stat. 348) extended the Timber and Stone Act of 1878 to all of the public-land states.

1895. Act of February 26 (28 Stat. 687) amended the act of August 3, 1846, to authorize the sale at public auction of isolated tracts containing not more than 160 acres at not less than \$1.25 per acre.

1897. Act of February 24 (29 Stat. 594) provided penalties for willfully or maliciously setting fires on the public domain, for carelessly or negligently leaving a fire to burn unattended, and for failing to totally extinguish any fire in or near any forest, timber, or other inflammable material before leaving it.

1897. Sundry Civil Appropriations Act of June 4 (30 Stat. 11) specified the purposes for which forest reserves might be established and provided for their protection and administration.

1899. Act of February 28 (30 Stat. 908) authorized the Secretary of the Interior to lease ground near or adjacent to mineral, medicinal, or other springs in forest reserves for the erection of sanitariums or hotels, under such regulations as he might prescribe.

1900. On December 3 the U. S. Supreme Court in the case of *Stearns v. Minnesota* (179 U. S. 223) stated that "while some of the lands, the swamp-lands, were granted for a purpose other than railroad construction, it has long since been settled that Congress alone can inquire into the manner in which the states executed that trust and disposed of the lands."

1901. Act of February 12 (31 Stat. 785) permitted the Indians on the Grand Portage Lake Indian Reservation to cut and dispose of the timber on their several allotments under rules and regulations prescribed by the Secretary of the Interior. Similar acts followed shortly authorizing the sale of timber on other Indian lands.

1901. Act of February 15 (31 Stat. 790) authorized the Secretary of the Interior to grant rights of way through forest reserves for canals and ditches, dams and reservoirs, electrical lines, and other purposes, revocable at the discretion of the Secretary of the

Interior.

1902. Morris Act of June 27 (32 Stat. 400) amended the act of January 14, 1889, by providing that logging on 200,000 acres on the Chippewa Indian Reservation should be done under the supervision of the Bureau of Forestry, with 5 per cent of the pine left as seed trees. After cutting, the area involved was to become a forest reserve. No cutting was to be done on certain specified lands, including ten sections to be selected by the Forester with the approval of the Secretary of the Interior.

1903. Act of March 3 (32 Stat. 982) authorized the Secretary of the Interior to sell about 256,000 acres in the western portion of the Red Lake Indian Reservation, to place the proceeds in the Treasury to the credit of the Indians, and to remove the Indians from the area to be sold to the diminished reservation, subject to ratification of the proposal by the Red Lake and Pembina bands of Indians.

1904. Act of February 20 (33 Stat. 46) cited Indian ratification of cession of part of the Red Lake Reservation proposed by the act of March 3, 1903, and authorized the Secretary of the Interior to proceed with the sale of the land.

1904. Indian Appropriation Act of April 21 (33 Stat. 189) authorized the Chippewa Indians of Minnesota, with the consent of the Secretary of the Interior and under such rules as he might establish, to sell the timber on their allotments.

1904. Act of April 28 (33 Stat. 536) granted to the state of Minnesota not more than 20,000 acres of third and fourth rate land to be used for forestry purposes only. The area selected now constitutes the Burntside State Forest.

1904. Act of April 28 (33 Stat. 539) authorized allotments of 160 acres on the White Earth Indian Reservation, including the increase of existing allotments to that amount.

1905. Act of February 1 (33 Stat. 628) transferred the administration of

the forest reserves from the Secretary of the Interior to the Secretary of Agriculture.

1905. Act of February 6 (33 Stat. 700) authorized the arrest by any officer of the United States, without process, of any person taken in the act of violating the regulations relating to forest reserves and national parks.

1905. Act of March 3 (33 Stat. 861) changed the name of the Bureau of Forestry to Forest Service.

1905. Act of March 3 (33 Stat. 1001) granted to the state a small island in Bartlett Lake in Koochiching County for use as a park and forest reserve.

1906. Act of May 8 (34 Stat. 182) made numerous amendments in the General Allotment Act of February 8, 1887, including an authorization to the Secretary of the Interior to issue a patent in fee simple at any time to any Indian allottee judged to be competent and capable of managing his affairs.

1906. American Antiquities Act of June 8 (34 Stat. 225) forbade any one, without proper authority, to appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument or any object of antiquity on lands owned or controlled by the government of the United States. It also authorized the President to establish by proclamation national monuments for the preservation of features of historic, prehistoric, and scientific interest, under administration of the department already having jurisdiction over the land in question.

1906. Forest Homestead Act of June 11 (34 Stat. 233) authorized the Secretary of Agriculture to open for entry forest-reserve lands chiefly valuable for agriculture which were not needed for forest purposes and which in his judgment might be occupied without injury to the forest. Each tract was to be surveyed by metes and bounds and must not exceed 160 acres in area or 1 mile in length. Commutation was not allowed.

1906. Indian Appropriation Act of June 21 (34 Stat. 325) provided that "all restrictions as to sale, incumbrance, or taxation for allotments within the White Earth Reservation in the State of Minnesota, now or hereafter held by adult mixed-blood Indians, are hereby removed . . . and as to full bloods, said restrictions shall be removed when the Secretary of the Interior is satisfied that such adult full-blood Indians are competent to handle their own affairs." The next year the word "now" was changed to "heretofore."

This act also granted to the state Cooper Island (now Star Island) in Cass Lake for forest reserve or park purposes. Since the island was part of an Indian reservation, the state was required to pay such consideration as might be agreed upon between the Secretary of the Interior and the Governor. No agreement was ever reached, and the island is still in federal ownership as part of the Chippewa National Forest.

1906. Agricultural Appropriations Act of June 30 (34 Stat. 669) provided that 10 per cent of all money received from the forest reserves during any fiscal year, including 1906, was to be turned over to the states or territories for the benefit of the public schools and public roads of the counties in which the reserves were located, but not to the extent of more than 40 per cent of their income from other sources.

1907. Act of March 1 (34 Stat. 1015) authorized sale or conveyance of his interest in an allotment by any noncompetent Indian holding a patent containing restrictions against alienation, subject to rules and regulations prescribed by the Secretary of the Interior.

1907. Act of March 4 (34 Stat. 1256) changed "forest reserves" to "national forests."

1908. Volstead Act of May 20 (35 Stat. 169) made all unentered and all entered but unpatented public lands in Minnesota subject to all of the provisions of the laws of the state relating

to the drainage of swamp and overflowed lands, and authorized the establishment of liens against such lands to meet their share of the costs incurred in connection with any drainage project.

1908. Agricultural Appropriations Act of May 23 (35 Stat. 251) directed the Forest Service to aid in the enforcement of state laws relating to stock, forest-fire control, and fish and game protection, and to aid other federal bureaus in the performance of their duties. It also increased the payment to the states for the benefit of county schools and roads to 25 per cent of the gross receipts from national forests, eliminated the 40 per cent limitation, and made the legislation permanent.

1908. Act of May 23 (35 Stat. 268) created the Minnesota National Forest out of lands covered by the Morris Act of 1902, with some change in boundaries, and with appropriate compensation to the Indians. It also increased from 5 to 10 per cent the amount of merchantable pine timber that must be reserved in future sales outside of the "ten sections," in which the Forester was permitted to use such methods of cutting as he thought wise.

1908. Act of May 29 (35 Stat. 444) authorized the Secretary of the Interior to convey to the State of Minnesota certain tribal Indian lands in Carlton County on payment of \$1.25 per acre by any person or persons on behalf of the State of Minnesota, and also certain allotted Indian lands on payment of their appraised value. All receipts were to be placed to the credit of the Chippewa Indians.

1909. Treaty of January 11 between the United States and Great Britain (36 Stat. 2448) established the International Joint Commission and provided for the utilization and development of the boundary waters between the United States and Canada.

1909. Act of March 3 (35 Stat. 781) authorized the Commissioner of Indian

Affairs to manage the timber on Indian reservations.

1910. Act of June 25 (36 Stat. 847) authorized the President to temporarily withdraw public lands from entry and reserve them for specified purposes, such withdrawals or reservations to remain in force until revoked by him or by Congress. All withdrawn lands were opened to exploration, occupation, and purchase for all minerals other than coal, oil, gas, and phosphates.

1910. Act of June 25 (36 Stat. 855) amended the General Allotment Act of 1887 so as to limit Indian allotments to 80 acres of agricultural land, 160 acres of grazing land, or 40 acres of irrigable land. It also authorized allotments, under certain conditions, to Indians residing in national forests; authorized allottees holding trust patents to lease the land for periods not exceeding five years subject to rules and regulations prescribed by the Secretary of the Interior; and authorized the sale of timber on allotments held under a trust patent with consent of the Secretary of the Interior.

1910. Act of June 25 (36 Stat. 855) extended to Indian reservations the penalties provided by the act of February 24, 1897, for failing to extinguish fires built in or near any forest, timber, or other inflammable material upon the public domain.

1911. Weeks Act of March 1 (36 Stat. 961): (1) authorized the enactment of interstate compacts for the conservation of forests and the water supply; (2) appropriated \$200,000 to enable the Secretary of Agriculture to cooperate with any state which had provided by law for a system of forest-fire protection; and (3) appropriated \$11,000,000 for the acquisition by the government of lands located on the headwaters of navigable streams. It also created a National Forest Reservation Commission to pass upon lands approved for purchase and to fix the price at which purchases shall be made, and provided for the protection and administration of acquired lands.

1911. Act of March 4 (36 Stat. 1235) authorized the head of the department having jurisdiction over public lands, national forests, and reservations of the United States to grant rights of way for transmission, telephone, and telegraph lines for a period not exceeding fifty years.

1911. Supreme Court on May 1 and 3 (220 U. S. 506, 523) held that Congress has the constitutional right (1) to reserve portions of the public domain as national forests; (2) to delegate to the Secretary of Agriculture administrative authority to make rules and regulations for their occupancy and use; and (3) to prescribe penalties for the violation of such regulations.

1912. Act of March 28 (37 Stat. 77) authorized the Commissioner of the General Land Office, on application of adjoining owners, to sell at public auction at not less than \$1.25 per acre tracts containing not more than 160 acres of public land which is mountainous or too rough for cultivation, whether isolated or not.

1912. Act of June 6 (37 Stat. 123) reduced to three years the length of residence necessary to obtain patent under the Homestead Act and set up certain minimum cultivation requirements. Commutation was allowed after fourteen months of actual residence.

1912. Agricultural Appropriations Act of August 10 (37 Stat. 269): (1) directed the Secretary of Agriculture to select, classify, and segregate all lands that may be opened to settlement and entry under the homestead laws applicable to national forests; (2) authorized and directed the Secretary to sell timber at actual cost to homestead settlers and farmers for their domestic use; and (3) made 10 per cent of the gross receipts from national forests available for expenditure by the Secretary of Agriculture for the construction of roads and trails within national forests. The latter provision was made permanent by the act of March 4, 1913 (37 Stat. 828).

1913. Act of March 4 (37 Stat. 828) authorized the National Forest Reservation Commission to acquire lands subject to rights of way, easements, and reservations which the Secretary of Agriculture believes will not interfere with the use of the lands so encumbered.

1913. Act of September 30 (38 Stat. 113) authorized the President to prescribe the methods of opening to entry public lands thereafter excluded from national forests or released from withdrawals.

1914. Agricultural Appropriations Act of June 30 (38 Stat. 415) increased from 5 to 25 per cent the payment to states of the gross receipts from lands acquired under the Weeks Act of March 1, 1911.

1915. Agricultural Appropriations Act of March 4 (38 Stat. 1086) authorized the Secretary of Agriculture to grant permits for summer homes, hotels, stores, or other structures needed for recreation or public convenience in national forests in tracts of not more than 5 acres and for periods of not more than thirty years.

1915. Supreme Court on February 23 in the case of *United States v. Midwest Oil Company* (236 U. S. 459) affirmed the right of the President to withdraw public lands from entry without specific authorization from Congress.

1916. Act of May 18 (39 Stat. 123) provided for the establishment of the Red Lake Indian Forest of about 110,000 acres in the Red Lake Indian Reservation and for its administration by the Secretary of the Interior "in accordance with the principles of scientific forestry."

1916. Act of July 11 (39 Stat. 355) appropriated \$1,000,000 a year for ten years for the construction of roads and trails within or partly within national forests where necessary for the use and development of their resources. Additional appropriations of \$3,000,000 a year for three years were made for the fiscal years 1919, 1920, and 1921.

1916. Agricultural Appropriations Act of August 11 (39 Stat. 446) authorized the Secretary of Agriculture (1) to require purchasers of national-forest stumpage to make deposits adequate to cover the cost of disposing of brush and other debris resulting from cutting operations, and (2) to permit the prospecting, development, and utilization of the mineral resources of lands acquired under the Weeks Act of 1911. It also authorized the President to establish refuges for the protection of game animals, birds, or fish on any lands purchased under the Weeks Act.

1916. Convention of August 16 between the United States and Great Britain (39 Stat. 1702) provided for the protection by the United States and Canada of migratory game birds, migratory insectivorous birds, and certain other migratory nongame birds.

1916. Act of August 25 (39 Stat. 535) created the National Park Service in the department of the Interior, defined the purposes for which national parks may be established, and authorized the Secretary of the Interior to make rules and regulations for their proper use and management. Grazing was authorized when in the judgment of the Secretary it will not be detrimental to the primary purpose for which the park, monument, or other reservation was established.

1918. Migratory Bird Treaty Act of July 3 (40 Stat. 755) provided for effectuation of the convention of August 16, 1916, with Great Britain and authorized the Secretary of Agriculture, subject to the approval of the President, to promulgate regulations for the protection of the migratory birds covered by the convention.

1919. Act of June 30 (41 Stat. 3) provided that thereafter no public lands should be withdrawn as an Indian reservation except by act of Congress.

1920. Act of February 25 (41 Stat. 437) provided for the leasing of deposits of coal, phosphate, sodium, oil, oil shale, or gas, and authorized the

Secretary of the Interior to reserve the right to sell, lease, or otherwise dispose of the surface of lands embraced in such leases if not necessary for the use of the lessee. The act applied to national forests created from the public domain, but not to national forests acquired under the Weeks Act of 1911, to national parks, to game refuges, or to military or naval reservations.

1920. Supreme Court on April 19 in the case of *Missouri v. Holland* (252 U. S. 416) confirmed the constitutionality of the Migratory Bird Treaty Act of 1918.

1920. Act of June 10 (41 Stat. 1063) created the Federal Power Commission and authorized it to issue leases for a period not exceeding fifty years "for the development and improvement of navigation, and for the development, transmission, and utilization of power, across, along, from or in any part of the navigable waters of the United States, or upon any part of the public lands and reservations of the United States (including the Territories), or for the purpose of utilizing the surplus water or water power from any Government dam."

1921. Act of March 3 (41 Stat. 1353) prohibited the issuance of permits, licenses, or leases for the development of water in existing national parks or national monuments without specific authority of Congress, and repealed that part of the Federal Power Act of 1920 authorizing the issuance of such licenses. Act of August 26, 1935 (49 Stat. 838), by redefining "reservations" so as to exclude national parks and national monuments, made congressional approval necessary for parks and monuments created after as well as before 1921.

1921. Federal Highway Act of November 9 (42 Stat. 212) started the practice of appropriating funds specifically for the construction of "forest-development roads" and "forest highways" in national forests. Cooperation with states was authorized but not required.

1922. General Exchange Act of March 20 (42 Stat. 465) authorized the Secretary of Agriculture to exchange surveyed, nonmineral land or timber in national forests established from the public domain for privately owned or state land of equal value within national forests in the same state.

1922. Agricultural Appropriations Act of May 11 (42 Stat. 507) made the first appropriation (\$10,000) for the improvement of public campgrounds in national forests, with special reference to protection of the public health and prevention of forest fires.

1922. Act of September 20 (42 Stat. 857) authorized the Secretary of the Interior to protect timber on lands under his jurisdiction from fire, insects, and disease, either directly or in cooperation with other departments, states, or private owners.

1924. Act of June 7 (43 Stat. 650) provided for the establishment of the Upper Mississippi River Wildlife and Fish Refuge and authorized an appropriation of \$1,500,000 for the acquisition of land within the refuge.

1924. Clarke-McNary Act of June 7 (43 Stat. 653) authorized appropriations to enable the Secretary of Agriculture to cooperate in forest-fire control with states meeting prescribed standards, in the growing and distribution of planting stock to farmers, and in promoting the efficient management of farm woodlots and shelterbelts; authorized the purchase of lands anywhere on the watersheds of navigable streams and for timber production as well as streamflow protection; authorized the acceptance of gifts of land to be added to the national forests; authorized the Secretary of Agriculture to report to Congress such unreserved public timberlands as in his judgment should be added to the national forests; and authorized the creation of military and naval reserves as national forests, without interference with their use for military and naval purposes.

1925. Treaty of February 24 with

Great Britain (44 Stat. 2108) provided for regulating the level of the Lake of the Woods by an International Lake of the Woods Control Board. Any disagreement between the two members of the Board must be referred to the International Joint Commission, whose decision shall be final.

1925. Act of February 28 (43 Stat. 1090) amended the General Exchange Act of 1922 to permit either party to an exchange to make reservations of timber, minerals, or easements, the values of which shall be considered in determining the values of the exchanged lands, provided that such reservations shall be subject to the tax laws of the states concerned.

1925. Act of March 3 (43 Stat. 1132) authorized the acceptance of contributions to constitute a special fund for the reforestation, administration, or protection of lands within or near national forests. It also authorized the Secretary to accept donations of land for any national-forest purpose.

1925. Act of March 3 (43 Stat. 1215) authorized the exchange of land or timber for land within the exterior boundaries of national forests acquired under the Weeks Act of 1911 or the Clarke-McNary Act of 1924, on an equal-value basis.

1926. Air Commerce Act of May 20 (44 Stat. 568) authorized the President to provide by Executive Order for the setting apart and protection of airspace reservations for the national defense and for other governmental purposes, and made it unlawful to navigate any aircraft within any airspace reservation otherwise than in conformity with the Executive Order regulating such reservation.

1926. Act of June 14 (44 Stat. 741) authorized the Secretary of the Interior to make available to states, counties, or municipalities, by exchange, sale, or lease, unreserved, non-mineral public lands classified by him as chiefly valuable for recreational purposes.

1926. Act of June 23 (44 Stat. 763)

established within the White Earth Indian Reservation a Wild Rice Lake Reserve of approximately 4,500 acres for the exclusive use and benefit of the Chippewa Indians of Minnesota. All unallotted and undisposed lands within the area were permanently withdrawn, and the Secretary of the Interior was authorized to acquire other lands by purchase or condemnation.

