DOCTORAL DISSERTATION SERIES
Publication No.: 8420

AUTHOR: Edward Earl Sturgeon, Ph. D., 1954
University of Michigan

TITLE: TRENDS IN LAND USE AND OWNERSHIP IN CHEBOYGAN COUNTY, MICHIGAN, AS AFFECTED BY SOCIO-ECONOMIC DEVELOPMENT AND THE LAND DISPOSAL POLICY OF THE MICHIGAN DEPARTMENT OF CONSERVATION, WITH EMPHASIS ON LANDS SOLD TO PRIVATE OWNERS BY THE STATE OF MICHIGAN

University Microfilms, Ann Arbor, Michigan

TRENDS IN LAND USE AND OWNERSHIP

IN CHEBOYGAN COUNTY, MICHIGAN

As affected by socio-economic development and the land disposal policy of the Michigan Department of Conservation, with emphasis on lands sold to private owners by the State of Michigan.

by
Edward E. Sturgeon

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in the
University of Michigan
1954

Committee in charge:

Professor Samuel T. Dana, Chairman
Professor Warren W. Chase
Professor G. Robinson Gregory
Professor Kenneth C. McMurry
Professor John W. Hyde

TRENDS IN LAND USE AND OWNERSHIP IN CHEBOYGAN COUNTY, MICHIGAN

by Edward E. Sturgeon

The purpose of this study is to determine the trends in land use and in the State and private ownership balance in Cheboygan County, Michigan, as affected by socio-economic development and by the policies of the Michigan Department of Conservation in administering State properties. A broad description of the County and the population is presented, including social, economic, and political factors related to ownership and use of land.

The changes in total area devoted to agriculture, forestry, and recreation are indicated. The quality of lands in State ownership is described by classifying them according to Schoenmann's land types. Emphasis is placed on the uses, quality, and ownership characteristics of lands sold by the State of Michigan to private owners in Cheboygan County from 1936 to 1947 in order to evaluate the effectiveness of the policies of the Department of Conservation in selling selected tax-reverted lands to private owners.

The natural features of the County and the development of lumbering, agriculture, and recreation are described to provide a setting for the analysis of trends

in ownership and land use. Change in population number, distribution by age groups, and shifting of residence according to changing land-use patterns are indicated. Considerable space is given to local economy. The relative importance of agriculture, manufacturing, recreation, and forestry is discussed according to incomes produced and areas devoted to each rural land use. The relationship of the County economy to that of the region is developed and the effect on the County of downstate urban areas is pointed out. County government costs are enumerated for each function and compared with other selected counties in Michigan. Tax burdens are evaluated in terms of present tax delinquency.

More land is used for forestry and recreation than for agriculture. Lands used for agriculture increased to a high mark in 1945 when they comprised 30 per cent of the County area. By 1950 they had decreased to 27 per cent. Area devoted to crops and pasture declined while only farm woodlot area increased.

About 72 per cent of the County is forested. Approximately 50 per cent of the land area is devoted to growing trees for timber, an increase of 19 per cent from 1938. State forests comprise 38 per cent of this area and 12 per cent are in private ownership. Only a

small area of either State or private forest lands are under intensive forest management.

The privately-owned area used for recreation has more than doubled since 1938, although it accounts for only 14.5 per cent of the County area at present. The 175,000 acres of State forest are used for hunting, fishing, camping, and other recreational uses in addition to timber and game production. State ownership increased in area by approximately 60,000 acres since 1938. About 30 per cent of the increase was comprised of lands variably suited for agriculture.

Of the 20,571 acres sold by the State to private owners from 1935 to 1947, 25.7 per cent are used for pasture, 18.6 per cent for growing and harvesting timber, 15.1 per cent for speculation, 10.9 per cent for hunting, and 9.4 per cent for farm woodlots. All percentages for lands used for summer residence, crops, rural residence, orchard, and unknown uses total 10.9 per cent. More than 58 per cent of the lands sold by the State are in the better land types. By correlating uses of these lands with land capability, it is carefully estimated that 84 per cent will remain in private ownership continuously, barring too intensive use, a change to an inappropriate use with respect to soil capability, or a severe depression.

PREFACE

The writer is indebted to each of the members of the committee in charge of his program for helpful guidance and assistance throughout the course of the work toward the doctoral degree. He acknowledges the valuable help of the late Professor Willett F. Ramsdell, under whom the doctoral work was begun and the field work completed. A special debt of gratitude is owed Professor Samuel T. Dana for taking the chairmanship of the committee and for his encouragement and contribution of time and energy after retirement in guiding the preparation of the manuscript. Thanks are due also to Mr. Charles E. Millar, Chief of the Lands Division, Michigan Department of Conservation, and to members of his staff, especially Mr. William H. Colburn, for aid and splendid cooperation in obtaining information about lands studied in Cheboygan County and procedures used in their administration. The writer is obligated to Mr. Roswell Carr, former State Director of the Farmers' Home Administration, for financial aid from the Michigan Rural Rehabilitation Corporation funds for travel in completing the field work.

TABLE OF CONTENTS

	Page
LIST OF TABLES	viii
LIST OF ILLUSTRATIONS	xiv
INTRODUCTION	1
NATURAL FEATURES	8
Geography	8
Geology and Topography	10
Water Resources	12
Climate	13
Soils	15
Forest Cover	19
Wildlife	23
Minerals	26
HISTORICAL DEVELOPMENT	28
Presettlement Period	28
Settlement Period	31
Lumbering	31
Agriculture	34
Industry and Business	40
Recreation	42
THE POPULATION	46
Growth and Decline	46
Recent Change	48
Distribution by Age Groups	48
Residence and Geographic Distribution	50
Population Changes of Townships Classified According to Land Use	52
Future Trends	55
THE ECONOMY	57
Agriculture, Forestry, and Recreation	58
Manufacturing	60

Page

Trends, 1889-1947 60
Wood-using Industries 63
Lumbering 63
Secondary wood-using industries . . . 65

Other Industries and Industrial Conditions 68
Advantages and Disadvantages of Cheboygan County As a Location for Small Manufacturing Firms 73

Commercial Fishing 77
Retail and Wholesale Trade 78
Number of Establishments 78
Retail Sales 81

Employment 83
Transportation 89
Cheboygan County in the Regional Economy . . 94
Effect of Down-state Metropolitan Areas . . . 102

COUNTY GOVERNMENT 114

Tax Base 114
Cost of County Government 116
State Aid 116
Tax Delinquency 118
Solvency 121

RURAL LAND USE 122

Agriculture 122
Number of Farms and Farm Acreages 123
Farmland According to Use 126
Types of Farms 129
Farm Tenancy 132
Economic Farm Units 132
Agricultural Marketing 135
Dairy Production and the Milk Industry. . 138
Crop Production 139
Field Grains 139

Value of Farm Products Sold 141
Livestock 142
Forest Production 142
Gross Incomes of Farm Families 142
Growth of the Soil Conservation District. 143
Status of Homestead Families 145

Page

Forestry 146
Area by Forest Types 148
Volume and Growth 148
Forest Land Quality 150
Planting 150
Character of Private Ownership 151
Forest Lands in Public Ownership 153
Other Uses of Forest Land 153
Forest Fires and Fire Protection 154
Forest Lands under the Commercial Forest Reserve Act 157
Taxation of Private Forest Lands 160

Recreation 161
Tourist Attractions 162
Tourist Accommodations 164
Fishing 168
Hunting and Trapping 173

STATE-OWNED RURAL LANDS 178

Area in Cheboygan County 178
Methods of Acquisition 180
Reversion 180
Purchase of Land 182
Water frontage 182
State park land 183

Exchanges 183

Administration 183
Payments in Lieu of Taxes 184
Uses of State Lands 186
State Forests 186
State Parks 190
Water Frontage 191
Undedicated Lands 193
University of Michigan Biological Station Tract 194

Land Management Policy 196
Land Quality 197
Work Projects and Personnel 201
Trends in State Ownership 202
State and Private Ownership Balance 206
Ownership Concepts 207
Public ownership 207
Private ownership 209

Economic Factors 211

Page

Lands Susceptible to Tax Delinquency . . 212
Lands held speculatively 212
Infertile farm and forest lands . . 213

PRIVATE RURAL LANDS FORMERLY STATE-OWNED 216

Land Disposal Policy of the Michigan Department of Conservation 217
Procedure for Acquisition by Private Owners 221
Ownership History and Area Sold by Periods . 224
Method of Study 227
Results of Sale 228
Success of Applicants 228
Purchase Prices 230

Description 234
Distribution 234
Land Quality 235
Cover 237
Accessibility 240
Fencing 242
Buildings and Occupancy 242

Residence of Owners 243
Reaction of Private Owners to the Sale Policy of the Michigan Department of Conservation 247
Use 248
Classification of Lands by Use 248
Pasture use 248
Timber use 250
Speculation 252
Hunting use 256
Woodlot use 259
Crop land 260
Rural residences 260
Orchards 262
Summer residences 262
Unknown classification 264

Correlation of Land Use Designated on Applications and Actual Uses 264
Area of State Land Added to Farms . . . 265
Land Use by Non-resident Owners 266

Taxation 269
Comparison with Past Values 269
Unassessed Lands 272

Page

Area Purchased from the State, 1947-1952 . . 272
Use Areas Classified by Land Types 274
The Success of the Land Disposal Policy of the Department of Conservation 277

SUMMARY AND CONCLUSIONS 283

APPENDIX 312

LITERATURE CITED 333

LIST OF TABLES

Table		Page
1.	Normal Monthly, Seasonal, and Annual Temperature and Precipitation at Cheboygan County, Michigan	14
2.	Area of Original Forest Types	23
3.	Lumber Production in Cheboygan County. . . .	33
4.	Number and Percentage of Population by Residence, 1940, 1950	51
5.	Area, Number of Persons Employed, and Incomes from Basic Land Uses, Cheboygan County	59
6.	Operating Sawmills in Cheboygan County, 1935, 1949	64
7.	Secondary Wood-using Industries, Cheboygan County, 1935	67
8.	Secondary Wood-using Industries, Cheboygan County, 1949	67
9.	Volume and Species of Wood Used by Secondary Wood-using Industries of Cheboygan County According to Source in 1949	69
10.	Number of Stores and Sales for Retail Groups, Cheboygan County, 1939, 1948	79
11.	Statistics for Retail Firms, Cheboygan County, 1939, 1948	80
12.	Statistics for Wholesale Firms, Cheboygan County, 1939, 1948	81
13.	Retail Sales in Cheboygan County, 1947-1950	82