1927. Act of January 25 (44 Stat. 1026) granted to the states all school sections that are mineral in character, subject to certain restrictions and reservations.

1927. Act of March 3 (44 Stat. 1347) provided that thereafter changes in the boundaries of Indian reservations created by Executive Order, proclamation, or otherwise shall not be made except by act of Congress, provided that this shall not apply to temporary withdrawals by the Secretary of the Interior.

1928. Act of March 9 (45 Stat. 253) increased to 320 acres the size of isolated tracts that might be sold at public auction at not less than \$1.25 per acre, but left at 160 acres the size of mountainous tracts that might be sold on application of adjoining owners.

1928. McNary-Woodruff Act of April 30 (45 Stat. 468) authorized appropriations of \$2,000,000 in 1928-1929, of \$3,000,000 in 1929-1930, and of \$3,000,000 in 1930-1931 for the purchase of land under the Weeks Act of 1911 and the Clarke-McNary Act of 1924. Not more than 1,000,000 acres of land was to be purchased in any one state primarily for timber production.

1928. McSweeney-McNary of May 22 (45 Stat. 699) authorized a comprehensive ten-year program of research in all phases of forestry and range management, including a timber survey.

1929. Migratory Bird Conservation Act (Norbeck-Andresen Act) of February 18 (45 Stat. 1222) established the Migratory Bird Conservation Commission and authorized a continuing pro-

gram for the acquisition of migratory-bird reservations, subject to the consent of the state concerned.

1930. Knutson-Vandenberg Act of June 9 (46 Stat. 527) authorized appropriation of not to exceed \$400,000 a year by the fiscal year 1934 for reforestation activities on the national forests, and provided that additional charges could be made in timber sales to provide a special fund for reforestation or silvicultural improvement of the cutover area included in the timber sale.

1930. Act of June 19 (46 Stat. 785) confirmed the title of the State of Minnesota and its grantees and assigns to all lands covered by certain listed patents, provided Minnesota relinquishes all claims to swamplands under the act of March 12, 1860, which have heretofore been conveyed by patent in trust or in fee to any Indian, whether of full blood or of mixed blood.

1930. Shipstead-Nolan Act of July 10 (46 Stat. 1020) withdrew from entry all public land in a large area in northeastern Minnesota; required the Forest Service to conserve for recreational use the natural beauty of all lakes and streams within this area (chiefly in the Superior National Forest); and provided that there should be no further alteration of the natural water level of any lake or stream within the area without further act of Congress.

1933. Act of February 15 (47 Stat. 808) reduced the area to be considered as Indian-treaty territory under Article 7 of the treaty of February 22, 1855, with the Mississippi bands of Chippewa Indians, as described in great detail in the act.

1933. Emergency Conservation Work Act of March 31 (48 Stat. 22) appropriated funds for the dual purpose of relieving unemployment and promoting conservation of natural resources. In addition to other activities, it authorized use of the funds for forest research and for acquisition of land by purchase, donation, condemnation, or otherwise.

1933. Agricultural Adjustment Act of May 12 (48 Stat. 31) provided in detail for relieving the acute economic emergency in agriculture.

1933. Federal Emergency Relief Act of May 12 (48 Stat. 55), and subsequent amendments, provided funds for the relief of unemployment, which were used in part for forestry and other conservation activities, including land purchase.

1933. President Roosevelt by Executive Order 6166 of June 10 placed all national monuments, the National Capital parks, and national military parks under the administration of the Department of the Interior.

1933. National Industrial Recovery Act of June 16 (48 Stat. 195) attempted to promote economic recovery by a wide variety of measures, including codes of fair competition, an extensive public-works program, and subsistence homesteads. The Code of Fair Competition for the Lumber and Timber Products Industries, approved August 21, led to the adoption (March 23, 1934) of a Forest Conservation Code which required the various divisions of the industry to formulate and enforce rules of forest practice.

1934. Act of March 10 (48 Stat. 400) authorized the President, upon the recommendation of the Secretary of Agriculture and the Secretary of Commerce and with the approval of the legislature of the state concerned, to establish fish and game sanctuaries or refuges in national forests.

1934. Coordination Act of March 10 (48 Stat. 401) authorized the Secretary of Agriculture and the Secretary of Commerce to cooperate with federal, state, and other agencies in developing a nationwide program of wildlife conservation and rehabilitation; to study the effect of water pollution on wildlife and to recommend remedial measures; and to prepare plans for the maintenance of an adequate supply of wildlife on public lands, Indian reservations, and allotted Indian lands. It also provided for use for wildlife pur-

poses of water impounded by the Bureau of Reclamation or otherwise, and for facilitating the migration of fish in connection with the construction of any future dam by the federal government or under federal permit.

1934. Migratory Bird Hunting Stamp Act of March 16 (48 Stat. 451) required takers of migratory waterfowl to buy a \$1.00 federal hunting stamp, good for one year, and made the proceeds available for the acquisition and management of migratory waterfowl refuges and for the conduct of research.

1934. Act of June 11 (48 Stat. 927) provided that thereafter the land ceded to the United States by the treaty of September 30, 1854, and the treaty of February 22, 1855, should no longer be considered as "Indian country."

1934. Indian Reorganization Act (Wheeler-Howard Act) of June 18 (48 Stat. 984) prohibited future allotments to Indians in severalty; extended existing periods of trust until otherwise directed by Congress; authorized the Secretary of the Interior to restore to tribal ownership the remaining surplus lands of any Indian reservation opened or authorized to be opened for any form of disposal by the President; authorized the Secretary of the Interior to make voluntary exchanges of lands of equal value, and to acquire lands in or out of any reservation, including trust allotments, for the purpose of providing land for the Indians, such lands to be held in trust by the United States; and contained detailed provisions concerning the health and education of the Indians. The act also directed the Secretary of the Interior to make rules and regulations for managing Indian forestry units on the principle of sustained yield; for restricting the number of livestock grazed on Indian range units to their estimated carrying capacity; and for protecting the range from deterioration, preventing soil erosion, and assuring full utilization of the range. The act further gave Indians the right to organize for their common welfare, subject to the approval of the

Secretary of the Interior, who may issue a charter of incorporation. The act does not apply to any reservation where a majority of the adult Indians vote against its application.

1934. Executive Order of June 30 created the Quetico-Superior Committee to advise with federal and other agencies concerning the wilderness sanctuary in the Rainy Lake and Pigeon River watersheds.

1935. Soil Conservation Act of April 27 (49 Stat. 163) declared it to be the policy of Congress to provide permanently for the control and prevention of soil erosion, delegated all activities relating to soil erosion to the Secretary of Agriculture, and established the Soil Conservation Service in that department.

1935. Supreme Court on May 27 (295 U. S. 495) invalidated the National Industrial Recovery Act of 1933 because it involved an unconstitutional delegation of legislative power, exceeded the power of Congress to regulate interstate commerce, and invaded the powers reserved exclusively to the states. The Court's action automatically nullified the lumber-industry code and the rules of forest practice adopted thereunder.

1935. Act of June 4 (49 Stat. 321) reimbursed the Chippewa Indians of Minnesota for lands within the reservations established by the treaties of March 11, 1863, May 7, 1864, and March 19, 1867, which had later been patented to the state as swamplands without compensation to the Indians.

1935. Act of June 15 (49 Stat. 378) authorized the Secretary of Agriculture to accept any lands chiefly valuable for wildlife refuges in exchange for lands of equal value, or for timber, hay, or other products on lands acquired by him for like purposes; provided for payment to the counties concerned of 25 per cent of the net receipts from wildlife refuges for the benefit of public schools and roads; and authorized the President to spend

relief funds for the purchase of wildlife refuges.

1935. Act of July 24 (49 Stat. 496) amended the act of June 23, 1926, by authorizing the Secretary of the Interior to establish not more than three additional wild-rice reserves in the White Earth Indian Reservation, and to acquire land within these reserves by gift, purchase, or condemnation.

1935. Act of August 21 (49 Stat. 666) authorized the Secretary of the Interior to acquire and administer historic sites and buildings, and established an Advisory Board on National Parks, Historic Sites, Buildings, and Monuments.

1935. Fulmer Act of August 29 (49 Stat. 963) authorized an appropriation of \$5,000,000 for the purchase by the federal government of lands to be administered as state forests under plans of management satisfactory to the Secretary of Agriculture. The act has never been implemented.

1936. Supreme Court on January 6 (237 U. S. 1) declared unconstitutional the agricultural-adjustments parts of the Agricultural Adjustment Act of 1933, dealing chiefly with acreage allotments, benefit payments, and processing taxes, on the ground that they invaded powers reserved to the states.

1936. Convention of February 7 between the United States and Mexico (50 Stat. 1311) provided for the protection by the United States and Mexico of migratory game and non-game birds and for the control of transportation between the two countries of migratory birds and game animals, dead or alive.

1936. Soil Conservation and Domestic Allotment Act of February 29 (49 Stat. 1148) authorized the Secretary of Agriculture to make benefit payments to farmers as a soil-conservation measure.

1936. Act of June 20 (49 Stat. 1555) provided for effectuation of the convention of February 7, 1936, with Mexico, and authorized the Secretary

of Agriculture, subject to approval by the President, to promulgate regulations to that end.

1936. Flood Control Act of June 22 (49 Stat. 1570) recognized that flood control on navigable waters or their tributaries is a proper activity of the federal government, in cooperation with the states and their political subdivisions; divided responsibility in the field between the War Department and the Department of Agriculture; authorized interstate flood control compacts; and authorized a long list of projects for prosecution by the Army Corps of Engineers.

1936. Act of June 23 (49 Stat. 1894) authorized and directed the National Park Service to make a comprehensive study, other than on lands under the jurisdiction of the Department of Agriculture, of the public park, parkway, and recreational-area programs of the United States and of the several states and political subdivisions thereof, and to cooperate with the states and their political subdivisions in planning such areas. It also authorized the states to enter into interstate compacts for the establishment and development of park, parkway, and recreational areas, subject to the approval of the state legislatures and of Congress.

1937. Cooperative Farm Forestry Act (Norris-Doxey Act) of May 18 (50 Stat. 188) authorized an annual appropriation of \$2,500,000 for the promotion of farm forestry in cooperation with the states.

1937. Act of June 28 (50 Stat. 319) established the Civilian Conservation Corps as the official successor to the Emergency Conservation Work, and provided in detail for its administration.

1937. Bankhead-Jones Farm Tenant Act of July 22 (50 Stat. 522) provided for loans to farm tenants, for rehabilitation loans, and for the retirement and rehabilitation of submarginal agricultural lands. It also authorized the Secretary of Agriculture to coop-

erate with federal, state, and other public agencies in developing plans for a program of land conservation and land utilization.

1937. Act of August 25 (50 Stat. 804) established the Pipestone National Monument in southwestern Minnesota.

1937. Wildlife Restoration Act (Pittman-Robertson Act) of September 2 (50 Stat. 917) provided for federal financial and technical cooperation with the states up to 75 per cent of the total cost of approved wildlife restoration projects. Each cooperating state must pass legislation for the conservation of wildlife, including a prohibition against the diversion of license fees paid by hunters for any other purpose than the administration of its fish and game department.

1938. Small Tract Act of June 1 (52 Stat. 609) authorized the Secretary of the Interior to sell or lease not more than 5 acres of certain public lands, outside of Alaska, which he may classify as chiefly valuable as home, cabin, health, convalescent, recreational, or business sites, subject to a reservation to the United States of all oil, gas, and other mineral deposits. Regulations under the act provide for leases of not more than five years.

1938. Concurrent Resolution of June 14 (52 Stat. 1452) created a Joint Congressional Committee on Forestry to study the present and prospective situation with respect to the forest land of the United States, and to make a report thereon with recommendations.

1938. Civil Aeronautics Act of June 23 (52 Stat. 973) declared that the United States possesses and exercises complete and exclusive national sovereignty in the airspace above the United States, including the airspace above all inland waters and the airspace above those portions of the adjacent marginal high seas, bays, and lakes over which by international law, treaty, or convention the United States exercises national jurisdiction.

1939. Reorganization Plan No. II of May 9 (53 Stat. 1431) transferred the Bureau of Fisheries from the Department of Commerce, and the Bureau of Biological Survey from the Department of Agriculture, to the Department of the Interior, and made the Secretary of the Interior chairman of the Migratory Bird Conservation Commission.

1940. Reorganization Plan No. III of April 2 (54 Stat. 1231) consolidated the Bureau of Fisheries and the Bureau of Biological Survey into the Fish and Wildlife Service.

1940. Lea Act of April 26 (54 Stat. 168) provided for federal cooperation in the protection of forest lands from white pine blister rust, irrespective of ownership, provided that on state or private lands federal expenditures must be at least matched by state or local authorities or by individuals or organizations.

1940. Act of May 28 (54 Stat. 224) authorized the President, on the basis of a cooperative agreement between the Secretary of Agriculture and the municipality concerned, to withdraw national-forest lands from which a municipality obtains its water supply from all forms of location, entry, or appropriation. The Secretary of Agriculture may prescribe such rules and regulations as he considers necessary for adequate protection of the watershed.

1940. Transportation Act of September 18 (54 Stat. 898), with certain specified exceptions, authorized the payment of full commercial tariff rates for the transportation of persons or property for the United States to grant land-grant railroads which within one year would waive all further claims under their grants. Lands already patented, certified for patent, or sold to innocent purchasers were not affected.

1940. Convention of October 12 between the United States and other American republics (56 Stat. 1354) committed the signatory powers to

take appropriate steps for the protection of nature and the preservation of wildlife in their respective countries.

1940. Supreme Court on December 16 in the case of United States v. Appalachian Electric Power Company (311 U. S. 377) held that a waterway constitutes "navigable water of the United States" if it can be made available for navigation by the construction of improvements, whether such improvements have actually been made or even authorized; and that a navigable water of the United States does not lose its character because its use for interstate commerce has lessened or ceased. The Court also stated that navigation is only a part of interstate commerce and that "flood protection, watershed development, recovery of the cost of improvements through utilization of power are likewise parts of commerce control.

1941. Supreme Court on June 2 in the case of Oklahoma v. Atkinson Company (313 U. S. 508) stated that "it is clear that Congress may exercise its control over the non-navigable stretches of a river in order to preserve or promote commerce on the navigable portions," and added that "the power of flood control extends to the tributaries of navigable streams."

1941. Act of November 15 (55 Stat. 763) extended to all lands owned by, leased by, or under the jurisdiction of the United States, including Indian lands and lands in process of acquisition, the penalties (somewhat modified) for setting and for failing to extinguish fires in or near any timber, underbrush, grass, or other inflammable material.

1942. Executive Order of April 12 delegated to the Secretary of the Interior authority to make withdrawals and restorations of public lands.

1942. Act of June 6 (56 Stat. 326) authorized the Secretary of the Interior to convey or lease to the states or to the political subdivisions thereof, without consideration, any or all of the recreational development projects

and lands transferred to him by Executive Order 7496 of November 14, 1936, when they are adequately prepared to maintain such areas for park, recreational, and conservation purposes. The act also authorized the Secretary to transfer such recreational demonstrational areas to other federal agencies.

1942-1943. Acts of July 2, 1942 (56 Stat. 562) and July 12, 1943 (57 Stat. 494) provided for the liquidation of the Civilian Conservation Corps as quickly as possible but not later than June 30, 1944.

1942. Act of December 7 (56 Stat. 1042) authorized the exchange of lands between the United States and the State of Minnesota on an equal value basis. It led to the purchase of Nerstrand Woods in Rice County and its transfer to the state in exchange for a much larger area of state land in the Superior National Forest.

1944. Sustained Yield Forest Management Act of March 29 (58 Stat. 132) authorized the Secretary of Agriculture and/or the Secretary of the Interior to establish cooperative sustained-yield units consisting only of federal forest land and private forest land, or federal sustained-yield units consisting only of federal forest land, when in their judgment the maintenance of stable communities is primarily dependent upon federal stumpage and when such maintenance cannot be secured through usual timber-sale procedures. Provision was made for the sale of federal stumpage to cooperating landowners or to responsible purchasers within communities dependent on federal stumpage, without competitive bidding at prices not less than the appraised value of the timber.

1944. Act of May 5 (58 Stat. 216) amended the Clarke-McNary Act of 1924 by authorizing annual increases in the appropriation for cooperative forest-fire protection with the states up to a maximum of \$9,000,000 for the fiscal year 1948 and thereafter.

1944. Department of Agriculture

Organic Act of September 21 (58 Stat. 734), among many other administrative provisions, authorized the Secretary of Agriculture to pay rewards for information leading to arrest and conviction for violating laws and regulations relating to fires in or near national forests or for the unlawful taking of, or injury to, government property.

1944. Flood-Control Act of December 22 (58 Stat. 887) provided that thereafter federal investigations and improvements of rivers and waterways for flood control and allied purposes should be under the jurisdiction of the War Department, and that federal investigations of watersheds and measures for runoff and water-flow retardation and soil-erosion prevention on watersheds should be under the jurisdiction of the Secretary of Agriculture.

1946. Reorganization Plan No. 3 of May 16 (60 Stat. 1097) transferred to the Secretary of the Interior, subject to the approval of the Secretary of Agriculture and to such conditions as he may specify, the jurisdiction formerly exercised by the latter over the development of mineral resources on lands acquired under the Weeks Act of 1911, as amended, and various emergency appropriations. It also consolidated the General Land Office and the Grazing Service to form the Bureau of Land Management in the Department of the Interior.

1946. Act of July 24 (60 Stat. 656) amended the Wildlife Restoration Act of 1937 by limiting the apportionment of funds to any one state to not less than ½ per cent and not more than 5 per cent of the total amount apportioned, and by permitting the use of not more than 25 per cent of the federal apportionment for maintenance of completed wildlife-restoration projects.

1946. Joint Resolution of August 8 (60 Stat. 930) directed the Fish and Wildlife Service to prosecute investigations, experiments, and a vigorous program for the elimination of the

sea lamprey from the Great Lakes.

1946. Act of August 13 (60 Stat. 1049) created an Indian Claims Commission to pass upon claims against the United States of any tribe, band, or other identifiable group of American Indians. All claims must be submitted within five years from the date of the act. Decisions of the Commission are final, subject to appeal to the Court of Appeals, which is also given jurisdiction over claims arising subsequent to the date of approval of the act.

1946. Act of August 14 (60 Stat. 1080) strengthened the Coordination Act of 1934 by authorizing the Secretary of the Interior, through the Fish and Wildlife Service, to provide assistance to, and to cooperate with, federal, state, and public or private agencies and organizations in the development, protection, and rehabilitation of the wildlife resources of the United States.