Table		Page
14.	Employment of the Labor Force in Cheboygan County, March, 1940-December, 1949	86
15.	Percentages for Groups in the Labor Force, 1940-1951	88
16.	Estimates of the Labor Force, 1950-1951, Showing Seasonal Fluctuations . .	89
17.	Percentages for Groups in the Labor Force, 1950-1951, Showing Seasonal Fluctuations	90
18.	Balance of Payments, Cheboygan County, 1940	97
19.	Annual Income for Cheboygan County, 1940-1950	101
20.	All Traffic Tallied by Direction Traveled in Two Four-hour Periods . . .	105
21.	Number of Out-of-state Passenger Automobiles Entering Cheboygan County from the South on U. S. No. 27 August 6 and 9, 1949	107
22.	Results of Automobile Traffic Survey in Cheboygan County, Michigan, August 6 and 9, 1949	109
23.	Rate of Representation of Autos and Passengers by Counties in the Traffic Sample	111
24.	Cheboygan County Equalized Valuations, Tax Levies, and Rates, 1900-1951	115
25.	Annual Per Capita Expenditures by Cheboygan County for Government Functions in 1951 Compared with Other Selected Counties in Michigan	117
26.	Per Cent of Total Costs of County Government Borne by State Aid in Cheboygan County, 1924-1951	118

Table		Page
27.	Area of Tax-reverted Lands in Cheboygan County Deeded to State by Auditor General, 1940-1952	120
28.	Classification of Cheboygan County Lands According to Use, 1938 and 1950	123
29.	Number of Farms and Farm Acreages in Cheboygan County, 1860-1950	124
30.	Number of Farms According to Size	127
31.	Farmland According to Use, 1930-1950	128
32.	Average Acreage Per Farm in Various Agricultural Uses, 1930, 1945, and 1950	130
33.	Farm Ownership and Tenancy, 1900-1950	133
34.	Acreage Requirements for Successful Farm Units on Two Soil Types, Cheboygan County	134
35.	Crop Production Per Acre on Emmet Sandy Loam and Onaway Loam	136
36.	Estimated Gross Income of 53 Farm Families in Cheboygan County, 1945	144
37.	Area, Volume, and Growth by Forest Types in Cheboygan County, 1938	149
38.	Area Burned in Cheboygan County by Five-year Periods, 1925-1951	155
39.	Fires of One Thousand Acres or Over in Cheboygan County Since 1925	157
40.	Causes of Forest Fires in Cheboygan County, Michigan	158
41.	Total Cumulative Area Listed under the Commercial Forest Reserve Act in Cheboygan County, 1930-1952	161
42.	Cabin Courts and Hotels, Cheboygan County, 1948	166

Table		Page
43.	Records for Overnight Establishments in Cheboygan, Michigan, 1937	166
44.	Number of Fishing Licenses Sold in Cheboygan County, 1948-1950	169
45.	Fishing Success in Cheboygan County, 1950	170
46.	Fish Plantings, 1945-1950	171
47.	Average Annual Expenditures by Hunters in Cheboygan County, 1938-1940	174
48.	Estimated Deer Hunting Records, Cheboygan County, 1931-1952	175
49.	Hunting and Trapping Licenses Sold in Cheboygan County, 1948-1950	177
50.	Uses of State Lands in Cheboygan County (1952)	180
51.	Acres of Forest Plantations on State Forest Lands in Cheboygan County	189
52.	Attendance at State Parks, Cheboygan County, 1940-1951	192
53.	Classification by Land Types of Lands Owned by the State of Michigan in Cheboygan County in 1938 and 1951, Lands Reverted in 1939, and Lands Sold by the State to Private Owners, 1936-1947	198
54.	Classification by Year of Deed to State and the Number of Years in State Ownership	226
55.	Sale Price Range for State Lands Purchased in Cheboygan County, 1936-1947 . .	232
56.	Average Purchase Price Per Acre for All Uses of Lands Sold in Cheboygan County, 1936-1947	233

Table		Page
57.	Average Selling Price Per Acre and Acreage Sold According to Year of Sale in Cheboygan County	235
58.	Acreage in Broad Cover Types	239
59.	Accessibility by Roads of 20,571 Acres Sold by the State to Private Owners	241
60.	Number of Parcels Fenced	243
61.	Number of Parcels with Buildings and Status of Occupancy	244
62.	Area of State Land Sold to Private Owners Classified According to Residence	245
63.	Lands Sold to Private Owners by the State Classified According to Use	249
64.	Number of Farms Per Farm Acreage Class According to the Percentage of Farm Area Purchased from the State of Michigan	267
65.	Out-of-county Ownership Classified According to Land Use	268
66.	Comparative Valuations and Taxes for 1937, 1945, and 1948 on the Lands Sold to Private Owners by the State of Michigan from 1936 to 1947 According to Land Use	271
67.	Acreage Transferred to Other Ownership in Cheboygan County by the State of Michigan, 1947-1952	273
68.	Use Areas Classified by Land Types	275
69.	Soils of Cheboygan County Classified According to Suitability for Agriculture	313

Table		Page
70.	Population of Cheboygan County in Census Years.	315
71.	Population of Cheboygan County by Townships, 1880-1950	316
72.	Manufacturing Statistics, Cheboygan County, 1889-1947	317
73.	Percentages of Total Retail Sales for 1949 by Months for Cheboygan County and the State of Michigan	318
74.	A Sampling of Taxation Values by Land Types, 1949	319
75.	Dairy Products Produced on Farms, 1920-1950	320
76.	Grain Production on Farms in Census Years	321
77.	Production of Hay, Potatoes, and Maple Products, 1880-1950	323
78.	Farm Products Sold, Cheboygan County, 1944, 1949	324
79.	Livestock on Farms in Census Years . . .	325
80.	Forest Products Produced on Farms, 1929, 1949	326
81.	Value of Forest Products Produced on Farms, 1869-1944	326
82.	Employees Working in Cheboygan County for the Conservation Department	327
83.	Composition of Schoenmann's Land Types by Soil Types	328

LIST OF ILLUSTRATIONS

Figure		Page
1.	Location of Cheboygan County	9
2.	Population of Cheboygan County, 1860-1950	47
3.	Distribution of the Male Populations by Age Groups in Cheboygan and Wayne Counties, 1950	49
4.	Population Trends in Four Townships in Cheboygan County According to Present Land Use	54
5.	Manufacturing Trends in Cheboygan County, 1889-1947	61
6.	Monthly Percentages of Total Retail Sales in Cheboygan County and State of Michigan, 1949	84
7.	Weekly Two-directional Traffic Flow on U. S. Route No. 27, Cheboygan County	106
8.	Counties of Registration for Autos in Sample	108
9.	Average 24 Hour Traffic Flow on the State Trunkline System, 1949	112
10.	Type of Farming Areas in Michigan	131
11.	State Lands in Cheboygan County, 1952 . .	179
12.	Area Owned by the State of Michigan in Cheboygan County, 1928-1952	203
13.	Lands Sold by the State to Private Owners	236

Figure		Page
14.	Land Purchased from the State and Used for Pasture	250
15.	A Load of Hardwood Logs on the Way to the Mill	251
16.	Mixed Pine and Hardwood Stand with Slash	252
17.	Aspen Stand Purchased from the State by Michigan Tax Title Service Bureau . .	255
18.	Modern Three-room Tourist Cabins on Route No. 27 Near Mullett Lake	257
19.	Hunting Cabin on Abandoned Farmland . .	258
20.	Abandoned Farmland Used for Hunting . .	259
21.	Grazed Farm Woodlot	260
22.	Land Purchased from the State Used for Crops	261
23.	Rural Residence Built on Land Purchased from the State	261
24.	Young Orchard on Land Purchased from the State (above). Processing Plant Which Produces Apple Juice for a Detroit Grocery Company (below). .	263
25.	Summer Cottage on Former State Land. . .	264

INTRODUCTION

This dissertation presents the results of a study of State and private rural lands in Cheboygan County, Michigan. The object is to point out the trends in land use and in the State and private ownership balance as affected by County socio-economic development and by the policies of the Michigan Department of Conservation in administering State properties. A broad description of the County and its people is presented, including social, economic, and political factors related to ownership and land use. Lands in State ownership dedicated to public uses are described according to quality and utilization. Special emphasis is placed on the uses and characteristics of lands sold by the State of Michigan to private owners in Cheboygan County from 1936 to 1947 in order to evaluate the effectiveness of the policies of the Michigan Department of Conservation in returning selected tax-reverted lands to private ownership.

The author became interested in land-use problems in Cheboygan County in 1939 while working as an undergraduate on the University of Michigan Biological Station Tract under the late Professor W. F. Ramsdell. He later studied tax-reverted lands in the County as the subject of the Master's thesis. When he returned for work toward the doctorate, there was continued interest in the County. At that time

the Michigan Department of Conservation wanted to obtain field information in sample counties which would provide some measure of the success of the policies and laws under which State lands are sold. In May, 1947, it was agreed that the author would survey Cheboygan County. The results are presented in the last section of this dissertation.

There are several reasons why Cheboygan County has been chosen frequently as a research area. First of all, it lies in the cut-over region of Michigan and has had critical problems typical of the northern counties. It is representative of those counties whose basic economy was built upon the white pine lumber industry during the last half of the nineteenth century. Also, the University of Michigan Biological Station located on Douglas Lake affords a convenient base of operations for conducting field research. The late Professor W. F. Ramsdell, George Willis Pack Professor of Forest Land Management, University of Michigan, was active in the management of forest lands of the large Biological Station tract, and directed extensive research throughout the County.

The future welfare of the people of Cheboygan County depends in great measure upon renewable natural resources. In the past the soils and forests in private ownership have been largely exploited or "mined" through destructive land-use practices which have seriously depleted them. The requirements for a future relatively free from

want include rebuilding these assets by land-use practices which seriously consider the essentials of conservation. At the same time the public must hold and manage the more unproductive lands which in the past have reverted periodically to State ownership.

Individual initiative stimulated by the desire for financial gain was responsible in the early days of our country for exploiting natural resources in private ownership. To encourage settlement and the development of new territory, the federal and state governments almost uniformly followed the policy of disposing of tremendous areas of forest land (Dana, 1918; Robbins, 1951). In this manner the bulk of the public domain was turned over to thousands of private owners.

As a young state, Michigan received about 12 million acres of land from the federal government under the swamp-land grants, the grants for internal improvements, and those for education. The majority of these lands were soon sold to private owners with no restrictions as to use.

Tax-delinquent lands first began to flow into State ownership in Michigan following the Act of 1869, the first comprehensive law for the assessment of real property and the forfeiture of title in the event of non-payment of taxes. Before the depression of 1893, delinquency had reached enormous proportions. The Tax Homestead Law enacted at that time provided a means for disposing of the large

acreages of land reverted to State ownership. The policy of the Land Office was to get the land back into private ownership as soon as possible to increase the tax base. Timber scavengers and land speculators operated freely and profitably so that the lands were stripped of all residual timber and the delinquency cycle was perpetuated (Titus, 1945).

A step in the right direction was made by the State Legislature in 1899 when it authorized the establishment of a State Forestry Commission and dedicated certain tax-delinquent lands as forest reserves. Then in 1909 the Public Domain Commission was established, and to it was given the problem of administering Michigan's tax-reverted lands (Titus, 1945).