1947. Forest Pest Control Act of June 25 (61 Stat. 177) declared it to be the policy of the government to protect all forest lands irrespective of ownership from destructive forest insect pests and diseases. It authorized the Secretary of Agriculture, either directly or in cooperation with other federal agencies, state and local agencies, and private concerns and individuals, to conduct surveys to detect infestations and to determine and carry out control measures against incipient, potential, or emergency outbreaks.

1947. Act of July 30 (61 Stat. 630) increased the size of isolated tracts that might be offered for sale to 1,520 acres and of mountainous tracts to 760 acres.

1947. Materials Disposal Act of July 31 (61 Stat. 681) authorized the Secretary of the Interior to dispose of sand, stone, gravel, clay, timber, and other materials on public lands exclusive of national forests, national parks, national monuments, and Indian reservations.

1947. Mineral Leasing Act for Acquired Lands of August 7 (61 Stat.

913) authorized the Secretary of the Interior to lease acquired lands containing deposits of coal, phosphate, oil, oil shale, gas, sodium, potassium, or sulfur under the provisions of the mineral leasing laws, with the consent of the head of the department having jurisdiction over the lands and subject to such conditions as he may prescribe.

1948. Act of February 10 (62 Stat. 19) provided that whoever, without lawful authority or permission, shall go upon any national-forest land while it is closed to the public by a regulation of the Secretary of Agriculture, made pursuant to law, shall be subject to fine and imprisonment.

1948. Act of June 22 (62 Stat. 568), commonly known as Public Law 733, authorized appropriations not to exceed a total of \$500,000 for the purpose of acquiring certain specified lands in Cook, Lake, and St. Louis counties in the Superior National Forest, the development or exploitation of which might impair the unique qualities and natural features of the remaining wilderness canoe country. It also directed payment to the counties, in lieu of the usual 25 per cent of gross receipts, of 0.75 per cent of the fair appraised value of the land in the area covered by the act, as determined by the Secretary of Agriculture at ten-year intervals.

1948. Water Pollution Control Act (Taft-Barkley Act) of June 30 (62 Stat. 1155) provided for technical and financial cooperation by the federal government with states and municipalities in the formulation and execution of programs for the abatement of stream pollution.

1949. Act of August 12 (63 Stat. 599) increased to \$2.00 the price of the hunting stamp required for the taking of migratory waterfowl under the act of March 16, 1934.

1949. Anderson-Mansfield Reforestation and Revegetation Act of October 11 (63 Stat. 762) authorized a schedule of appropriations for the reforestation and revegetation of the

forest and range lands of the national forests.

1949. Act of October 26 (63 Stat. 909) amended the Clarke-McNary Act of 1924 by authorizing increases in the appropriations for cooperation with the states in forest-fire protection and in the production of planting stock, and for cooperation with the land-grant colleges or other suitable state agencies in educating farmers in the management of forest lands and in the harvesting, utilizing, and marketing the products thereof.

1949. Supreme Court on November 7 (338 U. S. 863) upheld the decision of the Washington Supreme Court affirming the constitutionality of the Washington law of 1945 providing for the control of cutting on privately owned forest lands.

1949. Executive Order 10092 of December 17 reserved the airspace below an altitude of 4,000 feet over the Roadless Areas in the Superior National Forest as an airspace reservation, in which no aircraft shall navigate except in conformity with the provisions of the order.

1950. Granger-Thye Act of April 24 (64 Stat. 82) contained many important administrative provisions "to facilitate and simplify the work of the Forest Service."

1950. Fish Restoration and Management Act (Dingell-Johnson Act) of August 9 (64 Stat. 430) provided for federal financial and technical cooperation with the states in fish restoration and management projects up to 75 per cent of the total cost of the projects.

1950. Cooperative Forest Management Act of August 25 (64 Stat. 473) authorized an annual appropriation of \$2,500,000 to enable the Secretary of Agriculture to cooperate with state foresters in providing technical service to private forest landowners and operators and to processors of primary forest products. The Cooperative Farm Forestry Act of 1937 was repealed.

1952. Act of July 17 (66 Stat. 755)

extended the financial authorizations approved by the Water Pollution Control Act of 1948 to June 30, 1956.

1953. Act of July 10 (67 Stat. 145) established a Commission on Intergovernmental Relations (Kestnbaum Commission), one of the committees of which dealt with federal-state relations in the field of natural resources.

1953. Agricultural Appropriations Act of July 28 (67 Stat. 205) appropriated \$5,000,000 to conduct studies and to carry out preventive measures for the protection of watersheds under the provisions of the Soil Conservation Act of 1935.

1953. Act of August 15 (67 Stat. 588) transferred to the State of Minnesota both civil and criminal jurisdiction over Indians in all Indian country in the state except the Red Lake Reservation.

1953. Act of August 15 (67 Stat. 613) amended the Federal Reserve Act to authorize national banks to make loans secured by first liens up to 40 per cent of their appraised value "upon forest tracts which are properly managed in all respects."

1953. Supreme Court on October 12 in the case of *Perko et al. v. United States* (346 U. S. 832) refused to review the decision of the U. S. Court of Appeals, 8th Circuit (294 Fed. Reporter 2d 446) upholding the injunction issued by the U. S. District Court for the District of Minnesota (108 Fed. Supplement 315) permanently restraining Perko and others, their agents and employees, from entering the airspace reservation over the Superior National Forest established by the Executive Order of December 17, 1949.

1954. Act of June 17 (68 Stat. 250) provided for the orderly termination of federal supervision over the members and property (including forest and range lands) of the Menominee Indian Tribe in Wisconsin.

1954. Watershed Protection and Flood Prevention Act of August 4 (68 Stat. 666), commonly known as Public Law 566, authorized the Secretary of

Agriculture, under specified conditions, to cooperate with states and local organizations for the purpose of preventing erosion, floodwater, and sediment damages, and of furthering the conservation, development, utilization, and disposal of water.

1954. Internal Revenue Code of August 16 (68A Stat. 67) authorized farmers in computing income taxes to deduct expenditures for soil or water conservation or for the prevention of erosion, up to 25 per cent of gross income.

1954. Act of September 3 (68 Stat. 1146) authorized the issuance by federal agencies of permits, leases, or easements to states or local governmental bodies, for periods not to exceed thirty years, on lands within their respective jurisdictions. The act applied to "public lands and national forests, except national parks and monuments."

1955. Act of July 23 (69 Stat. 367) broadened the Materials Disposal Act of 1947, and specified that on unpatented claims hereafter located the United States shall have the right to dispose of the timber and other non-mineral surface resources, provided that such disposal shall not endanger or materially interfere with mining operations. It also established a procedure whereby the right to the use of the timber and other surface resources on existing, inactive mining claims may be canceled or waived.

1955. Act of August 1 (69 Stat. 434) repealed the Timber and Stone Act of June 3, 1878, as amended.

1956. Soil Bank Act of May 28 (70 Stat. 188) provided for the establishment of acreage reserves and conservation reserves on farm land regularly used for the production of crops. On the conservation reserves the owner agrees to maintain for the contact period a protective vegetative cover (including but not limited to grass and trees), water-storage facilities, or other soil-, water-, wildlife-, or forest-conserving facilities on a specifically designated area. The United States

bears such part of the cost of establishing the soil-conserving improvements as the Secretary of Agriculture determines and also makes an annual payment to the owner for the term of the contract. The act further authorized the Secretary of Agriculture to assist the states by advice, technical assistance, and financial contributions not in excess of the amount expended by the state in carrying out a plan for forest tree planting and reforestation submitted by the state and approved by the Secretary.

1956. Act of June 22 (70 Stat. 326) commonly known as Public Law 607, expanded the area in the "wilderness canoe country" in the Superior National Forest covered by the act of June 22, 1948, increased the authorization for the purchase of land within the expanded area to \$2,500,000, and provided for payment to the counties of 0.75 per cent of the appraised value of federal lands within the expanded area.

1956. Act of July 9 (70 Stat. 498) amended the Water Pollution Control Act of 1948 and extended the period during which it remained in effect until June 30, 1959.

1956. Act of August 7 (70 Stat. 1088) made several amendments to the Watershed Protection and Flood Prevention Act of 1954. These set the maximum area that can be included in a small watershed project at 250,000 acres and the maximum federal contribution at \$250,000.

1956. Act of August 8 (70 Stat. 1119) established a comprehensive national policy with respect to fish and wildlife, created the position of Assistant Secretary for Fish and Wildlife in the Department of the Interior, and established a United States Fish and Wildlife Service composed of the Bureau of Commercial Fisheries and the Bureau of Sport Fisheries and Wildlife.

1958. Act of February 2 (72 Stat. 27) provided that withdrawals, reservations, or restrictions of more than 5,000 acres of public lands for military pur-

poses shall not become effective until approved by Congress.

1958. Act of May 1 (72 Stat. 99) specified in detail the conditions under which public lands and Indian lands subject to liens under the Volstead Act of May 20, 1908, may be patented to the state.

1958. Act of June 28 (72 Stat. 238) created the Outdoor Recreation Resources Review Commission, with instructions to identify the problems in the field of outdoor recreation which the nation will face in 1976 and 2000 and to recommend solutions.

1958. Act of September 2 (72 Stat. 1571) made all lands within national forests acquired for national-forest purposes or transferred to the Forest Service for administration, except lands reserved from the public domain or acquired by exchange of such lands, subject to the provisions of the Weeks Act of 1911, as amended, and to all laws, rules, and regulations applicable to national forests acquired thereunder. The act applied chiefly to "land utilization projects."

1958. Act of September 2 (72 Stat. 1751) authorized the establishment of the Grand Portage National Monument in northeastern Minnesota.

STATE LEGISLATION

1849. Joint Resolution of October 11 (No. 2, p. 161) requested the government, in order to insure the security and tranquillity of the white settlements, to remove the Chippewa Indians from all lands within the territory to which the Indian title had been extinguished. Numerous resolutions dealing with the handling of the Indians were passed by subsequent territorial legislatures.

1851. Memorial of February 19 (No. 1, p. 41) asked Congress for a grant of 100,000 acres to endow a university.

1851. Act of February 25 (Ch. 3, p. 9) incorporated the University of Minnesota at the Falls of St. Anthony, and provided that the proceeds of all land which might thereafter be granted

by the United States to the territory for the support of a university should constitute a perpetual fund, to be called the "University Fund," the interest of which should be appropriated for the support of a university.

1852. Act of March 6 (Ch. 33, p. 52) provided penalties for willfully cutting timber on any lands set apart for the use either of common schools or the University of Minnesota.

1853. Five railroad companies were incorporated. Altogether 27 railroad companies were incorporated during the territorial period.

1857. Extra Session, Act of May 22 (Ch. 1, p. 3) provided for the disposal of the land granted to the territory in trust by Congress on March 3, 1857, to aid in the construction of four railroads.

1857. State Constitution, ratified by vote of the people on October 13, accepted all of the provisions in the Enabling Act of February 26, 1857, including agreement never to interfere with the primary disposal of the soil within its borders, to impose no tax on lands belonging to the United States, and not to tax non-resident proprietors higher than residents. It provided that the proceeds of such lands as might be granted to the state by the United States for the use of schools should remain a perpetual school fund to be forever reserved "inviolable and undiminished," and provided further for their disposal at public sale, with the lands of greatest value being sold first. Another provision specified that the credit of the state should never be given or loaned in aid of any individual, association, or corporation.

1858. Memorial of January 22 (No. 8) protested against further sales of public lands in Minnesota at that time because preemptors were unable to pay for them. A similar memorial (No. 24) was adopted on August 12.

1858. Joint resolution of February 25 (No. 1, p. 335) urged the government to open to settlement the surplus and unoccupied land within the Sioux

and Winnebago Indian reservations.

1858. Act of March 10 (Ch. 21, p. 42) provided for the establishment of the Agricultural College of the State of Minnesota at Glencoe.

1858. Act of March 20 (Ch. 17, p. 32) provided penalties for trespass on lands granted to the state by Congress for the support of schools or universities, or for internal improvements.

1858. Act of August 3 (Ch. 73, p. 182) provided for the regulation and encouragement of land drainage and for the incorporation of drainage companies.

1858. Constitutional amendment of April 15 (Art. IX, Sec. 10) authorized the state to issue Minnesota State Railroad Bonds to an amount not exceeding \$5,000,000 as a "loan of public credit" to aid in the construction of railroads for which federal land grants had been received in trust by the state.

1859. Legislation dealing with the duties and responsibilities of county officers included provisions for the handling of tax delinquency. The subject received much attention in subsequent legislation, but not until 1899 was there a real attempt to control tax delinquency through the threat of effective forfeiture of title to the state.

1860. Two constitutional amendments ratified by the people on November 6 provided (1) that no law making provisions by tax or otherwise for payment of the railroad bonds issued under authority of the constitutional amendment of April 15, 1858, should take effect until adopted by a majority of the electors voting thereon, and (2) that that amendment be expunged from the constitution.

1861. Memorial of March 6 (No. 15, p. 361) requested Congress to donate to the state the lands reserved under the act of February 19, 1851, for the benefit of a territorial university.

1861. Act of March 8 (Ch. 12, p. 74) provided penalties for trespass on state lands and repealed previous legislation on the subject.

1861. Act of March 9 (Ch. 14, p. 79) established a State Board of Commissioners of School lands consisting of the Governor, the Attorney General, and the Superintendent of Public Instruction and gave the board general care and supervision of the school lands, which were to be sold at not less than \$7.00 per acre.

1861. Act of March 11 (Ch. 13, p. 75) established a State Board of Commissioners of Public lands consisting of the Governor, the Attorney General, and the Superintendent of Public Instruction to handle the surveying of state lands.

1861. Act of March 12 (Ch. 65, p. 199) donated the state's swamplands in McLeod County to the Agricultural College of the State of Minnesota.

1862. Act of March 10 (Ch. 62, p. 121) repealed chapters 13 and 14 of the Laws of 1861 creating the state boards of commissioners of public lands and of school lands. In their place, it established a State Land Office and made the State Auditor the Commissioner of the Land Office ex officio. The Commissioner was given general charge and supervision of state lands, with authority to sell, lease, and dispose of them as directed by law. No lands were to be sold for less than \$5.00 per acre or for less than their appraised value, and in quantities not larger than 160 acres. The penalty for trespass on state lands was increased to treble damages. The act adopted the surveys on file in the Surveyor General's office as the basis for the acceptance of swamplands.

1862. Memorial of September 29 (No. 6, p. 94) requested the government to investigate the management of Indian affairs in the state because of the possibility that incompetence, mismanagement, and corruption might have been in part responsible for the Sioux outbreak.

1863. Memorial of February 28 (No. 11, p. 287) stated that there are numerous "reservations" nominally occupied by bands of Indians who roam

at pleasure throughout the state and whose hostility to the white citizens is manifested at every opportunity, and asked the government to establish a military post at some strategic location.

1863. Joint Resolution of March 5 (No. 11, p. 268) placed the University lands and all buildings and grounds belonging to the University under the Commissioner of the State Land Office (Auditor General).

1863. Act of March 5 (Ch. 12, p. 46) repeated the proviso that no school land should be sold for less than \$5.00 per acre or for less than the appraised value; authorized the Commissioner of the State Land Office to sell pine stumpage at not less than a minimum price to be fixed by the Surveyor General of Logs and Lumber; and provided that land classified as "pine land" was not to be offered for sale until the timber had been sold.

1865. Act of February 13 (Ch. 5, p. 15) appropriated 100,000 acres of swampland for the benefit of an insane asylum, 100,000 acres for a deaf and dumb institute at Faribault, 100,000 acres for a state prison, and 75,000 acres each for not more than three normal schools (Winona, Mankato, and St. Cloud).

1865. Chapter 7 granted to the Agricultural College at Glencoe established by the act of March 10, 1858, all of the swampland in McLeod County.

1865. Act of February 24 (Ch. 9, p. 32) provided for the appraisal and sale of agricultural college lands as provided for school lands in the act of March 10, 1862.

1866. Act of March 1 (Ch. 27, p. 65) provided for the drainage of swamp, bog, meadow, and other lands, through court proceedings where necessary.

1866. Act of March 2 (Ch. 36, p. 80) provided for the organization of mining districts to conduct mining operations "upon the public lands of the United States for which patents have not been issued."

1867. Act of February 26 (Ch. 28,

p. 52) provided in detail for the regulation of mining upon the public lands of the United States.

1867. Act of March 6 (Ch. 24, p. 40) created a Board of Immigration consisting of the Governor, the Secretary of State, and a third member appointed by the Governor "to do everything which may enhance and encourage immigration to the state."

1868. Chapter 1 reorganized the University of Minnesota, established an agricultural college therein, and repealed the legislation establishing an agricultural college at Glencoe.

1868. Act of March 5 (Ch. 55, p. 93) authorized the sale of any University lands and agricultural college lands in the same manner as school and other state lands on request of the Board of Regents to the Commissioner of the State Land Office. All proceeds were to go into a permanent University Fund placed at the disposal of the Regents.

1869. Act of February 24 (Ch. 49, p. 62) accepted a federal grant of 200,000 acres (15 Stat. 169) to aid in constructing a lock and dam at Mecker's Island to facilitate navigation of the Mississippi River between the Falls of St. Anthony and the mouth of the Minnesota River.

1870. Act of March 4 (Ch. 13, p. 18) authorized the sale by the State Land Commissioner of the 500,000 acres of internal-improvement land to the highest bidder at not less than \$8.70 per acre in lots of not more than 160 acres. The act was ratified by the people but did not go into effect because its requirements with respect to the exchange of railroad bonds for land were not met by the bondholders.

1870. Act of March 4 (Ch. 24, p. 40) created a new Board of Immigration consisting of the Governor, the Secretary of State, and two named members (John C. Devereux and J. T. Williams).

1871. Act of March 6 (Ch. 36, p. 88) authorized the United States to acquire land for use in river and har-

bor improvements or for the erection and maintenance of lighthouses.

1872. Act of March 1 (Ch. 30, p. 86) established the Geological and Natural History Survey in the University of Minnesota with an annual appropriation of \$1,000.

1872. Constitutional amendment of November 5 (Art. IV, Sec. 32 [b]) provided that all land donated to the state by the act of September 4, 1841 (5 Stat. 453) should be appraised and sold in the same manner, by the same officers, and at the same minimum price as school lands. The proceeds were to constitute an Internal Improvement Land Fund which "shall not be appropriated for any purpose whatever" without the approval of a majority of the electors voting at a general annual election.