Land use is almost inseparably linked to ownership. Our national existence does not depend in great measure on the present income from publicly owned lands. Where the public holds the deed to the land, a low rate of return is expected. In fact, where public lands are managed for recreation or watershed protection under the providential functions of government, it is difficult to compute a return. Government has a comparatively long existence and is usually financially able to employ trained technicians to manage its lands. Under such ownership, constructive land-use practices can be put into effect and the advantages of sustained-yield production and protection of renewable

resources accrue to the people (Amer. Soc. of Planning Officials, 1942).

Conversely, lands in private ownership must provide a return sufficient to pay taxes and supply the owner with an acceptable standard of living. In periods of depression marginal lands return a relatively lower income. If taxes remain the same, operators are forced to work the land more intensively. This leads to accelerated deterioration of the soil. Therefore, depressions intensify existing maladjustments in land use and push marginal uses into the "submarginal" category (Mich. State Planning Comn., 1943).

During the depression of the 1930's the tax moratoria withheld much land from reversion in the years 1933 to 1938 (Barlowe, 1951; Stace, 1940). At the end of the allowable redemption period in 1939, however, more than 75,000 acres in Cheboygan County were not redeemed by the payment of delinquent taxes and were deeded to the State.

The Tax Homestead Law was repealed in 1935. This was a step forward because the lands reverting to the State are generally of poor quality and incapable of supporting agriculture and producing a satisfactory standard of living. Even with careful selection of lands and applicants, a high percentage of homesteads did not succeed in the State (Mich. Dept. Conserv., 1936).

Since 1940 the land-ownership pattern has been more stable than at any other period. There has been little delinquency in Cheboygan County during the years of war-time

prosperity. Also, the 15-mill tax limitation and the proportionate decrease in land taxes in the total tax burden have helped reduce delinquency to an insignificant amount. Another reason for this stability is the fact that the State now owns the preponderance of the low grades of land in the County and has dedicated them to State forests primarily.

The Michigan Department of Conservation is now charged with the administration of all State lands lying in the 47 northern counties of Michigan. More than 80 per cent of this ownership, or about 3,350,000 acres is tax-reverted. All such lands deeded to the State are now carefully studied and classified by the Lands Division before a decision is made as to their disposition and use (Mich. Dept. Conserv., 1950). If they lie inside the boundaries of State project areas or are located so that they can be incorporated into dedicated areas, they are retained in public ownership. They may be exchanged with private owners or the federal government for lands inside state-dedicated areas. If they cannot be used for public purposes, they may be sold at auction upon application by private owners or sold later over the counter.

In the past decade approximately 42 per cent of the lands reverting to State jurisdiction in the northern counties have been disposed of by sale or exchange. Those lands retained in public ownership are managed for the production of forests and wildlife and for the enhancement of recreational values.

The cycle has been completed from the original public domain through private exploitation, abandonment, and reversion to State control. It may now be possible to correct some of the mistakes of the past and prepare for the more orderly and rational development of land resources for the future with an eye to permanent and unimpaired productivity.

The next four sections of this dissertation describe the physical, social, economic, and political factors of Cheboygan County which form a broad background for a presentation of the current status of tax-reverted lands now in State ownership and of privately owned lands in the County. In the sixth section the lands retained in State ownership are described according to method of acquisition, quality, administration, and present use. In the seventh section the lands sold to private owners between January 1, 1936, and May 1, 1947, by the Michigan Department of Conservation are described by their distribution in the County, their quality, present use, and the character of their ownership. The last section is devoted to a summary and conclusions.

NATURAL FEATURES

Geography

Cheboygan County lies in the most northerly part of the Lower Peninsula of Michigan. On the north it is bounded by the Straits of Mackinac and Lake Huron, on the east by Presque Isle County, on the south by Otsego and Montmorency Counties, and on the west by Emmet and Charlevoix Counties (see Fig. 1). From an ecological viewpoint the County is in the transition zone between the central deciduous and the northern coniferous forest types.

The total area of the County is 803 square miles comprising 725 square miles of land area, or 464,000 acres, and 78 square miles of water area. There are four State parks in the County including Burt Lake State Park located at the south end of Burt Lake near the town of Indian River on U.S. Route No. 27, Aloha State Park on the eastern shore of Mullett Lake, and Michilimackinac State Park at Mackinaw City, the site of old Fort Michilimackinac now restored. The newly established Poe Reef State Park, located on the Lake Huron shore in the northeastern part of the County, is to be developed as a camping site. Approximately 38 per cent of the County belongs to the State of Michigan and is included principally in the Black Lake and Hardwood State Forests.



Fig. 1.-- Location of Cheboygan County

Where the Cheboygan River empties into the Straits of Mackinac, the first settlement in the County was started in 1844. Its name was derived from an Indian word, Cha-boia-gan, meaning "place of entrance" (Foster et al., 1939). The present City of Cheboygan is the County seat and largest trading center.[1]

Mackinaw City, at the northwestern tip of the County, is the focal point of three federal highway routes, U.S. Nos. 23, 27, and 31. From here the Michigan state ferries leave for the trip across the Straits of Mackinac to St. Ignace in the Upper Peninsula.

Geology and Topography

Cheboygan County is part of the eastern lake section of the glaciated area of the Central Lowland. The County is essentially a plain on which the glaciers have deposited both ice-laid and water-laid materials. The morphology of the land surface is relatively young, since the glacial materials were deposited by the late Wisconsin glacier. The lithological character of these deposits bears a close relationship to the old, underlying geological formations. Although they contain a considerable admixture of detritus from Canada, the drift is largely from local sources. The large quantity of limestone gravel and boulders is aligned in conformity

---

[1]For clarity, the urban community will hereafter be referred to as the "City of Cheboygan," and the County as "Cheboygan County" or "the County."

with the direction of the ice movement. The surface formations consist of moraines, outwash plains, and till plains. The old lake beds of former glacial lakes and the old shore lines, principally of Nipissing and Algonquin stages, complete the topographic forms present. The streams have not yet had time to develop complete dendritic patterns (Foster et al., 1939).

Glacial depositions are underlain by paleozoic sedimentary rocks. The bedrock contours cross the County in bands aligned in an east-west direction. Two rather narrow bands in the southern part of the County are Coldwater shale and Antrim shale. North of this a substratum of Traverse formation underlies more than half the County. Along the northern shoreline are two narrow belts, one of Dundee limestone and the more northerly one of Monroe formation overlying Sylvania sandstone (Leverett, 1917).

The Wisconsin glacier laid down material in Cheboygan County which formed a plain. However, post-glacial action has dissected this plain causing local surface irregularities. The northern and northeastern parts of the County are quite level with broad, flat, poorly-drained areas and old sandy lake beds pierced here and there by morainic hills. This northern lowland has an elevation of 600 to 800 feet above sea level.

The southern two-thirds of the County is rolling to hilly. The more extreme southern portion is a high plain cut

through by glacial valleys containing lakes, streams, and swamps. The elevation here ranges from 800 to 1,200 feet above sea level (Foster et al., 1939).

Water Resources

Cheboygan County has 78 square miles of inland lake area which is 9.7 per cent of the total County area. Black, Mullett, and Burt Lakes comprise approximately 72 square miles of water area and constitute a highly valuable recreational resource. Burt Lake is the largest of the three with about 32 square miles of water area and Black Lake the smallest with approximately 15 square miles. In addition Douglas Lake has approximately 5 square miles of area, and 21 smaller lakes vary from $\frac{1}{4}$ to 1 square mile in size.

Three tributary river systems of the County are the Black, Pigeon, and Sturgeon Rivers whose waters eventually flow into the Cheboygan River and thence into the Straits of Mackinac. All of these arise to the south of the County and flow northward into Black, Mullett, and Burt Lakes, respectively, after draining the southern part of the County. These streams flow fairly rapidly, are from 15 to 30 feet in width, and are good trout waters.

Burt Lake is drained at its southeastern corner by Indian River which flows northward about 4 miles into the southern end of Mullett Lake. Mullett Lake is drained at its northern end by the Cheboygan River. The Upper Black River flows into Black Lake which is drained by Lower Black

River. The latter flows northwesterly into the Cheboygan River which empties into the Straits of Mackinac at the City of Cheboygan. Thus, almost the entire County is drained by the three main tributaries of the Cheboygan River. In the logging era the lumber mills on the lower course of the Cheboygan River could receive logs floated down-stream from the areas drained by the three tributaries and from the shores of four large lakes (including Douglas Lake) which have a combined shoreline of approximately 80 miles.

Climate

The Climate of Cheboygan County is characterized by short, cool summers, mild autumns, long, cold winters, and late, cold springs. The winters normally bring sub-zero temperatures and heavy snowfalls. The summer days are usually clear and often quite warm, although the nights are generally cool. Precipitation is moderate and well distributed throughout the year with a recent 20-year mean of 26.31 inches (see Table 1). Freezing temperatures have been recorded for all months of the year except July and August. The wind blows predominantly from the northwest during all months except September, October, and December, when it comes from the southwest. The climate is ameliorated by the influence of Lake Michigan, Lake Huron, and the large inland lakes.

Hail storms, sleet storms, and destructive winds are very rare and extended droughts seldom occur. The rainfall is usually adequate for all the crops grown and generally is

TABLE 1

NORMAL MONTHLY, SEASONAL, AND ANNUAL TEMPERATURE AND PRECIPITATION AT CHEBOYGAN, CHEBOYGAN COUNTY, MICHIGAN[a]

Month	Temperature			Precipitation			
	Mean	Absolute Maximum	Absolute Minimum	Mean	Total Amount for the Driest Year (1905)	Total Amount for the Wettest Year (1900)	Snow, Average Depth
	°F.			Inches			
December	24.2	57	-18	1.64	1.80	0.80	14.3
January	18.8	59	-26	1.37	1.50	.80	14.8
February	16.8	59	-38	1.14	.80	1.45	13.7
Winter	19.9	59	-38	4.15	4.10	3.05	42.8
March	26.3	76	-22	1.37	1.95	1.40	3.5
April	40.3	90	-6	1.72	.50	3.15	2.0
May	51.2	92	17	2.92	2.86	1.15	.6
Spring	39.3	92	-22	6.01	5.31	5.70	6.1
June	61.1	96	28	2.72	2.46	4.08	0
July	67.5	101	33	2.57	2.73	7.93	0
August	65.3	100	35	2.77	1.46	7.33	0
Summer	64.6	101	28	8.06	6.65	19.34	0
September	59.5	97	25	3.00	1.23	8.43	(b)
October	48.0	89	15	2.78	.50	3.48	.3
November	35.2	73	-6	2.31	1.55	2.95	7.7
Fall	47.6	97	-6	8.09	3.28	14.86	8.0
Year	42.9	101	-38	26.31	19.34	42.95	56.9

[a]Recorded by the United States Weather Bureau Station at Cheboygan, Michigan.

[b]Trace

heaviest during the growing season. The average annual snowfall is about 57 inches. The frost-free season usually lasts from early June to the middle of September, although frosts have been recorded as late as June 15th and as early as September 10th. The average number of frost-free days during the growing season is 134 at the City of Cheboygan. The number varies from 140 in the extreme northern part of the County, where the climate is moderated by the Straits of Mackinac, to about 116 days in the south-central part, where the altitude is greater and the influence of the lakes is less. These differences in the length of the growing season limit the commercial production of apples and the cultivation of corn for grain to the northern and central parts of the County (Foster et al., 1939).