1873. Act of March 10 (Ch. 133, p. 254) gave the University of Minnesota control of the state's salt-spring lands, authorized their sale in such manner and amounts as the University might see fit, and directed that the proceeds be held in trust for the support of the Geological and Natural History Survey. It also directed the Regents of the University to make a full investigation of the salt springs and of the peat deposits of the state, with a view to determining their value and promoting their development.

1874. Act of March 9 (Ch. 37, p. 163) authorized the United States to acquire lands for use in river and harbor improvements and for the erection of lighthouses. Jurisdiction over such lands was ceded to the United States, provided that the state might exercise concurrent jurisdiction in the execution of civil and criminal processes issued under authority of the state.

1875. Act of March 9 (Ch. 95, p. 125) provided for the selection of the swamplands reserved for certain state institutions by the act of February 13, 1865 (Ch. 5).

1877. Act of March 3 (Ch. 56, p. 86) provided (1) that the Commissioner of the Land Office might sell

the timber on the pine lands belonging to the state at not less than its appraised value when, and only when, it is liable to waste, and (2) that no pine lands should be sold until the timber thereon had been estimated, appraised, and sold according to the provisions of the act.

1881. Extra Session. Act of November 4 (Ch. 2, p. 18) provided in detail for the issuance of Minnesota State Railroad Adjustment Bonds for the retirement of outstanding Minnesota State Railroad Bonds.

1881. Extra Session. Act of November 19 (Ch. 71, p. 71) devoted the proceeds from sales of internal improvement lands to liquidation of the Minnesota State Railroad Adjustment Bonds. The act, which was made subject to referendum, was ratified at the general election in 1882.

1881. Constitutional amendment of November 8 (Art. VIII, Sec. 2, Par. 4) provided that swamplands should be appraised and sold in the same manner, by the same officers, and at the same minimum price less one-third as provided by law for the appraisal and sale of school lands. The principal of all funds derived from the sale of swamplands was forever to be preserved inviolate and undiminished. One-half of the proceeds from this principal was to be appropriated to the common school fund of the state, and the other half to the educational and charitable institutions of the state in the relative ratio of the cost to support said institutions.

1885. Act of March 5 (Ch. 265, p. 328) provided penalties for the willful burning of, or the cutting of timber in trespass on, pine lands owned by the state.

1885. Act of March 7 (Ch. 269, p. 331) directed the Commissioner of the State Land Office to ascertain the extent and value of state lands chiefly valuable for pine timber, to protect such lands from fire and trespass, and to sell such timber only when necessary to protect the state from loss, and then

only with the approval of the Governor, State Treasurer, and Commissioner of the Land Office.

1885. Act of March 9 (Ch. 102, p. 94) provided for the sale of pine lands, on the same terms as other state lands, after the pine timber thereon had been sold and removed.

1885. Act of March 9 (Ch. 129, p. 117) authorized the Governor to appoint five commissioners, to be known as "The Commissioners of the State Park at Minnehaha Falls," to acquire not more than 200 acres to be reserved for a state park, for horticultural and mechanical state exhibit grounds, and for such public buildings and institutions as may be found necessary and expedient.

1887. Act of March 8 (Ch. 98, p. 161) authorized any board of county commissioners to organize the county into a drainage district, and also, upon petition of a specified number of landowners, to organize sub-drainage districts, operations of which could be financed by bonds issued by the county.

1889. Act of April 24 (Ch. 22, p. 68) provided in detail for "the sale and lease of mineral and other lands belonging to the state," and authorized the Commissioner of the State Land Office to reserve to the state all mineral rights in state lands in St. Louis, Lake, and Cook counties.

1891. Act of April 20 (Ch. 31, p. 111) created a funding commission consisting of the Governor, Auditor, and Treasurer with authority to redeem and refund the Minnesota State Railroad Adjustment Bonds.

1891. Act of April 20 (Ch. 56, p. 137) established Itasca State Park and prohibited hunting and the destruction of trees therein.

1891. Act of April 21 (Ch. 132, p. 225) authorized the leasing of the public building lands in Kandiyohi County and the distribution of the receipts to the township, the county, and the state school fund.

1895. Act of April 25 (Ch. 106, p. 233) vested supervision of Itasca State

Park in the State Auditor, acting as State Land Commissioner, and provided for the appointment of a park commissioner.

1895. Act of April 18 (Ch. 196, p. 472) gave the State Auditor the title of Forest Commissioner, authorized him to appoint a chief fire warden at a salary of \$1,200 a year, and provided that "his orders shall be supreme in all matters relating to the preservation of the forests of this state and to the prevention and suppression of forest and prairie fires." Supervisors of towns, mayors of cities, and presidents of village councils were made fire wardens. County expenditures for fire control were limited to \$500 a year and state expenditures to \$5,000 a year.

1895. Act of April 22 (Ch. 163, p. 349) provided in great detail for the sale of state land and timber, including penalties for trespass. Tamarac and cedar suitable for posts, telegraph poles, or railroad ties were added to pine as species that might be sold. The act established a Board of Timber Commissioners consisting of the Governor, State Auditor, and Treasurer, with the State Land Commissioner as secretary. The board was authorized to pass on all proposed timber sales and to approve such sales when the timber in question was liable to waste, and not otherwise. All timber sold was to be "cut clear, acre by acre, without waste or damage to other timber." Sales must be at not less than the appraised value. No permit could cover more than two logging seasons, with a possible extension of one year on unanimous approval by the Board of Timber Commissioners.

1897. Act of April 23 (Ch. 329, p. 597) appropriated \$3,000 to be expended by the Minnesota Forestry Association (organized in 1876) for certain specified purposes.

1898. Constitutional amendment of November 8 (Art. IX, Sec. 16) created a State Road and Bridge Fund, to include all moneys accruing from the income derived from investments in

the Internal Improvement Land Fund.

1899. Act of April 13 (Ch. 214, p. 229) designated as forest reserves all tracts set apart from any state lands by the legislature for forestry purposes, or granted to the state by any person or by the government of the United States. It created the Minnesota State Forestry Board of nine members for the development and management of such reserves, and constituted the respective town boards of supervisors and county commissioners town and county forestry boards. Donors of forest land to the state were permitted to designate any public educational institution as the beneficiary to receive two-thirds of the income from such land.

1899. Act of April 20 (Ch. 322, p. 410) constituted the first real attempt to control tax delinquency through the threat of effective forfeiture of title to the state of lands upon which taxes were three or more years delinquent.

1901. Act of April 2 (Ch. 104, p. 108) provided that "the State of Minnesota does hereby reserve for its own use and benefit, all the iron, coal, copper, gold, or other valuable mineral which may be contained, found or discovered upon any [of its lands]."

1901. Act of April 9 (Ch. 177, p. 230) directed the State Auditor to sell the 10 sections of public building lands in Kandiyohi County, under the same terms as school lands. "for the purpose of completing the public buildings, or for the erection of others, at the seat of government."

1901. Act of April 3 (Ch. 335, p. 551) provided for quieting the title to certain tax-delinquent lands certified by the county boards as unfit for agriculture and for setting them aside as forest reserves. No action resulted.

1903. Act of April 3 (Ch. 118, p. 158) extended the consent given the United States in 1871 (Ch. 36) and 1874 (Ch. 37) to acquire land for river and harbor improvements and for the erection of lighthouses so as to include certain other specified uses and also "for any other public purpose."

1903. Act of April 8 (Ch. 134, p. 192) authorized the State Forestry Board to purchase lands for forestry purposes at not more than \$2.50 per acre but made no appropriation.

1905. Act of March 30 (Ch. 83, p. 99) accepted the 20,000 acres (Burnside State Forest) granted to the state by the federal government in 1904 (33 Stat. 536).

1905. Act of April 13 (Ch. 162, p. 196) provided for the appraisal of all school lands by the Land Commissioner and for their sale at not less than their appraised value or less than \$5.00 per acre. Where land is mainly valuable for agriculture and contains only small quantities of pine, tamarac, or other timber, the Land Commissioner may either sell the timber separately or sell the land as agricultural land with a down payment for the value of the timber in addition to the 15 per cent first payment required on the land.

1905. Act of April 15 (Ch. 201, p. 256) authorized the State Land Commissioner to promote the sale of state lands, by advertising and otherwise, with a view to "securing a desirable class of settlers to purchase and to locate on state lands."

1905. Act of April 17 (Ch. 204, p. 258) made numerous amendments in existing legislation relating to trespass on state lands and the sale of timber on pine lands. No change was made in the requirement of clear cutting, in the length of sales (two logging seasons), or in the length of permissible extensions (one year).

1905. Act of April 19 (Ch. 310, p. 494) raised the salary of the chief fire warden to \$1,500 a year.

1907. Act of February 13 (Ch. 14, p. 14) repealed existing legislation authorizing the leasing of state mineral lands.

1907. Act of April 4 (Ch. 90, p. 104) made Itasca State Park a forest reserve and authorized the State Forestry Board to care for it in the same manner as other forest reserves, pro-

vided that the board "shall preserve intact the primeval pine forest . . . and shall cut no part thereof except weak, diseased or insect infested trees, or dead and down timber." The University of Minnesota was authorized to use for demonstration any land in the park or elsewhere assigned to it by the State Forestry Board for this purpose. The park was made a game preserve.

1907. Act of April 12 (Ch. 171, p. 192) made the Governor an ex officio member of the State Forestry Board.

1907. Act of April 23 (Ch. 366, p. 508) set the minimum price of all state lands, including swamplands, at \$5.00 per acre plus the cost of drainage, except salt spring lands over which the University had control.

1907. Act of April 24 (Ch. 385, p. 542) recited that the act of February 13, 1865 (Ch. 5) had merely reserved specified areas of land for the benefit of certain institutions; that the constitutional amendment of Art. VIII, Sec. 2 in 1881 had nullified that act; that subsequent to 1881 certain selections had nevertheless been made; and that both principal and interest resulting from sale of these selections were carried on the state books as "The State Institution Fund." The act transferred this entire fund to the Swampland Fund and the Swampland Interest Fund.

1909. Act of March 6 (Ch. 49, p. 48) declared that all iron ores and other minerals lying beneath the waters of meandered public lakes and rivers are the property of the state.

1909. Act of March 25 (Ch. 109, p. 100) added the words "and all water powers" to the act of April 2, 1901 (Ch. 104) reserving all minerals in state lands.

1909. Act of March 27 (Ch. 118, p. 108) provided that "where state lands have been benefited by and assessments paid for drainage, such drainage improvements shall be duly considered by the state land examiner in making appraisals."

1909. Act of March 31 (Ch. 131, p. 137) provided for purchase by the state, with donated funds, of not less than 2,200 acres in the Fond du Lac Indian Reservation in Carlton County, to be managed by the University of Minnesota as a practice ground, demonstration forest, and forest experiment station.

1909. Act of April 13 (Ch. 182, p. 198), citing the injury caused by the Hinckley fire of 1894 and the Chisholm fire of 1908, replaced and strengthened most of the existing fire-control legislation.

1909. Act of April 23 (Ch. 469, p. 565) provided that all lands owned by the State of Minnesota or any department thereof which is benefited by a public ditch or drain shall be liable to an assessment in proportion to the benefit received the same as taxable land.

1911. Act of April 12 (Ch. 125, p. 151) amended existing legislation relating to fire control and to the State Forestry Board; directed the board to appoint a State Forester, "who shall be a trained forester;" and authorized the State Forester to order the disposal of slashings and debris resulting from cutting timber of any kind and for any purpose whenever in his judgment such slashings and debris constitute a fire hazard.

1913. Joint Resolution of March 11 (No. 4, p. 907) protested against the proposed transfer of national forests to state control on the grounds (1) that national interests are involved, and (2) "that the states are not prepared to take without the cooperation of the federal government as good care of such enormously valuable property as this property is now receiving from the United States forest service."

1913. Act of March 17 (Ch. 38, p. 49) provided that the county allocation of 25 per cent of the gross receipts from national forests should be divided equally among Cook, Lake, and St. Louis counties in the case of the Superior National Forest and assigned

entirely to Cass County in the case of the Minnesota National Forest. Half of the receipts by each county were to be used for public schools and half for public roads.

1913. Act of March 19 (Ch. 86, p. 73) changed the term "forest reserve" to "state forest."

1913. Act of April 2 (Ch. 159, p. 192) strengthened existing legislation relating to fire control, and extended to district rangers the authority to order disposal of slashings.

1913. Act of April 8 (Ch. 211, p. 269) authorized the creation of municipal forests to be selected and managed with the approval of the State Forester.

1913. Act of April 19 (Ch. 383, p. 532) made the State Forester a member of the Board of Timber Commissioners.

1913. Act of April 25 (Ch. 530, p. 768) provided that no permit to cut state timber should be extended except for good and sufficient reasons and by unanimous consent of the Board of Timber Commissioners, and that in no event should more than two extensions be granted for more than one year each.

1913. Act of April 25 (Ch. 531, p. 768) authorized the issuance of certificates of indebtedness up to \$250,000 for the purchase of land in Itasca State Park.

1914. Constitutional amendment of November 3 (Art. VIII, Sec. 7) provided that "such of the school and other public lands as are better adapted for the production of timber than for agriculture, may be set aside as state school forests, or other state forests, as the legislature may provide, and the legislature may provide for the management of the same on forestry principles. The net revenue therefrom shall be used for the purpose for which the lands were granted to the state."

1916. Constitutional amendment of November 7 (Art. VIII, Sec. 2, Par. 2) provided that "a revolving fund of not more than \$250,000 may be set apart

from the fund derived from the sale of school and swamp lands, to be used in constructing roads, ditches and fire breaks in, through and around unsold school and swamp lands and in clearing such lands, such fund to be replenished as long as needed from the enhanced value realized from the sale of such lands so benefited."

1917. Act of April 9 (Ch. 164, p. 244) appropriated a revolving fund of \$100,000 to be used by the State Auditor, with the approval of a State Land Improvement Board created by the act, for the improvement of school and swamp lands. Not more than 5 acres were to be cleared or more than \$300 spent in the improvement of any 40-acre tract. Improved lands were to be sold as other state lands, including the cost of improvements.

1917. Act of April 20 (Ch. 360, p. 514) withdrew from sale all state-owned or controlled water powers of 100 horse power or more and all state-owned lands unfit for agriculture but suitable for reforestation [sic] purposes. It further directed the State Auditor and the State Forester to determine the availability of state timber and water power for the manufacture of pulpwood in a pulp mill to be operated by the state.

1917. Act of April 20 (Ch. 488, p. 754) designated certain lands in St. Louis, Lake, and Cook counties to be managed by the State Forestry Board under the designation "Minnesota State Forests."

1919. Act of April 23 (Ch. 400, p. 427) authorized the Commissioner of Game and Fish, on petition of the local residents, to establish state game refuges on private land, including all public land within the boundaries thereof. Refuges (except, later, for waterfowl) must contain not less than 640 acres of contiguous land.

1919. Act of April 25 (Ch. 489, p. 642) amended the act of April 25, 1913 (Ch. 530) relating to the extension of timber sales by providing that "in no event shall more than one extension

of one year be granted where the original permit was for one year only, or more than two extensions of one year each be granted where the original permit was for more than one year."

1922. Constitutional amendment of November 7 (Art. IX, Sec. 1A) established the mining occupation tax and provided that it should be apportioned 50 per cent to the State General Revenue Fund, 40 per cent to the Permanent School Fund, and 10 per cent to the Permanent University Fund.

1923. Act of April 21 (Ch. 430, p. 641) withdrew from sale all state lands bordering or adjacent to meandered lakes and other public waters and the timber thereon, and reserved a strip 100 feet wide (reduced to 2 rods in 1927) for public travel along lake shores. The State Auditor, as State Land Commissioner, was charged with the management of all state parks, state public camp grounds, state monument sites, and state monuments.

1924. Constitutional amendment of November 4 (Art. XVII) provided that "the state and (or) any of its political subdivisions, if and whenever authorized by the legislature, may contract debts and pledge the public credit for and engage in any work reasonably tending to prevent or abate forest fires, including the compulsory clearing and improvement of wild lands (whether belonging to the public or privately owned)."

1925. Act of March 10 (Ch. 55, p. 56) modified the purposes for which the United States is authorized to acquire land within the state of Minnesota and omitted the words "for any other public purpose."

1925. Act of March 19 (Ch. 76, p. 71) consented to acquisition by the United States of such areas of land and water as it deemed necessary for establishment of the Upper Mississippi Wildlife and Fish Refuge. It also ceded to the United States for the purposes of the refuge all state land within the refuge subject to overflow and not suitable for agricultural purposes.

1925. Act of April 15 (Ch. 208, p. 239) was the first of the "bargain counter" laws easing the requirements for the redemption of tax-delinquent lands.

1925. Act of April 18 (Ch. 407, p. 558) revised, codified, and supplemented the forest laws of the state. Among many other provisions, it authorized the State Forestry Board to remove from state forests any lands found to be more suitable for the production of farm crops than for forestry purposes, and to include in state forests any state land more valuable for the production of timber than for agriculture.

1925. State Timber Act of April 20 (Ch. 276, p. 325) provided in detail for the sale of timber from state lands by the State Auditor with approval of the Board of Timber Commissioners or its successor (Executive Council).

1925. Reorganization Act of April 25 (Ch. 426, p. 756) created the Executive Council consisting of the Governor, Attorney General, State Auditor, State Treasurer, and Secretary of State, and among other responsibilities vested in it the powers and duties of the Board of Timber Commissioners and the Minnesota State Land Commission. It also created a Department of Conservation under the supervision and control of a commission consisting of the Commissioner of Forestry and Fire Prevention (chairman), the Commissioner of Game and Fish, and the Commissioner of Lands and Timber (State Auditor). The Commissioner of Forestry and Fire Prevention took over the powers and duties of the State Forester and the State Board of Forestry. The Department of Conservation was given all the powers and duties of the Minnesota Land and Lakes Attraction Board, the Land Improvement Board, the Minnesota State Board of Immigration, and the Office of the Commissioner of Immigration. It was specifically authorized to manage state parks, state public camp grounds, state monument sites, and

state lands withdrawn from sale as provided in the act. The Commissioner of Lands and Timber (State Auditor) retained control over the sale of state lands and timber, but was directed to withhold from sale such lands, timber, or water power sites as might be recommended by the Department of Conservation. The act continued the Department of Drainage and Waters with all of the powers and duties of the existing department.

1925. Act of April 9 (Ch. 170, p. 164) provided that when the owner of any land transferred to the United States, to the state, or any governmental subdivision of either, reserves any right to the timber or minerals, these interests shall continue to be assessed and taxed, and they may be sold for taxes in the same manner and with the same effect as other interests in real estate are sold for taxes.