Soils

Cheboygan County lies within the podzol soil region of North-central United States. The many different soils in the County are the result of glaciation and the attendant differences in parent materials, drainage conditions, relief, and native vegetation, all of which are important factors in the development of soils. They are characterized generally by a layer of forest litter and humus, a gray or leached surface layer, and a brown layer of accumulation. Soluble mineral matter, especially carbonates, has been leached from the upper layers (Foster et al., 1939).

Two broad groups of soils occur in Cheboygan County: (1) the mineral soils developed from glacial material under various moisture conditions and differences in vegetation, and (2) the organic soils composed of vegetable material in various states of decomposition which have accumulated on flats, in depressions and valleys, and on seepage slopes. The mineral soils range from those low in organic matter, with sandy surface soils and open porous subsoils, leached of mineral matter and excessively drained, to those moderately high in organic matter, with loam or silty clay loam surface soils underlain by clay, sandy clay, or limestone bedrock. Leaching of mineral matter has not progressed very far in these heavier soils, and the moisture content is more favorable to plant growth. The poorly drained mineral soils contain more organic matter and are not so highly leached of mineral matter, given the same parent material, as are the normally moist soils.

The organic soils are represented by a number of soil types which exhibit a considerable range of chemical and physical properties. Practically all contain 75 per cent or more of combustible matter. In the most acid and peatty type, such as Greenwood peat, very little alteration of the original vegetable matter has taken place, although the fluctuation of the water table is much greater than in the more woody and less acid Rifle peat.

The greater number of organic soil types range from slightly to very strongly acid. In general, the most acid

organic soils are associated with sands, and the least acid ones with calcareous rocks and glacial deposits. However, in a number of places acidity seems to be due to the height of the water table, stagnation, or slow movement of drainage water, and the kind of plant remains, since the adjacent soils and drift may be limy and the drainage water alkaline.

The diversity of the soil types and their intimate association in many places in small bodies are traceable to the lithological heterogeneity of the parent soil material and to the difference in thickness of comparatively pervious material overlying relatively impervious clay or impenetrable bedrock. This situation results in a wide range of moisture conditions and a diversity of topographic expression on Pleistocene formations such as moraines, outwash plains, till plains, lake beds, and old shore lines.

The soils of Cheboygan County may be divided into three groups on the basis of their adaptability for use: (1) soils well suited to farming, (2) soils less well suited to farming, and (3) soils and miscellaneous land types generally not suited to farming. The first group, comprising 7.4 per cent of the County by area, includes soils having natural fertility, favorable relief, and good or fair moisture content. They are underlain by sandy clay, silty or heavy clay material, or limestone bedrock. Most of them are alkaline or only slightly alkaline in reaction and are well-drained. The Onaway, Emmet, and Bohemian soils are adapted

to a wide range of crops including hay, small grains, potatoes, corn, and alfalfa. Dairying, with potatoes as a cash crop, is practical in areas where these soils predominate. On the heavier Selkirk and Nester soils crops are restricted to hay, small grains, and grasses. More beef cattle can be raised profitably in areas where these soils are extensive.

The soils of the second group, 31.9 per cent by area, are less well suited to farming. They have medium natural fertility, variable relief and drainage conditions, and their utilization depends on their location with relation to the soils of the other two groups. In general they are not capable of sustaining self-sufficient farms but are cultivated in part where associated with soils of the first group and are used for forest and recreational purposes where interspersed with soils of the third group. They are divided into two subgroups: (1) medium-textured soils of the hardwood uplands and plains, including Emmet sandy loam and its gravelly phase; Detour stony loam; Alpena cobbly loam; Roselawn sandy loam and its gravelly phase; Antrim sandy loam; and Summerville stony loam; and (2) imperfectly and poorly-drained upland soils, including medium-textured members of the Ogemaw, Iosco, Brimley, Munuscong, Ruse, Bruce, and Bergland series.

Soils of the third group generally are not suited to farming. They account for 60.7 per cent of the County area

and are recommended for forestry, not because they will produce better trees (in fact they will not) but because low natural fertility, poor or excessive drainage, or unfavorable relief make them unsuitable for agriculture. Probably their best utilization is for the production of wood and for related uses such as recreation, game refuges, feeding grounds for game, and hunting preserves.

They are divided into six subgroups: (1) loamy sands of the hardwood uplands and plains, including Emmet loamy sand and its gravelly phase, Porcupine gravelly sandy loam, Kalkaska loamy sand, and Kalkaska gravelly loamy sand; (2) dry sands of the pine uplands and plains, including Roselawn sand and its gravelly phase, Wallace fine sand, Weare fine sand, Rubicon sand and its gravelly phase, and Grayling sand; (3) poorly drained and wet sandy soils, including sands of the Saugatuck, Newton, and Granby series; (4) alluvial soils, including Griffin sandy loam, Griffin loam, and Kerston muck; (5) organic soils, including Lupton, Houghton, and Edwards mucks, and Rifle, Spalding, and Greenwood peats; and (6) miscellaneous soils and land types, including Eastport sand and its gravelly phase, marl, coastal beach, made land, quarries and pits (Foster et al., 1939).