1926. Constitutional amendment of November 2 (Art. XVIII, Secs. 1-2) authorized the enactment of laws to encourage and promote forestation and reforestation by fixing in advance a definite and limited annual tax on the land and a yield tax at the time of cutting.

1927. Act of April 5 (Ch. 119, p. 186) made a major effort to deal effectively with the large area of lands which were tax delinquent for 5 or more years. All lands becoming the property of the state under the act must be classified as agricultural or non-agricultural by the county board under the supervision of the State Auditor.

1927. Act of April 16 (Ch. 246, p. 355) designated as a state forest all state lands within the Minnesota National Forest as established by act of Congress.

1927. Act of April 16 (Ch. 248, p. 368) directed the Commissioner of Forestry and Fire Prevention to classify all state lands suitable for afforestation or reforestation, and to submit to the legislature a list of such lands with a view to the establishment of a fixed

and permanent policy or plan for the afforestation or reforestation of state-owned lands.

1927. Act of April 18 (Ch. 244, p. 347) created an interim Afforestation and Reforestation Commission to "make a thorough study and investigation in respect to afforestation and reforestation of lands, delinquent real estate taxes, and the finances of counties and taxing districts, in the forest areas of the state."

1927. Auxiliary Forest Act of April 18 (Ch. 247, p. 356) effectuated the constitutional amendment of November 2, 1926, by authorizing the establishment of auxiliary forests which would pay an annual land tax of 8 cents per dollar of assessed value, an "auxiliary forest fire fund" tax of 3 cents per acre, and a yield tax of 10 per cent of the stumpage value of the timber at time of cutting. Applications must be approved by the county board and the Commissioner of Forestry and Fire Prevention. Contracts, which may run for 50 years and are renewable for another 50 years, give the Commissioner extensive powers over the management of the forest.

1929. Act of April 12 (Ch. 176, p. 172) authorized zoning in cities of the second, third, and fourth class, and in all villages.

1929. Act of April 19 (Ch. 245, p. 273) reduced the annual land tax on auxiliary forests to 5 cents per acre.

1929. Act of April 19 (Ch. 246, p. 274) provided a procedure for the exchange of state-owned lands in the Superior and Chippewa national forests for lands of the United States of the same general character and of substantially the same value, with authority to pay such differences in value as necessary to effect an equitable exchange.

1929. Act of April 19 (Ch. 247, p. 275) authorized the Department of Conservation, in cooperation with the University of Minnesota, to make a land economic survey of all lands in the state, beginning in "the so-called for-

est area of northern and northeastern Minnesota."

1929. Act of April 24 (Ch. 332, p. 430) provided for assumption by the state of responsibility for payment of both principal and interest on outstanding drainage district bonds in specified portions of Beltrami, Koochiching, and Lake of the Woods counties. Within this area it established the Red Lake Game Preserve and gave the state absolute title, free from any trust in favor of taxing districts, to all lands outside of cities and villages which had been bid in for the state at the tax-delinquent sale held in 1928 and not redeemed or assigned to a purchaser. The preserve was placed under the management of the Department of Conservation, which was required to classify all tax-forfeited lands with reference to their suitability for agriculture, forestry, and game production. Sale was authorized of lands more valuable for agriculture or forestry than for game production.

1929. Act of April 24 (Ch. 332, p. 430) established a game and fish fund consisting of fees and licenses of any kind, and appropriated all moneys in the fund for the activities of the office of the Commissioner of Game and Fish, for the acquisition of any property or right which the Commissioner is authorized by law to acquire, and for the prosecution of any project which he is authorized to undertake.

1929. Act of April 27 (Ch. 415, p. 595) made a further attempt to give the state an unbreakable title to tax-forfeited lands. It also contained a "bargain counter" feature, which did not, however, apply to the Red Lake Game Preserve.

1931. Act of February 26 (Ch. 32, p. 31) authorized the exchange of lands within the Red Lake Game Preserve acquired by the state through tax forfeiture for privately owned lands within the preserve, and fixed the procedure to be followed.

1931. Act of April 9 (Ch. 124, p.

1935. Act of April 29 (Ch. 372, p. 684) established thirteen state forests and added to three others.

1935. Act of April 29 (Ch. 386, p. 710) provided in detail for the administration and sale of tax-forfeited lands. It also required county boards to classify tax-forfeited lands as conservation and non-conservation lands. Conservation lands may be sold only with the approval of the Commissioner of Conservation. Non-conservation lands may be sold without such approval, but the value of the timber thereon must be approved by the Commissioner. There may be attached to the sale of any parcel of tax-forfeited land conditions limiting its use and/or limiting the public expenditures that shall be made for the benefit of such parcel, and/or otherwise safeguarding against the sale and occupancy of such parcels unduly burdening the public treasury. The act also authorized county boards to appoint land commissioners to assist county auditors in the sale, rental, and management of tax-forfeited lands and in other administrative activities connected with such lands.

1935. Act of April 29 (Ch. 387, p. 715) was the last of the "bargain counter" laws. It essentially postponed application of the act of April 24, 1935 (Ch. 278) until July 1, 1936.

1935, Extra Session. Act of January 24, 1936 (Ch. 72, p. 90) was the first of a series of "confession of judgment" laws, under which the delinquent taxpayer agreed to accept the county auditor's determination of the taxes due on a specified parcel of land and to pay them on the installment plan. From 1935 to 1945 this series of laws was the most widely used form of delinquent tax legislation available to delinquent taxpayers who wished to redeem their property.

1935, Extra Session. Act of January 24, 1936 (Ch. 75, p. 94) made certain changes in the boundaries of the state forests established by the act of April 21, 1933 (Ch. 419).

1937. Act of April 21 (Ch. 310, p. 421) created a Department of Conservation to be administered by a Commissioner of Conservation appointed by the Governor with the consent of the Senate, with all the powers and duties formerly exercised by the Conservation Commission. The department included the divisions of Forestry, Drainage and Waters, Game and Fish, Lands and Minerals, and Parks. Timber sales were to be made only after appraisal by the Division of Forestry and approval by the Commissioner, and land sales only after appraisal by the Division of Lands and Minerals and approval by the Commissioner. The Commissioner was directed to classify all state lands and to determine which should be used for forestry purposes and which for agricultural or other purposes.

1937. Act of April 21 (Ch. 326, p. 450) definitely forfeited to the state absolute title to tax-delinquent trust-fund lands forfeiting to the state under the act of April 29, 1935 (Ch. 386) as amended by the act of January 27, 1936 (Ch. 105). It eliminated any and all claims by the county and its subdivisions to any income received by the state from the resale of tax-forfeited trust-fund lands.

1937. Act of April 24 (Ch. 391, p. 564) created a legislative interim commission to study and report to the next legislature upon the classification and zoning of tax-forfeited lands into agricultural and non-agricultural areas, upon the payment of indebtedness against lands in state forests, game preserves, and conservation areas, and upon woodlot and shelterbelt problems in the agricultural sections of the state.

1937. Act of April 26 (Ch. 441, p. 660) authorized the organization of soil conservation districts and defined their powers and duties. It also created a State Soil Conservation Committee consisting of five ex officio members.

1937, Extra Session. Act of July 23 (Ch. 88, p. 155) repealed the act of

April 22, 1933 (Ch. 407) and enacted a new "repurchase" law. Other "repurchase" laws, differing in detail but with the same basic intent of facilitating the redemption of tax-forfeited lands, were enacted in 1939, 1941, 1943, 1945, 1947, 1949, 1951, 1953, 1955, and 1957.

1938. Constitutional amendment of November 8 (Art. VIII, Sec. 8) provided that "any of the public lands of the state, including lands held in trust for any purpose, may, with the unanimous approval of a commission consisting of the governor, the attorney general, and the state auditor, be exchanged for lands of the United States and/or privately owned lands in such manner as the legislature may provide, and the lands so acquired shall be subject to the trust, if any, to which the lands exchanged therefor were subject, and the state shall reserve all mineral and water power rights in lands so transferred by the state."

1939. Act of April 20 (Ch. 328, p. 470) constituted a rewriting and major revision of the act of April 29, 1935 (Ch. 386), which provided for the disposal or retention by the county of tax-forfeited lands. It required the classification of such lands by the county board as conservation and non-conservation lands, subject to the approval of the town board. Conservation lands must be retained in public ownership. The Commissioner of Conservation is authorized to assist in the management of such lands, but the sale of timber and other products remains under the jurisdiction of the county board and the county auditor. The appraised value of the timber and the forestry practices to be followed in cutting it must be approved by the Commissioner of Conservation. Non-conservation land may be sold at not less than its appraised value; the timber must be appraised separately from the land and the appraisal approved by the Commissioner of Conservation. All monies received from the operation of the act are

placed in a Forfeited Tax Sale Fund, which is used to meet certain specified expenses and liabilities. The balance, if any, is apportioned 10 per cent to the state, 20 per cent to the township, village, or city, 30 per cent to the county, and 40 per cent to the school district.

1939. Zoning Act of April 20 (Ch. 340, p. 513) provided that, with the approval of the township concerned, any county in which there is now or may hereafter be located a state forest, federal forest, or state conservation area may regulate and restrict "the location and use of buildings and structures, and the use, condition of use, or occupancy of lands for residences, recreation, agriculture, water conservation, forestry, and other purposes." County boards may adopt zoning ordinances and regulations, including the regulation of nonconforming uses, which have the force of law. Permitted uses in a zoned area include hunting and fishing cabins on private lands; mines, quarries, and gravel pits; hydro dams, private dams, flowage areas, transmission lines, and substations; and the harvest of any wild crop.

1939. Act of April 21 (Ch. 352, p. 685) authorized the Director of the Division of Forestry, with the approval of the Commissioner of Conservation, to sell without formalities, for not less than the appraised value, small amounts of green standing, dead, down, dying, or insect-infested or diseased timber not exceeding \$250 in appraised value to any individual. Not more than one sale to any individual may be in effect at the same time. Sales may be made for one year only, but the Director may grant an extension for one year.

1939. Act of April 21 (Ch. 382, p. 723) created a Land Exchange Commission consisting of the Governor, the Attorney General, and the State Auditor, and otherwise effectuated the provisions of the constitutional amendment of November 8, 1938. It pro-

vided that the owner of land which he wishes to exchange with the state must file a proposal and furnish an abstract of title. "The exchange program under this act will be conducted in a manner that will not materially decrease but rather which will increase the state's total holdings of timber, and of water frontage desirable for public use and enjoyment."

1939. Act of April 22 (Ch. 418, p. 826) created an interim commission to report to the next legislature on forest fire protection, the management of state timber, afforestation and reforestation, establishment and maintenance of woodlots, windbreaks, and shelterbelts, tax remissions as an inducement for forest practice, state appropriations needed in carrying out a long-term comprehensive forestry program, and related matters pertaining to the development of an adequate state-wide program.

1941. Act of March 13 (Ch. 66, p. 86) empowered the United States, with the approval of the Governor, to acquire any lands which it may be necessary to take, overflow, or occupy in the prosecution of any public work authorized by Congress, provided that such approval shall not be required in the case of lands lying within the original boundaries of the Chippewa and Superior national forests and acquired by the United States for any purpose incident to the development and maintenance of those forests.

1941. Act of April 10 (Ch. 210, p. 416) authorized the creation of a county planning commission consisting of not less than four and not more than twenty members in any county containing a city of the first class (more than 50,000), which comprises more than 25 per cent of the area of the county.

1941. Act of April 14 (Ch. 215, p. 430) ratified leases demising to the state for a period of 50 years certain federal lands in Koochiching, Roseau, Lake of the Woods, and Beltrami counties, and established the Beltrami

Island Conservation Project and the Pine Island Conservation Project for the purpose of protecting, preserving, and managing the wildlife, forest, and water resources.

1941. Act of April 16 (Ch. 278, p. 516) dealt in some detail with the sale of tax-forfeited land and the timber thereon. It required approval by the Commissioner of Conservation of the county board's classification of tax-forfeited lands as agricultural before they can be offered for sale.

1941. Act of April 22 (Ch. 374, p. 684) dealt with the sale, redemption, and forfeiture of tax-delinquent lands. It also defined "state public lands" or "state lands" as meaning school, swamp, internal improvement, and other lands granted to the state by acts of Congress.

1941. Act of April 23 (Ch. 392, p. 731) contained detailed provisions for the making of land exchanges.

1941. Act of April 28 (Ch. 511, p. 955) exempted the Red Lake Game Preserve and the reforestation and flood-control lands from the provisions of the act of April 20, 1939 (Ch. 328) governing the sale of tax-forfeited lands. It permitted the deeding of such lands to governmental subdivisions for authorized public use. It also authorized county boards to offer non-agricultural lands within state forests to the state for management, and required the Commissioner of Conservation to accept such lands for the state and to incorporate them in the proper state forest or game refuge if examination shows them to be suitable for timber production, game refuges, etc. The title of all lands so accepted is held by the state free from any trust in favor of any taxing district. Proceeds from the sale of any products are paid into the General Revenue Fund.

1941. Act of April 28 (Ch. 544, p. 1077) established the office of Commissioner of Iron Range Resources and Rehabilitation, to be financed from the proceeds of the mining occupation tax.

When the Commissioner determines that distress and unemployment exist in any county, he may use such funds as are available in the development of the remaining resources of the county and in the vocational training and rehabilitation of the residents.

1943. Act of February 20 (Ch. 60, p. 68) continued the Department of Conservation under a Commissioner of Conservation as administrative and executive head, with all the powers and duties currently exercised by him. All inconsistent acts and parts of acts were repealed.

1943. Act of March 25 (Ch. 171, p. 242) re-established 29 state forests but did not include three of the original forests — Burntside, Bowstring, and Minnesota. All lands now owned or hereafter acquired by the state within the boundaries of the described areas, except tax-forfeited lands held in trust for the taxing districts, "are hereby withdrawn from sale and established as state forests, to be governed, operated, managed, and controlled on forestry principles." The act repeated the provisions of the act of April 28, 1941 (Ch. 511) authorizing the counties to turn over to the state for management non-agricultural, tax-forfeited lands within state forests, and authorized the same action with respect to such lands located outside of state forests where they comprise 50 per cent or more of the lands within any given area. The act also authorized payment to the counties of 50 per cent of the gross income from all non-trust lands within state forests, including those turned over to the state by the counties for management.

1943. Act of March 30 (Ch. 224, p. 311) authorized the Executive Council, on recommendation of the Commissioner of Conservation, to extend certain incompleting timber-sale permits through the current and succeeding calendar year, with interest at 6 per cent on the unpaid purchase price.

1943. Act of April 2 (Ch. 290, p. 401) prescribed the minimum size of

trees of various species which might be cut in logging operations on private land. It authorized the Director of the Division of Forestry to make such rules and regulations for the disposal of slash as in his judgment will afford adequate protection against fire hazards and leave the land in a productive state, and also where conditions warrant to grant special permits modifying the legal cutting restrictions. The act did not apply to the clearing of land for agricultural use or cottage sites or to the cutting of cordwood for firewood.

1943. Act of April 22 (Ch. 569, p. 801) amended the act of March 17, 1913 (Ch. 38) relating to the distribution to counties of 25 per cent of the gross receipts from the Superior and Chippewa national forests.

1943. Act of April 22 (Ch. 578, p. 850) created an interim commission to study the tax-delinquency and tax-forfeiture problem in its relation to forestry, the use of tax-forfeited lands for forest production, and the whole forestry problem as it relates to the people of Minnesota and the development of the resources of the state.

1943. Act of April 23 (Ch. 590, p. 839) created the Iron Range Resources and Rehabilitation Commission of seven members, and directed it to study the high labor costs of mining in the state and the policy and plans for the future development of low-grade ore, and to cooperate with and advise the Commissioner of Iron Range Resources and Rehabilitation in the development of the natural resources of the state.

1943. Act of April 24 (Ch. 627, p. 945) dealt in detail with the sale of tax-forfeited lands. It authorized the private sale of timber with an appraised valuation of not more than \$250, and provided that not more than one sale at a time may be made to a single individual. County boards were authorized to appoint necessary assistants to the land commissioner and to delegate authority to carry on all the activities necessary for the proper pro-

tection and administration of the county's tax-forfeited lands. The act also authorized the Commissioner of Conservation to delegate all of his powers and duties concerning approval of timber values, forestry practices, and parcels of land from which timber may be sold to competent field officers of the Department of Conservation.

1945. Act of March 26 (Ch. 149, p. 227) made several amendments in the act of April 2, 1943 (Ch. 290) regulating the cutting of timber on private lands.

1945. Act of March 26 (Ch. 151, p. 230) authorized the Commissioner of Conservation, upon recommendation of the county board, to release for sale any state land or tax-forfeited land within any state forest in an area not zoned against use for agriculture, if found by him to be more suitable for agricultural purposes than for forestry or other conservation purposes. Such action can be taken only in counties which have been zoned.

1945. Act of March 28 (Ch. 153, p. 234) established Nerstrand Woods State Park, consisting of certain lands in Rice County received from the United States pursuant to an agreement of exchange approved by the Land Exchange Commission. Suitable portions of the tract were made available for experimental and scientific purposes in cooperation with and subject to the approval of the University of Minnesota, but at least 100 acres of the best timbered and most scenic portions were reserved exclusively for public park purposes.

1945. Act of April 11 (Ch. 248, p. 378), dealing at great length with game and fish matters, designated all state parks as game refuges and authorized the Commissioner of Conservation to designate as game refuges any land or water areas where 50 per cent or more of the area is in public ownership. It also authorized the Commissioner of Conservation to acquire by gift, lease, purchase, or condemnation parking or camping areas of not more

than 5 acres adjacent to public waters to which the public theretofore had no access or where the access is inadequate and upon which the public has a right to hunt and fish, and such easements and rights of way as may be required to connect such areas with public highways. The authority did not extend to lakes which are not meandered or which contain less than 200 acres within the meander lines, and approval by the Executive Council was required for acquisitions costing more than \$1,000.

1945. Act of April 13 (Ch. 269, p. 448) made numerous amendments in existing legislation relating to auxiliary forests. Among other things, the minimum size of a commercial auxiliary forest was reduced to 35 acres and of a woodlot auxiliary forest to 5 acres; the annual land tax was increased from 5 cents to 6 cents per acre; the "auxiliary forest fire fund" tax of 3 cents per acre was abolished; and the procedure for handling cutting operations when the stumpage value of the timber to be cut is less than \$50 was simplified.

1945. Act of April 17 (Ch. 347, p. 645) authorized county boards to dedicate tax-forfeited lands which are more suitable for forest purposes than for any other purpose as memorial forests and to manage them on forestry principles. Income from such forests may be expended from the forfeited tax sale fund for the development and maintenance of the memorial forests.

1945. Act of April 19 (Ch. 395, p. 761) created the Water Pollution Control Commission.

1945. Act of April 21 (Ch. 468, p. 892) created the Minnesota Resources Commission of ten members appointed by the Governor and the Commissioner of Administration ex officio. The commission was directed to promote, encourage, and where desirable to undertake investigations into the nature, extent, location, distribution, value, protection, development, and utilization of the resources of the

state; and to coordinate so far as possible the studies made from time to time by national, state, and local agencies with respect to the resources of the state. The term "resources" was defined to include "not only the natural physical resources, but also the people themselves, their industries, employment, income, institutions, and public services of all kinds."

1945. Act of April 23 (Ch. 467, p. 742) contained new provisions concerning the taxation of merchantable timber in auxiliary forests.

1945. Act of April 23 (Ch. 551, p. 1071) amended the act of April 10, 1941 (Ch. 210) by authorizing the creation of planning commissions in counties having a city of the second class (20,000-50,000).

1945. Act of April 23 (Ch. 574, p. 1119) authorized county boards to "declare lands classified as conservation lands as primarily suitable for timber production and as lands which should be placed in private ownership for such purposes." If such action is approved by the Commissioner of Conservation, the lands so classified may be sold by the county board.

1947. Act of March 15 (Ch. 94, p. 118) authorized the sale of tree planting stock from state nurseries in lots of not less than 500 for use on private lands at such price as the Commissioner of Conservation shall determine to be fair and reasonable.

1947. Act of April 10 (Ch. 306, p. 489) established the Legislative Research Committee, the prime motive of which "shall be to gather information and provide material to be used by the legislature in its work while in session."

1947. Act of April 16 (Ch. 369, p. 583) authorized the Commissioner of Conservation to delegate his powers and duties concerning approval of appraised timber values, forestry practices, and parcels of tax-forfeited lands from which timber may be sold to competent field forestry officers of the department, or to waive such approval

at his discretion in such manner as he may prescribe.

1947. Act of April 19 (Ch. 422, p. 657) made special provision for the sale of non-conservation or agricultural land to veterans.

1947. Act of April 23 (Ch. 496, p. 824) authorized county boards to designate any tax-forfeited lands which have been classified as conservation lands as primarily suitable for either specific conservation purposes or for auxiliary forest lands. Such lands may then be sold, with the approval of the Commissioner of Conservation, on condition that the purchaser agree to place them in an auxiliary forest or use them for conservation purposes designated by the board.

1947. Act of April 26 (Ch. 553, p. 921) authorized county boards, before making their annual apportionment of the net amount of the forfeited tax sale fund, to set aside 10 per cent of that fund for use in developing timber resources of tax-forfeited lands other than those in memorial forests. Projects on which such money is spent must be approved by the Commissioner of Conservation.

1947. Act of April 26 (Ch. 580, p. 964) authorized the Commissioner of Conservation to furnish owners of not more than 1,000 acres of forest land advice on the management and protection of timber, selection and marking of timber to be cut, measurement of products, aid in marketing harvested products, and such other services as he deems necessary. He may charge for such services such sums as he deems fair and reasonable.

1947. Youth Conservation Act of April 28 (Ch. 595, p. 1027) established a Youth Conservation Commission to provide a program looking toward the prevention of delinquency and crime, and to provide for the rehabilitation of youths under 21 years of age who have been convicted of a criminal offense or found delinquent. Other state agencies are required to cooper-

ate with the Commission in the discharge of its functions.

1949. Act of April 12 (Ch. 401, p. 661) provided for the apportionment of the net proceeds from the sale or rental of tax-forfeited lands or the sale of products therefrom, for certain specified purposes. The county board was then authorized to set aside 10 per cent of the balance for timber development on either tax-forfeited land or memorial forest land. The final balance continued to be apportioned 10 per cent to the state, 20 per cent to the town, village, or city, 30 per cent to the county, and 40 per cent to the school district. In unorganized territory, the town's share is administered by the county board.

1949. Act of April 14 (Ch. 431, p. 273) authorized school districts and other public educational institutions to establish and maintain forests subject to the approval of the Commissioner of Conservation. Receipts may be used for the management of the forest or for any other purpose within the lawful powers of the agency.

1949. Act of April 19 (Ch. 498, p. 832), among other things, created the Consolidated Conservation Areas Fund and specified what items of income are to flow into the fund and what items of expense are to be paid out of it. The act also forbade the repair of that part of any drainage system within a game preserve without the approval of the Commissioner of Conservation. Many administrative details are covered.

1949. Act of April 22 (Ch. 575, p. 1010) authorized the Youth Conservation Commission to establish and operate conservation camps in which persons committed to the Commission may be placed. The camps may be established either independently or in cooperation with any other public agency or any governmental subdivision.

1951. Act of March 12 (Ch. 69, p. 94) authorized the Executive Council, for good and sufficient reason and

upon recommendation of the Commissioner of Conservation, to extend certain incompleting timber sale permits for such period as it deems advisable, with interest at 6 per cent on the unpaid purchase price.

1951. Act of April 13 (Ch. 365, p. 477) authorized the Iron Range Resources and Rehabilitation Commission, on request of the county board, to assist the county in carrying out projects aimed at the long-range development of its timber resources on tax-forfeited lands. This action was not to be construed as limiting the authority of the Commissioner of Iron Range Resources to give temporary assistance to any county in the development of its land-use program. The act also authorized the county board, when sufficient other funds are not available, to levy a tax of not more than one mill for the development of the timber resources on tax-forfeited lands. The levy must not exceed \$15,000 a year in any individual county.

1953. Act of February 18 (Ch. 29, p. 27) designated the Red Pine (*Pinus resinosa*), "more commonly known as Norway Pine," as the official tree of the State of Minnesota.

1953. Act of April 7 (Ch. 246, p. 300) contained new provisions concerning the taxation of merchantable timber in auxiliary forests, and increased the responsibility of the Commissioner of Conservation in determining when and what timber should be cut and its stumpage value. It authorized the county board to delegate its responsibilities in connection with auxiliary forests, either in whole or in part, to the county auditor or the land commissioner. It specifically exempted from the yield tax timber cut and used upon adjoining property of the auxiliary forest owner with respect to both farm woodlots and commercial auxiliary forests.

1953. Act of April 10 (Ch. 292, p. 346) established the Chengwatana State Forest.

1953. Act of April 22 (Ch. 643, p.

785) created an interim commission to study the water conservation, flood control, and drainage problems of the state, and to make recommendations thereon to the next legislature.

1953. Act of April 24 (Ch. 736, p. 956) created an interim tax commission to make a complete study of the present tax structure of the state and to recommend a new over-all tax structure for the state.

1953. Senate Concurrent Resolution No. 10 created an interim commission to study the forestry situation in all of its various aspects.

1955. Act of February 28 (Ch. 76, p. 123) authorized the Executive Council, for good and sufficient reason and upon recommendation of the Commissioner of Conservation, to extend certain incompleting timber-sale permits for not more than two years, with interest at 6 per cent on the unpaid purchase price.

1955. Act of March 18 (Ch. 183, p. 254) established the White Pine State Forest.

1955. Act of April 5 (Ch. 329, p. 485) authorized the Commissioner of Conservation or his authorized agent to sell at public auction any lot of timber with an appraised value of not more than \$800.

1955. Act of April 7 (Ch. 389, p. 587) authorized the sale of lands classified as non-agricultural (conservation) for inclusion in auxiliary forests.

1955. Act of April 18 (Ch. 486, p. 764) redistributed the income from tax-forfeited lands in Lake of the Woods County south of Lake of the Woods and Rainy River and outside of state forests by allocating 90 per cent to the county and 10 per cent to the state.

1955. Act of April 20 (Ch. 805, p. 928) provided for the repurchase of tax-forfeited land by the previous owner up to November 1, 1955.

1955. Act of April 23 (Ch. 751, p. 1169) provided that rural real estate used exclusively for the purpose of growing trees for timber, lumber,

wood, and wood products shall constitute class three "c," and shall be assessed at 20 per cent of the full and true value thereof.

1955. Act of April 23 (Ch. 771, p. 1186) made numerous amendments in the auxiliary forest law.

1955. Act of April 23 (Ch. 772, p. 1188) required the county board to give reasons for rejecting an application for establishment of an auxiliary forest; made auxiliary forests public hunting and fishing grounds open to the public except when closed by the Director of the Division of Forestry because of danger from fire or to life; increased the responsibilities of the Director of the Division of Forestry and of the County Land Commissioner in the selection of timber to be cut and in the determination of taxable stumpage values; and provided an alternative method of collecting the yield tax by which it may be paid in annual instalments prior to cutting.

1955. House Concurrent Resolution No. 10 continued the Interim Forestry Study Commission created in 1953.

1957. Act of February 21 (Ch. 37, p. 47) authorized the previous owner or his heirs to repurchase tax-forfeited land up to November 1, 1957, under certain conditions.

1957. Act of March 19 (Ch. 168, p. 193) laid down the procedure to be followed in quieting title to tax-forfeited lands by court action and registration of title.

1957. Act of April 10 (Ch. 346, p. 417) authorized the county auditor, in addition to activities already provided for, to permit the use of tax-forfeited lands for the depositing of mining wastes under such conditions, for such consideration, and for such period not exceeding 15 years as the county board may determine, subject to the approval of the Commissioner of Conservation.

1957. Minnesota Tree Growth Tax Law of April 24 (Ch. 639, p. 861) limited taxes on forest land listed under the act, with the approval of

the county board, to 30 per cent of the stumpage value of the estimated annual growth by eight specified productive forest types. Permanently non-productive land pays an annual tax of 5 cents per acre. Temporarily non-productive land pays an annual tax of 5 cents per acre during the period allowed in the contract for making it productive; if not made productive within that period, it pays a tax of 15 cents per acre until made productive. A limited amount of credit against the owner's tax bill is allowed for each acre of successful plantations. Not more than 10,000 acres in a single ownership can be listed in any one county.

1957. Act of April 25 (Ch. 644, p. 875) authorized the Commissioner of Conservation to acquire such wildlife lands, such as marsh or wetlands, as he finds desirable in the interest of water conservation relating to wildlife development programs, including lands in state ownership and tax-forfeited lands, and to develop them as wildlife, recreational, or hunting areas. Purchases and leases must be approved by the county board. Supervisors of soil conservation districts will act as counsellors to the county boards regarding the best utilization and capability of the land proposed for purchase, including the questions of drainage and flood control. The Commissioner in the purchase of such wetlands must recognize that when a majority of landowners, or owners of a majority of the land in a watershed, petition for a drainage outlet the state should not interfere with or unnecessarily delay such drainage proceedings when they are conducted according to the Minnesota Drainage Code. The act also imposed a surcharge of \$1.00 on small-game hunting licenses and established a Wildlife Acquisition Fund in which the surcharge is deposited. Assessments against the state must be paid from this fund.

1957. Act of April 26 (Ch. 675, p. 917) provided for payment to the

counties concerned, including Lake of the Woods County, of one half of the income received in the Consolidated Conservation Areas Fund, effective July 1, 1959. Each county's share is apportioned 30 per cent to the county development fund for the rehabilitation and development of that portion of the county within the conservation area; 40 per cent to the capital outlay fund of the school district from which derived; 20 per cent to the county revenue fund; and 10 per cent to the township road and bridge fund of the township from which derived. In unorganized townships, the latter share is added to the county revenue fund.

1957. Act of April 26 (Ch. 694, p. 934) increased the annual land tax on auxiliary forests from 6 cents to 10 cents per acre.

1957. Act of April 29 (Ch. 832, p. 1180) amended the act of February 22, 1957 (Ch. 37) by removing the limitation as to the date by which the repurchase of tax-forfeited land must be made.

1957. Act of April 29 (Ch. 844, p. 1195) provided a detailed procedure which it was hoped would be effective in preventing the breaking of the state's title to tax-forfeited lands.

1959. Act of March 25 (Ch. 130, p. 164) provided a detailed procedure by which the contract covering an auxiliary forest can be cancelled and the land listed under the tree growth tax law.

1959. Act of March 25 (Ch. 135, p. 177) authorized the Executive Council to extend certain incompleting timber-sale permits for such periods as it deems advisable.

1959. Act of April 3 (Ch. 158, p. 206) ordered that income from mineral leases of tax-forfeited lands be distributed 20 per cent to the general revenue fund of the state and 80 per cent to the county. Of the latter, three-ninths goes to the county, two-ninths to the town, village, or city, and four-ninths to the school district. Where the state owns only subsurface miner-

als, the lessee must compensate the surface owner for any damage to him by mining operations.

1959. Act of April 10 (Ch. 185, p. 264) defined "timber," in connection with the administration of tax-forfeited lands, to include "trees and reproduction thereof of every size and species, which will or may produce forest products of value, whether standing or down, and including but not limited to, logs, bolts, posts, poles, cordwood, and decorative material."

1959. Act of April 10 (Ch. 187, p. 266) authorized the withdrawal and sale by the county board, with the approval of the Commissioner of Conservation, of such tax-forfeited lands in memorial forests as it finds more suitable for other purposes.

1959. Acts of April 18 (Ch. 341, 342, p. 454) authorized the exchange of state lands with the United States Steel Corporation and the Ontario Iron Company upon recommendation of the Commissioner of Conservation and with the approval of the Land Exchange Commission.

1959. Act of April 18 (Ch. 348, p. 471) declared that, "except as ownership of particular tracts of land should be held by the state or its subdivisions for a recognized public purpose and public access, it is the general policy of this state to encourage return of tax-forfeited lands to private ownership and the tax rolls through sale, and classification of lands according to this chapter is not in contravention of this policy." The act authorized county boards to classify or reclassify tax-forfeited lands within townships with a taxable valuation of less than \$20,000 without the approval of the town board. In such classification or reclassification, the "present use of adjacent lands, productivity of the soil, character of the forest or other growth, accessibility of the land to established roads, schools and other public services, or their suitability or desirability for particular uses" must be considered.

1959. Act of April 24 (Ch. 385, p. 522) raised to \$350 the appraised value of standing green and other timber that may be sold by the Director of the Division of Forestry without formalities. The Director was also authorized to grant an extension for one year only.

1959. Act of April 24 (Ch. 411, p. 549) established the Great River Road, or Mississippi Parkway, and provided for its location and construction.

1959. Act of April 24 (Ch. 441, p. 577) made many administrative changes in the tree growth tax law of April 24, 1957 (Ch. 639), including limitation to 5 acres of the minimum area that can be listed under the law and removal of the limitation of 10,000 acres in a single ownership in any one county.

1959. Act of April 24 (Ch. 453, p. 599) authorized county auditors to sell without advertisement green standing and other timber with an appraised stumpage value up to \$500.

1959. Act of April 24 (Ch. 454, p. 501) authorized the county auditor, with the approval of the county board and the Commissioner of Conservation, to grant leases for not more than 25 years for the removal of peat from tax-forfeited lands upon such terms and conditions as the county board may prescribe. The act also extended to 10 years the period for which cottage sites may be leased on tax-forfeited land.

1959. Act of April 24 (Ch. 559, p. 882) authorized any county in the state with a population of less than 300,000 according to the 1950 federal census to carry on planting and zoning activities "for the purpose of promoting the health, safety, morals, and general welfare of the community." The county board may prepare a comprehensive plan for the orderly development of the county, and may establish zoning districts within which the use of the land for agriculture, forestry, recreation, residence, industry, trade, soil conservation, water

supply conservation, surface water drainage and removal, and other purposes may be encouraged, regulated, or prohibited. The county board must appoint a board of adjustment to act upon all questions involving the administration of any ordinance or official control. It may also appoint a planning advisory commission and a planning director, and may contract with other agencies for such services as it may require.

1959. Act of April 24 (Ch. 561, p. 890) provided for the consolidation of auxiliary forests in the same ownership and the same county, subject to the approval of the county board and the Commissioner of Conservation.

1959, Extra Session. Act of July 2 (Ch. 82, p. 1888) created an Interim Commission on Forest Resources and Forest Land Ownership to consider all matters in these and related fields.

APPENDIX VI

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32. CHATELAIN, VERNE E.: "The Federal Land Policy and Minnesota Politics," *Minn. History Bul.* 22:227-248. 1941.

Discusses the revolt of the settlers in the 1850's against the railroad-grant and preemption policies of the federal government, to which the author attributes the State's decisive vote for Lincoln in 1860.

33. CLAWSON, MARION: "Uncle Sam's Acres," Dodd, Mead & Company, New York. 1951.

Presents "a comprehensive, balanced picture of the federally owned lands and of the major federal water developments in the United States, in

relatively simple terms, and primarily for the non-specialist reader."

34. ———, and BURNELL HELD: "The Federal Lands: Their Use and Management," The Johns Hopkins Press, Baltimore. 1957.

Seeks "to bring together full and accurate information on the management and use of the federal lands, and to present some suggestions of the problems and opportunities of the future." Contains a wealth of statistical information, mostly on a national basis, in numerous tables and figures.

35. COFFMAN, LOTUS D., and ASSOCIATES: "Land Utilization in Minnesota—A State Program for Cut-over Lands," Univ. of Minn. Press, Minneapolis. 1934.

This final report of the 12-man Committee on Land Utilization appointed by Governor Floyd B. Olson, with President Coffman of the University of Minnesota as chairman, was written chiefly by its Editorial Committee consisting of Raphael Zon (Chairman), Prof. William Anderson, and Prof. Oscar B. Jesness. It is one of several definitive studies in the early 1930's dealing with the critical problems in northeastern Minnesota. Significant chapters discuss social and economic effects of past land development, population trends, present and possible need for agricultural land, forest lands, use of land for recreation, water and mineral resources as related to land use, taxation as it affects land use, local government under changed land use conditions, and future use of land in Minnesota.

36. CONZET, GROVER M.: "State Lands—Their Agricultural and Forest Possibilities," Conservation Commission, St. Paul. 1928.

Emphasizes the fact that only 4 per cent of the land examined can be regarded as potentially agricultural. Makes recommendations for the establishment, consolidation, and management of state forests, for the strengthening of fire protection, for the establishment of a state forest

nursery, and for the conduct of research.

37. ———: "General Summary of Land Classification Reports for the Establishment of State Forests and Conservation Areas," Dept. of Conservation, Div. of Forestry, St. Paul. 1933. Duplicated.

Points out that land classification surveys show that the State of Minnesota has intermingled ownerships of valuable timberlands and large areas of nonproductive muskeg and other virtually waste land. Makes numerous recommendations with respect to state policy and legislation.

38. COTTAM, CLARENCE: "Wildlife and Water Conservation," *Jour. Soil and Water Conservation* 13:65-69. 1958.

Emphasizes the drainage issue, "particularly as it relates to the important duck-nesting pothole region of the Dakotas and southwestern Minnesota."

39. CUNNINGHAM, R. N., DEAN QUINNEY, and ARTHUR HORN: "Minnesota's Forest Resources," Forest Service, Forest Resource Report No. 13, Washington. 1958.

Summarizes the forest-resource information collected in the cooperative surveys of 1947-1954 and compares it with the survey data collected about fifteen years earlier.

40. DANA, SAMUEL T.: "Forest and Range Policy—Its Development in the United States," McGraw-Hill Book Company, Inc., New York. 1956.

Many of the laws and policies discussed in this comprehensive treatment of the subject apply to Minnesota.

41. ———: "Research Needs in Forest Recreation," *Soc. of Amer. Foresters, Proceedings* 1956:33-38.

Discusses current needs for research in the rapidly growing field of forest recreation with respect to supply and demand, costs and returns, and management and administration.

42. ———: "Problem Analysis—Research in Forest Recreation," Forest Service, Washington. 1957. Duplicated.

Analyzes the problems requiring re-

search in the field of forest recreation, with special reference to the responsibilities of the Forest Service.

43. DAVIS, CLARENCE A.: "Federal Encroachment on State Water Rights." Duplicated by Irrigation Districts Association of California, San Francisco. 1959.

Documents the author's thesis that there is increasing federal encroachment on the water rights of the states, and outlines the claims of the contending forces.

44. DAVIS, ELIZABETH GOULD: "Drainage of Agricultural Land—A Bibliography of Selected References," U. S. Dept. of Agric. Misc. Pub. 713, Washington. 1956.

A comprehensive bibliography covering drainage in general, legislation and finance, special problems, drainage practices, drainage needs and effects, and projects and programs, with a 46-page index.

45. DEKRUIF, PAUL: "Seven Iron Men," Harcourt, Brace and Company, New York. 1929.

A popular account of the long search for iron ore in Minnesota by the Merritt family, which resulted in 1890 in the discovery of the enormously rich Mesabi Range. The financial rise and fall of the family are also described.

46. DOBIE, JOHN: "The Itasca Story," Ross & Haines, Inc., Minneapolis. 1959.

Contains a detailed history of the acquisition and development of Itasca Park, a description of its resources, and a statement of its problems.

47. DONALDSON, THOMAS: "The Public Domain: Its History, with Statistics," H. R. Misc. Doc. 45, 47th Cong., 2d Sess., Part 4, Govt. Printing Office, Washington. 1884.

Gives a complete history of the acquisition and disposal of the public domain to June 30, 1880, with addenda to December 1, 1883.

48. DONERY, JOSEPH A.: "Forest Resources of Minnesota," *American Forests* 54:26-28, 44. 1948.

A section of the Forest Resource Appraisal made by the American For-

estry Association, this article contains preliminary information on the forest resources of the state, including data on area, volume, growth, and drain.

49. ENGENE, SELMER A., and GEORGE A. POND: "Agricultural Production and Types of Farming in Minnesota," Univ. of Minn., Agric. Exp. Sta. Bul. 347. 1940.

Describes soils, climate, and farm types in nine principal farming districts in Minnesota and gives detailed 1930 census statistics on acreages, field crops, livestock, source of income, etc.

50. FAIRCHILD, FRED ROGERS: "Conclusions and Recommendations," Forest Service, Forest Taxation Inquiry Progress Report No. 18, Washington. 1933. Duplicated.

Summarizes the problems of forest taxation and makes recommendations for their solution.

51. _____, AND ASSOCIATES: "Forest Taxation in the United States," U. S. Dept. of Agric. Misc. Pub. 218, Govt. Printing Office, Washington. 1935.

A comprehensive analysis of all aspects of the problem of forest taxation, with recommendations for improvements. Areas in northern Minnesota are used to illustrate the effects of poor assessment and excessive tax levies on management of cut-over land. Of even greater local interest are several progress reports, notably:

No. 3. "Resources and Tax Base of the Forest Counties of Minnesota," by H. H. Chapman, R. C. Hall, and P. A. Herbert. 1928.

No. 5. "The Forest Counties of Minnesota—Tax Base, Tax Rates, and Tax Burden on Wild Land," by H. H. Chapman. 1929.

No. 9. "Property Taxation in Selected Towns in the Forest Land Regions of Minnesota," by R. C. Hall and P. A. Herbert. 1930.

No. 10. "Tax Delinquency in the Forest Counties of the Lake States," by H. H. Chapman and Daniel Pingree. 1930.

These reports are annotated under

the names of the authors.

52. FEDERAL RESERVE BANK OF MINNEAPOLIS: "Beneficiation of Iron Ore in the Lake Superior District," Monthly Review Vol. 13, No. 10. 1957.

Sketches the history of iron-ore concentration activities in northern Minnesota and Michigan, and forecasts trends in output of various classes of ore over the next twenty-five years. Taconite concentrates are expected to grow significantly, perhaps supplying as much as 35 or 40 million tons annually by 1975."

53. FOLWELL, WILLIAM WATTS: "A History of Minnesota," 4 Vols., Minn. Historical Society, St. Paul. 1921-1930.

By far the most complete history of Minnesota, this work covers major events from 1660 through 1925. The author was President of the University of Minnesota from 1869 to 1894. Sections of special interest in connection with land-use studies include settlement of the territory and state, railroad grants and the five-million-dollar loan, pine-land frauds, Indian problems, Chippewa and Sioux half-breed scrip, discovery and development of the iron mines, and a brief biography of Christopher C. Andrews, "the apostle of forestry."

54. FOREST INDUSTRIES INFORMATION COMMITTEE OF MINNESOTA: "Minnesota's Forest Wealth," Duluth. 1946.

Covers the subjects of forest inventory, farm woods, forest values, forest management, forest fires, and forest taxation, and presents conclusions and recommendations.

55. GILCREAST, ROY, and WILLIAM MUSBACH: "Land Use Policies in the Cut-over Regions of Minnesota with Special Reference to Eastern Pine County," U. S. Dept. of Agric., Washington. 1939.

A pilot study of a typical cut-over area to see what might be accomplished by land-use planning to improve the condition of settlers and the local government.

56. GULICK, LUTHER HALSEY: "American Forest Policy: A Study of Govern-

ment Administration and Economic Control," Duell, Sloan and Pearce, New York. 1951.

Attempts to answer the question: "In the area of forestry, how has the government sought to influence the economy, through what devices, with what results in administration and to the economy?"

57. HALL, R. C., and P. A. HERBERT: "Property Taxation in Selected Towns in the Forest Land Regions of Minnesota," Forest Service, Forest Taxation Inquiry Progress Report No. 9, Washington. 1930. Duplicated.

Presents detailed statistics on areas, assessed values, and appraised values of forest and farm land in selected towns in five counties.

58. HANSEN, HENRY L., and D. P. DUNCAN: "The Management of Itasca State Park Forest to Meet Recreational Objectives," Soc. of Amer. Foresters, Proceedings 1954:123-125. Also published as Univ. of Minn., Agric. Exp. Sta. Misc. Journal Series Paper No. 866.

The authors conclude that "management while aiming to provide diversity of both flora and fauna, should encourage and maintain in reasonable quantity those types or species providing maximum recreational enjoyment to the majority of the Park's visitors including generations yet unborn."

59. HARDIN, CHARLES M.: "The Politics of Agriculture—Soil Conservation and the Struggle for Power in Rural America," The Free Press, Glencoe, Ill. 1952.

Discusses the relation of agriculture to politics at both the federal and the state level.

60. HARTMAN, W. A., and J. D. BLACK: "Economic Aspects of Land Settlement in the Cut-over Region of the Great Lakes States," U. S. Dept. of Agric. Cir. 160, Washington. 1931.

Discusses the history and prospects of land settlement in the region. "Under existing agricultural conditions and in the light of our present knowledge of the limited economic need for the expansion of our crop area for

many years to come, prospective settlers cannot afford to pit their resources against the obstacles encountered in the development of a new farm in any area that is not definitely more economically suited for agricultural purposes than for some other purpose."

61. HATCHER, HARLAN: "A Century of Iron and Men," The Bobbs-Merrill Company, Inc., New York. 1950.

Includes considerable material concerning the discovery and development of the Vermilion and Mesabi iron ranges, including the consolidation of mining and shipping interests.

62. HIBBARD, BENJAMIN H.: "History of the Public Land Policies," The Macmillan Company, New York. 1924.

A comprehensive presentation and analysis of the policy of the United States in the disposal of its public lands.

63. HILL, JAMES J.: "History of Agriculture in Minnesota," Minn. Historical Society Collections No. 15:275-290, St. Paul. 1898.

Recollections of the beginnings and development of agriculture in Minnesota. "The agricultural history of this state is practically the history of the state."

64. HOLBROOK, STEWART H.: "Iron Brew: A Century of American Ore and Steel," The Macmillan Company, New York. 1939.

A popular account of the development of the iron ranges and of the steel industry.

65. HORN, CHARLES L., JR.: "The Iron Ore Industry in Minnesota and the Problem of Depleted Reserves," Minneapolis. 1956.

Discusses in considerable detail the history, technology, and economics of iron-ore production in Minnesota, with special reference to present and prospective reserves.

66. HOTCHKISS, GEORGE W.: "History of the Lumber and Forest Industries of the Northwest," George W. Hotchkiss & Company, Chicago. 1898.

The author, himself a lumberman and newspaperman, traces the history

of lumbering in the Lake States from colonial days (about 1690) to near the end of the nineteenth century. Gives considerable detail on mill production and lumbering activity in specific areas and includes biographical sketches of men prominent in sawmilling and lumbering during the nineteenth century.

67. IVERSON, SAMUEL G.: "The Public Lands and School Fund of Minnesota," *Minn. Historical Collections* No. 15: 287-314, St. Paul, 1915.

The state auditor discusses the federal land grants to the state, the policies followed in their disposal, and the results obtained, with special reference to financial returns.

68. JARCHOW, MERRILL E.: "The Earth Brought Forth—A History of Minnesota Agriculture to 1885," *Minn. Historical Society*, St. Paul, 1949.

Describes the economic and social development of agriculture in Minnesota prior to 1885, with considerable information on land legislation and disposal, both federal and state.

69. JERABEK, ESTHER: "A Bibliography of Minnesota Territorial Documents," *Minn. Historical Society*, St. Paul, 1936.

Lists systematically the printed reports, messages, proceedings, journals, collections of laws, rules, opinions, annals, bills, resolutions, memorials, and other materials officially issued by Minnesota from 1848 to 1858.

70. JESNESS, OSCAR B., and REYNOLDS I. NOWELL: "Zoning Minnesota Lands," *Univ. of Minn., Agric. Ext. Div. Spec. Bul.* 167, St. Paul, 1934 (reprinted 1937).

States the need for classification of Minnesota's cutover lands into agricultural and non-agricultural, and for zoning non-agricultural lands not already adequately served by roads and school bus routes.

71. _____, AND ASSOCIATES: "A Program for Land Use in Northern Minnesota," *Univ. of Minn. Press*, Minneapolis, 1935.

A comprehensive presentation of (1)

the 1934 situation in land use in the fourteen northeastern counties, and (2) proposed policies and programs of adjustment. The latter include land classification and zoning, improved utilization of private forest lands, acquisition and utilization of land for public purposes, improved use of agricultural land, relocation of farm families, and adjustments of local government.

72. KAUFERT, FRANK H.: "Minnesota's Forests and Forest-Products Industries," *In "Minnesota's Tomorrow—The Economic Future of Our Region,"* *Univ. of Minn., Social Science Research Center*, St. Paul, 1956. Reprinted.

Traces the history of the lumber industry and of the pulp and paper industry, and discusses the challenges and opportunities inherent in the current situation.

73. KISE, JOSEPH: "Minnesota Government," *John C. Winston Company*, Philadelphia, 1953.

Outlines in textbook form the responsibilities and operations of state, county, township, village, and city government. Includes a copy of state constitution, with amendments to 1950.

74. KNUTSON, CLARENCE: "The Forest-Farm Community Plan for the Chippewa National Forest," *Cass Lake*, 1940. Manuscript.

A forest supervisor outlines a method to improve the status of settlers within the national forest through an integrated farm-forestry program.

75. LARSON, AGNES M.: "History of the White Pine Industry in Minnesota," *Univ. of Minn. Press*, Minneapolis, 1949.

Traces the story of pine lumbering from the beginning to the closing of the principal mills; assesses the contribution of the lumber industry to the State of Minnesota; describes how the pine lands became private property; and gives examples of the operation of federal land laws, including instances of trespass and fraud.

76. LEAGUE OF MINNESOTA MUNICIPALITIES: "Minnesota Yearbook," Annual

from 1930 through 1937, *Univ. of Minn., Minneapolis*.

Describes in detail the organization of state and local government and presents statistics on assessed valuations, tax rates, tax levies, indebtedness, etc. Since 1937 similar data have been published by the Public Examiner.

77. LEVERETT, FRANK, and FREDERICK W. SARDESON: "Surface Formations and Agricultural Conditions of (1) Northwestern Minnesota, (2) Northeastern Minnesota, (3) South Half of Minnesota," *Univ. of Minn., Geological Survey Buls.* 12, 13, and 14, Minneapolis, 1915-1919.

Present basic physiographic and meteorological facts together with economic data for the early part of the century.

78. MANNING, RAYMOND E.: "Taxes and Other In-Lieu Payments on Federal Property," *Preliminary Report Prepared by the Legislative Reference Service, Library of Congress, for House Committee on Interior and Insular Affairs, Com. Print No. 25, 83d Cong., 2d Sess., Govt. Printing Office, Washington*, 1954.

Presents detailed information on the economic picture, the legal picture, the picture by type of property, and proposals for changes in current legislation. Most of the material deals with the country as a whole, but there is some discussion of the proviso for payments in lieu of taxes in part of the Superior National Forest.

79. MANSON, PHILLIP W.: "Water and Agricultural Land," *Univ. of Minn., Agric. Exp. Sta. Misc. Journal Series Paper No. 947*, St. Paul, 1957.

Discusses the importance of water to the farmer, the conflict of interest in the drainage of agricultural land, and the effect of drainage on the water supply.

80. _____, and DALTON G. MILLER: "Groundwater Fluctuations in Certain Open and Forested Bogs of Northern Minnesota," *Univ. of Minn., Agric. Exp. Sta. Tech. Bul.* 217, St. Paul, 1956.

Presents the results of a study to

determine (1) the extremes of variation in groundwater elevations in ditched and unditched bogs during wet and drought periods, and (2) the extent to which these northern bogs may contribute to the underground water supply of the state.

81. McMILLER, P. R.: "Soils of Minnesota," *Univ. of Minn., Agric. Ext. Service, Ext. Bul.* 278, St. Paul, 1954.

Contains brief descriptions of the soil associations of Minnesota, with a map showing their distribution.

82. MINNESOTA DEPARTMENT OF CONSERVATION: "Biennial Reports," *St. Paul*.

These reports give an excellent picture of current developments in fields under the jurisdiction of the Department of Conservation. The report for 1945-1946 has much material on land forfeiture and exchange.

83. _____: "Laws Relating to Game and Fish, 1957-1958," *Prepared by the Attorney General*, St. Paul.

A compilation of the laws relating to game and fish activities of the Department of Conservation.

84. _____: "A Study of the Natural Resources of Mahanomen County," *St. Paul*, 1959. Duplicated.

Presents in detail the results of a comprehensive inventory of Mahanomen County (used as a pilot study area), and makes specific recommendations for their improved management. Emphasis is placed on multiple use, land classification, and zoning.

85. _____, DIVISION OF FORESTRY: "Minnesota's Timber," *Educational Pamphlet No. 5*, St. Paul, 1940. Duplicated.

Covers briefly the original forests, the rise and fall of logging, the current situation, and needed action.

86. _____: "Minnesota's State Forests," *Educational Pamphlet No. 8*, St. Paul, Duplicated.

Deals chiefly with the history and uses of state forests.

87. _____: "A Forest Inventory Report for State Lands in

the Forest Region of Minnesota," St. Paul, 1955.

Summarizes the results of a state-wide, extensive forest inventory conducted in 1954-1955, including data on general timber conditions, volume by species, area by types, and a recommended cutting budget for all state-owned lands. Subsequent remeasurement of sample areas, the first to be made in 1960, will give information on acreage and volume trends, mortality by causes, growth, and yields.

88. ———: "Forest Laws," St. Paul, 1956.

A thorough compilation of the laws relating to forestry in the state, based chiefly on Minnesota Statutes Annotated.

89. ———, DIVISION OF STATE PARKS: "A Program and Finance Plan, 1955-1957," St. Paul, 1951. Duplicated.

Outlines the plans of the Division for the period 1955-1957.

90. MINNESOTA DEPARTMENT OF TAXATION: "Biennial Reports," St. Paul.

These reports contain much information concerning tax delinquency and tax forfeiture.

91. [Minnesota] GOVERNOR'S INTERRACIAL COMMISSION OF MINNESOTA: "The Indian in Minnesota — A Report to Governor Elmer C. Anderson" (revised), St. Paul, 1952.

Gives a brief history of Indian affairs in Minnesota, including land cessions and reservations, and discusses current economic and social problems.

92. [Minnesota] GOVERNOR'S MINNESOTA TAX STUDY COMMITTEE: "Report," St. Paul, 1956.

"An objective over-all picture of the State's economy and tax structure" based on an intensive study by a broadly representative committee of twenty citizens with the aid of a research staff and consultants. Although the 600-page report does not deal specifically with problems in the field of forest management, it points to flaws in the tax structure which are related to these, including unsatisfactory assessment procedures under the

general property tax, inequities in the personal property tax, and effects of several systems for taxing iron ore. It devotes 50 pages to specific recommendations for improvement.

93. MINNESOTA INSTITUTE OF GOVERNMENTAL RESEARCH: "Bulletins," St. Paul.

This series of bulletins deals with problems of taxation and governmental organization in Minnesota and its subdivisions. Especially useful in connection with land-use studies are:

Bul. No. 18, "Problems of State Aid in Minnesota," 1947.

Bul. No. 25, "Reorganizing the Local School System," 1949.

Bul. No. 29, "Reorganizing the State Government of Minnesota," 1952.

94. MINNESOTA LEGISLATURE, COMMISSION ON EFFICIENCY IN GOVERNMENT ("Little Hoover Commission"): "Report," St. Paul, 1950.

Chapter 5 deals with conservation and Chapter 13 with taxation.

95. ———, COMMISSION ON TAXATION: "Report," St. Paul, 1955.

Covers various aspects of the taxation of iron ore.

96. ———, FORESTRY STUDY COMMISSION: "Progress Report," St. Paul, 1954. Duplicated.

A thorough study of the current forest situation and of the forestry programs of public and private agencies in Minnesota, with recommendations.

97. ———, INTERIM FORESTRY STUDY COMMISSION: "Report," St. Paul, 1957.

A much briefer and less comprehensive report than that of the previous Forestry Study Commission (1954). It discusses forestry in northeastern and southeastern counties and the marketing and utilization of forest products, and makes several recommendations.

98. ———, LEGISLATIVE RESEARCH COMMITTEE: "Forests and Forest Land in Minnesota," Pub. No. 16, St. Paul, 1948. Duplicated.

Discusses forest management, land exchange, forest taxation, timber cutting regulations, and local government forests.

99. ———: "The Long Term Timber Contract Bill," Pub. No. 20, St. Paul, 1948. Duplicated.

Discusses the arguments for and against the proposal to provide for "long-term leasing of public lands to private timber operators," and compares it with the federal sustained-yield act of 1944 (P. L. 273).

100. ———: "Iron Mining Taxation," Pub. No. 39, St. Paul, 1950. Duplicated.

Discusses various aspects of the taxation of iron mining.

101. ———: "Minnesota's State and Local Tax Burden," Pub. No. 50, St. Paul, 1952. Duplicated.

Presents figures on the state and local burdens resulting from various taxes.

102. ———, PINE LAND INVESTIGATING COMMITTEE: "Report to the Governor, December 21, 1894," St. Paul, 1895.

Presents evidence of widespread incompetence and dishonesty in the handling of the state's pine lands, with recommendations for improving the situation.

103. MINNESOTA OFFICE OF IRON RANGE RESOURCES AND REHABILITATION: "Biennial Reports," St. Paul.

These reports contain full information concerning the current activities of the Office of Iron Range Resources and Rehabilitation.

104. ———: "Minnesota's Woodpile," St. Paul, 1954.

A brief discussion of the forest resources of the state and their utilization.

105. ———: "Outlook on Minnesota's Resources," St. Paul, 1956.

Contains a full report on the Governor's State-wide Conference on Resources, November 16-18, 1955. The subjects covered are power and energy; industrial, recreational, and tourist; agriculture and soils; mineral resources; water resources; human resources; and forest resources.

106. ———: "Opportunity for Wood-using Industries in the Mississippi Headwaters Area," St. Paul, 1958.

A brief presentation—mostly tabular, graphic, and pictorial—of the forest, labor, and community resources of the region.

107. ———, in Cooperation with LAKE STATES FOREST EXPERIMENT STATION: "The Forest Resources of . . ." St. Paul, 1947-1958.

A series of reports summarizing the results of current forest surveys for fifteen northern counties and for southwestern Minnesota, southeastern Minnesota, central Minnesota, and the Red River Valley.

108. ———, and MINNESOTA DEPARTMENT OF CONSERVATION: "Minnesota Directory of Primary Wood-using Industries," St. Paul, 1955.

A directory by counties of firms engaged in the primary manufacture of forest products, with information for each as to the type of mill and type of market.

109. ———, and MINNESOTA ARROWHEAD ASSOCIATION: "M. A. A. Vacation-Travel Survey, 1958," St. Paul.

Provides much statistical information concerning the supply of recreational facilities, the demand for vacation and travel services, and trip characteristics in the nineteen counties included in the "Arrowhead."

110. MINNESOTA PUBLIC EXAMINER: "Report," St. Paul.

Annual report on the revenues, expenditures, indebtedness, taxable valuations, and levies of state and local governments in Minnesota. (Similar information from 1930 through 1937 was published annually by the League of Minnesota Municipalities.)

111. MINNESOTA RESOURCES COMMISSION: "Mineral Resources of Minnesota," St. Paul, 1940.

A brief description of the character and location of Minnesota's chief mineral resources.

112. MINNESOTA STATE FORESTRY BOARD: "Reports," St. Paul, 1897-1911.

Contain information concerning the activities of the board, which included the administration of Itasca Park and

of the Pillsbury and Burnside forest reserves.

113. MINNESOTA STATE AUDITOR: "Biennial Reports," St. Paul, 1861-1936.

Contain much information concerning acquisition and disposal of state lands and timber, including a financial account of the operations of the State Forester and the Department of Conservation.

114. MITTELHOLTZ, ERWIN F.: "Historical Review of the Red Lake Indian Reservation," General Council of the Red Lake Band of Chippewa Indians and the Beltrami County Historical Society, Bemidji, 1957.

Contains a detailed history of the Red Lake Indian Reservation, with current information concerning its administration, activities, and services.

115. MURCHIE, R. W., and C. R. WASSON: "Beltrami Island, Minnesota—Resettlement Project," Univ. of Minn., Agric. Exp. Sta. Bul. 334, St. Paul, 1937.

Describes the first of the demonstration resettlement projects under the federal land retirement program. Work started in August, 1934, and continued through 1936. Gives history and background of the remote "island," surrounded by swamp and with meagre incomes, high governmental costs, and inadequate public services, and describes the transfer of settlers to a near-by area with better soils and better living conditions.

116. MUSBACH, W. F., and M. C. WILLIAMS: "Rural Zoning in Minnesota," Jour. Land and Public Utility Economics 16:105-109, 1940.

Gives the legal basis and the operating procedure for newly organized districts.

117. NUTE, GRACE LEE: "The Voyageur's Highway—Minnesota's Border Lake Land," Minn. Historical Society, St. Paul, 1945.

Contains a popularly written history and description of the canoe country between Minnesota and Canada from the Grand Portage to Rainy Lake.

118. ORFIELD, MATTHIAS N.: "Federal Land Grants to the States with Special

Reference to Minnesota." Univ. of Minn., Social Science Monographs No. 2, St. Paul, 1915.

An exhaustive review of the character, extent, and administration of federal land grants, with special reference to Minnesota, for which it contains by far the most comprehensive account available in print.

119. PEPPER, E. LOUISE: "The Closing of the Public Domain—Disposal and Reservation Policies, 1900-1950," Stanford Univ. Press, Stanford, Calif. 1951.

Describes in detail "the steps by which the concept of the public domain has veered from one of land held in escrow pending transfer of title, toward one of reservations held in perpetuity in the interest of the collective owners, the people of the United States."

120. PETERSON, C. PETRUS: "Water Rights under the Federal System," Duplicated by Irrigation Districts Association of California, San Francisco, 1959.

Analyzes the respective water rights of the federal and state governments as established by legislation and court decisions.

121. PETERSON, HAROLD F.: "Early Minnesota Railroads and the Quest for Settlers," Minn. History Bul. 13: 25-45, 1932.

Summarizes the efforts of the state and the railroads to attract settlers.

122. PETERSON, ORVILLE C., and EVERETT C. NORBERG: "A Summary of Existing Land Use Legislation in Minnesota," U.S. Dept. of Agric., Resettlement Admin., Land Utilization Pub. No. 13, Washington, 1937. Duplicated.

Deals with legislation up to 1936 on public lands and minerals, organization of Department of Conservation, forestry, parks and recreational areas, drainage and reclamation, waters and water courses, game and fish, financial aid to local units, and police powers over use of land and waters.

123. PIKE, GALEN W.: "Recent Mining Activities in and Adjacent to the Road-

less Areas of the Superior National Forest," Soc. of Amer. Foresters, Proceedings 1954:125-128, 1955.

Summarizes mineral prospecting developments that may affect the roadless areas in the Superior National Forest, and cites the Forest Service policy governing the prospecting for and development of mineral resources in these areas.

124. QUETICO - SUPERIOR COMMITTEE: "Report to the President of the United States," Washington, D. C. 1953.

A brief report on developments to date by the committee appointed by the President in 1934.

125. RAUP, PHILIP M., and JEROME E. JOHNSON: "The Minnesota Farm Real Estate Market in 1957," Univ. of Minn., Dept. of Agric. Economics Report 512, St. Paul, 1958.

Shows the steady rise in average price per acre for Minnesota farm land from 1952 through 1957, with an explanation of the differences which appear in six geographical subdivisions of the state.

126. RITCHEY, CHARLES J.: "Claim Associations and Pioneer Democracy in Early Minnesota," Minn. History Bul. 9: 85-95, 1928.

Describes briefly the activities of land-claim associations, with special reference to the Military Reserve Claim Association. ". . . the claim association came, stayed but a short time, and disappeared. It left little imprint on our institutional life . . . It reflects in particular the pioneer's resourcefulness in meeting conditions for which there was no existing formula."

127. ROBBINS, ROY M.: "Our Landed Heritage," Princeton Univ. Press, Princeton, N. J. 1942.

"This volume presents perhaps the first attempt to integrate American land history with the other forces that have shaped our civilization . . . [It] constitutes not only a study in history and in public administration, but also a study in American democracy."

128. ROBINSON, EDWARD VAN DYKE:

"Early Economic Conditions and the Development of Agriculture in Minnesota," Univ. of Minn., Studies in the Social Sciences No. 3, Minneapolis, 1915.

A comprehensive presentation of the physical features and climate of Minnesota; early travel, trade, and transportation; settlement and development of pioneer agriculture, 1838-1860; period of specialized wheat farming, 1860-1880; development of diversified farming, 1880-1900; and recent tendencies in agriculture.

129. ROSE, JOHN KERR: "Survey of National Policies on Federal Land Ownership," Sen. Doc. No. 56, 85th Cong., 1st Sess., Govt. Printing Office, Washington, 1957.

Summarizes the national policy with respect to federal land ownership during four periods—prior to 1789, from 1789 to 1860, from 1860 to 1900, and from 1900 to 1956—with special reference to studies conducted by committees of Congress or committees of the Executive Branch of the Government.

130. ROSSMAN, GEORGE and ALLEN: "The Chippewa National Forest," Grand Rapids Herald-Review, Grand Rapids, 1956.

Deals chiefly with the history and uses of the Chippewa National Forest.

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Gives a digest of the legislation relating to the regulation of cutting practices in seventeen states, and includes an exhaustive bibliography on the subject.

138. ———, MINNESOTA SECTION: "Report on Minimum Standards of Forest Practice for Minnesota," St. Paul, 1944.

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139. ———, UPPER MISSISSIPPI VALLEY SECTION: "A Forestry Program for Minnesota," St. Paul, 1956.

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140. STODDARD, CHARLES H.: "Future of Private Forest Land Ownership in the Northern Lake States," *Jour. of Land and Public Utility Economics* 18:267-283, 1942.

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141. ———: "The Small Independent Firm's Role in the Forest Products Industry in the United States," *In Report of the Senate Select Committee on Small Business*, Sen. Report No. 240, 86th Cong., 1st Sess., Govt. Printing Office, Washington, 1959.

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143. STOLTENBERG, CARL H.: "Rural Zoning in Minnesota: An Appraisal," *Land Economics* 30: 153-162, 1954.

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that ordinances in eight northern counties approved between 1940 and 1946 have been influential in preventing some undesirable settlement and in a few cases have been outstandingly successful. Generally, however, they have fallen short of possibilities because of flaws in original drafting, inadequate administration, and lack of understanding on the part of the local public.

144. U. S. COMMISSION ON INTERGOVERNMENTAL RELATIONS: "Natural Resources and Conservation," Report of Study Committee, 1955.¹

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145. ———: "Payments in Lieu of Taxes and Shared Revenues," Report of Study Committee, 1955.

Contains a detailed statement of present contributions to local communities in the case of federal properties associated with shared revenues and those not so associated, together with recommended changes.

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147. U. S. CONGRESS, HOUSE COMMITTEE ON AGRICULTURE: "Hearings on U. S. Department of Agriculture Appropriations for 1959," Part 3, 1958.

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148. ———, HOUSE COMMITTEE ON GOVERNMENT OPERATIONS: "Real and

¹ Except as otherwise indicated, federal publications are printed by the Government Printing Office, Washington 25, D. C.

Personal Property Inventory Report (Civilian and Military) of the United States Government Located in the Territories, and Overseas as of June 30, 1955," House Report No. 1930, 84th Cong., 2d Sess., 1956.

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149. ———: "Federal Timber Sales Policies," Part I—Report of Subcommittee on Public Works and Resources, House Report No. 2960, and Part II—Supplementary Staff Report, Com. Print, 84th Cong., 2d Sess., 1956. (Issued also as committee prints of the Subcommittee on the Legislative Oversight Function of the Senate Committee on Interior and Insular Affairs.)

Part I contains the joint findings, conclusions, and recommendations of the House and Senate subcommittees with respect to "Overall Policy" and "Operations and Sales Management" for lands under the jurisdiction of the Forest Service, Bureau of Land Management, and Bureau of Indian Affairs. Part II is a detailed analysis of the matters studied by the subcommittees. Transcripts of joint hearings before the two subcommittees were also printed in two parts comprising 2,229 pages.

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Small Independent Firm's Role in the Forest Products Industry," Sen. Report No. 240, 86th Cong., 1st Sess., 1959.

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Contains a large number of articles dealing with the broad subject of "land," grouped under the following headings: our heritage of land; how we use and manage public lands; how we use our private lands; some financial aspects of land use; rights, ownership, and tenure; taking care of what we have; our woods and templed hills; our growing needs and problems; planning for a better use. There are many references to Minnesota.

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155. ———, AGRICULTURAL RESEARCH SERVICE: "Major Uses of Land in the United States—Summary for 1954," Agric. Inf. Bul. No. 168. 1957.

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A comprehensive report on the forest situation in the United States, with an analysis of the national programs required and the responsibility for them.

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A tabular summary, by states, of forest area, volume, growth, and drain.

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An analysis, chiefly in tabular form, of the timber cut in the region in 1954.

166. ———, ———: "Wood Use by Manufacturing Firms in Minneapolis and St. Paul," Sta. Paper No. 75. 1959.

A study of the procurement, use, and characteristics of lumber consumed by wood manufacturers in the Twin Cities.

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AND LABOR, BUREAU OF CORPORATIONS: "The Lumber Industry," 4 parts. 1913-1914.

Contains the first estimate based on systematic sampling of the volume of standing timber in the United States by regions. Presents evidence of heavy concentration of timber ownership in the hands of a comparatively few interests, and a great increase in the value of standing timber. Parts I and III contain considerable information concerning Minnesota.

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A comprehensive presentation of the results of an inventory initiated in 1952 to locate, classify, and evaluate the wetlands of Minnesota. Recommendations are made for cooperative action in preserving the waterfowl habitat in Minnesota and the Dakotas.

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180. ———, OFFICE OF THE SOLICITOR: "Federal Indian Law." 1958.

An exhaustive treatise of 1,051 pages on Federal Indian Law. Constitutes a revision to 1956 of the Handbook of Federal Indian Law prepared under the supervision of Felix S. Cohen and first printed in 1940.

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A comprehensive view of the land available and needed for crops, pasture, and range, with a classification of land relative to productivity.

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185. ———: "Maladjustments in Land Use," Part VI of the Report on Land Planning. 1935.

Discusses desirable major land-use adjustments and presents a program for the retirement of poor farm land by regions, one of which is the Great Lakes cutover region.

186. ———: "Forest Land Resources, Requirements, Problems, and Policy," Part VIII of the Report on Land Planning. 1935.

Discusses at length the subjects indicated in the title, with some specific figures relating to Minnesota.

187. ———: "Indian Land Tenure, Economic Status, and Population Trends," Part X of the Report on Land Planning. 1935.

Discusses the difficulties arising from the allotment system, social and economic conditions on selected reservations, Indian needs for agricultural credit, and trends in population, with much statistical material.

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189. U. S. NATIONAL RESOURCES COMMITTEE: "Regional Planning, Part V, Red River of the North." 1937.

Discusses planning in the region, with special reference to water problems, projects, and programs.

190. ———: "Regional Planning, Part VIII, Northern Lake States." 1939.

Discusses the social and economic problems in the 86 counties comprising the "cut-over area" of the northern Lake States and suggests remedial action.

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A digest of Part VIII of the report of the Land Planning Committee of the National Resources Board on forest land resources, requirements, problems, and policy in the region.

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Summarizes the situation nationally just before World War II. Outlines the activities and thinking of leaders in representative states, including Minnesota.

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Significant chapters deal with agricultural, forest mineral, energy, and man-power resources; with marketing manufacturing, and transportation; and with education and research.

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Contains detailed information concerning mining properties and interests in Minnesota and general statistics concerning iron-ore resources, shipments, prices, costs, valuation, and taxation.

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A comprehensive analysis by an economist of Forest Service appraisal methods and their results, with specific illustrations taken chiefly from Regions 5 and 6.

199. WELLS, GEORGE AND IRIS: "The Handbook of Wilderness Travel,"

Harper & Brothers, New York, 1956.
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Includes a full discussion of the provisions, enforcement, effectiveness, and possible improvement of the Minnesota law (1943) regulating cutting on privately owned forest lands.

291. WHITE, H. G., ENGINEERING CORPORATION: "Economic Analysis of the State of Minnesota: Report to the Minnesota Resources Commission," 3 Vols., New York, 1945.

Includes sections on agriculture, forestry, and mining.

202. WILLIAMS, ELLIS T.: "National Forest Contributions to Local Governments," *Land Economics* 31:204-214, 1955.

Compares 25 per cent fund payments to counties and contributions in kind with estimated taxes if the land were in private ownership for 135 sample counties in the northern, southern, Rocky Mountain, and Pacific Coast regions.

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Summarizes briefly the unfavorable economic conditions under which northeastern Minnesota had been struggling for several decades; explains the program of local studies in several counties since 1938; and suggests procedures to other counties interested in land classification, zoning, land exchange, and related matters.

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Contains a brief history of the discovery of the Mesabi Range, an estimate of its extent, and a detailed description of its geology.

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Presents a legal and administrative history of the Department of Conservation, the current activities of its five divisions, conservation law in Minnesota to 1948, an administrative analysis of the department, and an appraisal of each major activity. Includes a bibliography and a list of important state and federal statutes relating to resource management.

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Describes broadly the problems related to farm forestry in the Lake States and suggests certain remedial measures.

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Errata

Page

- xi. Part IV, Origin of Problems.
- xii. Appendix I, Supplementary Statistics.
- xii. The page number for the heading "Origin of Present Land-Use Pattern" in Appendix III should be 356.
- xiv. Line 6, 5-8 Agricultural Land.
- 3. Add footnote: For a list of the counties in each of the four regions in the state, see page 173.
- 255. In line 1, the figure for receipts from Consolidated Conservation Areas should be \$183,303.