Forest Cover

Before Cheboygan County was logged, a dense forest covered the land, with the exception of the bogs and marshes which supported a marsh grass, sedge, or shrub type of

vegetation. This original forest was composed of four distinct types which are poorly represented in the County today. The hardwood forest, the climax type on the more fertile upland soils, consisted of sugar maple (Acer saccharum), beach (Fagus grandifolia), yellow birch (Betula lutea), elm (Ulmus americana), basswood (Tilia americana), and hemlock (Tsuga canadensis). The hemlock is considered a relict of the present more northerly pine-hemlock association preferring the cool moist sites.

The pine type grew on the sandy soils. The white pine (Pinus strobus) was originally the predominant pine species and furnished the lumber industry with valuable raw material. This lumber was in great demand in the fertile prairie states during the rapid expansion of agriculture in the last half of the 19th century. The red pine or Norway pine (Pinus resinosa) is now more predominant in the County because it is more aggressive on the sandy soils that were robbed of their organic matter by the fires that followed logging.

The swamp soils supported stands of either swamp conifers, swamp hardwoods, or a mixture of the two types. The swamp-coniferous forest consisted of white cedar (Thuja occidentalis), black spruce (Picea mariana), white spruce (Picea glauca), balsam fir (Abies balsamea), and tamarack (Larix laricina). In those peat bogs where the mat has become grounded, black spruce and larch often grow, but their growth is very slow and the wood is usually not merchantable. Many

of these unproductive swamps are now in much the same condition as before the lumbering days because they were too wet to be burned by the fires that followed logging.

The fourth forest type, the hardwood-coniferous forest, consisted of a mixture of beech, elm, basswood, spruce, balsam fir, and cedar. It occurred on the heavier soils that are moist and cool.

The original forest has been entirely logged with the exception of a small area here and there. One of the last virgin hardwood areas in the northern part of the Lower Peninsula was logged in 1947 near Colonial Point on the west side of Burt Lake.

Most of the County was burned over several times during logging days by slash fires which destroyed most of the tree reproduction and the immature trees. Much of the humus layer on the surface of the mineral soil was also destroyed. Burned areas in this region are soon taken over by the fireweed association characterized by Epilobium angustifolium and Erigeron canadensis. As the fireweeds become less vigorous and reduced in height, aspen species (Populus tremuloides and P. grandidentata) gain dominance. A single severe burn in a coniferous forest is enough to permit the aspens to get a start. However, this is not true in the hardwood association because the sprouts from hardwood species grow so rapidly that they soon overtop any aspen seedlings that may become established. Eventually the pine species, which are somewhat tolerant in

their early years, succeed the aspen on the lighter soils if fires are kept out. If an aspen area is burned, sprouts and suckers soon cover the site. Conifers, on the other hand, do not sprout and must be seeded naturally or planted.

Most of the cut-over land has been burned one or more times. On the recently or most severely burned hardwood sites, aspen, red maple (Acer rubrum), and pin cherry (Prunus pennsylvanica) are the most abundant species in the second growth. On the older or less severely burned hardwood sites, however, an association of hard maple, red maple, elm, beech, and basswood, with a variable quantity of aspen is more common. The former pine forests are now occupied by clumps or open stands of jack pine (Pinus banksiana) mixed with scrubby aspen and red oak (Quercus borealis) sprouts on the poorer land and a more thrifty second growth of aspen, white pine, and red pine on the better land. Most of the areas of swamp forest have been less severely burned since the virgin timber was cut. Here the present cover is a mixture of white cedar, spruce, balsam fir, and tamarack, with various quantities of aspen, balm-of-Gilead (Populus balsamifera), slippery elm (Ulmus fulva), and black ash (Fraxinus nigra).

The original forest cover can be estimated according to forest types by grouping the soil types on which each forest type grew formerly according to the description contained in the Soil Survey report by Foster et al. (1939). Table 2 presents an estimate of the area occupied by each

TABLE 2

AREA OF ORIGINAL FOREST TYPES*

Forest Type	Acres	Per Cent
Upland hardwood	180,288	38.6
Pine (white and red)	85,312	18.4
Swamp coniferous-lowland hardwood	82,112	17.8
Upland hardwood-coniferous	56,768	12.4
Swamp coniferous	50,880	11.0
Non-productive land	8,640	1.8
Total	464,000	100.0

*Estimated by grouping areas of soil types according to the type of forest they originally supported as determined from Soil Survey by Foster et al. (1939).

virgin-forest type.[1] Upland hardwood and hardwood-coniferous types comprised almost 51 per cent of all forest types. Swamp types accounted for about 29 per cent and the pine type 18 per cent of the original forest types.

Wildlife

Game birds and animals are an economically important resource both from the standpoint of hunting and esthetic values in areas dependent in part upon recreation for local income. An abundance of big game in the woods means dollars

[1]Present forest cover is tabulated and described in the section on forestry.

in the hands of those entrepreneurs who sell goods and services to hunters.

The most important large game animal in Cheboygan County is the whitetail deer. Its numbers have increased considerably since the lumbering era because of controlled hunting and the increased food supply provided by extensive forest-edge conditions existing after logging (Bartlett, 1949). A recent estimate of the population of deer in the County is approximately 15,670 or an average of 21.6 per square mile.[1] The larger proportion of the herd is found in the southern half of the County where there are fewer farms and more extensive areas of State forest lands. This part of the County consequently receives the bulk of the out-of-county hunters. Here also are large acreages of cedar swamps used for wintering yards. However, the area of heaviest deer population is moving slowly north and west. The total area of deer yards in the County is 76,040 acres, or 16½ per cent of the total County area. More than 53 per cent of the yard area, or 40,560 acres, is in private ownership.

In the southeastern section of the County is a herd of 300 to 500 elk (Stephenson, 1933). The animals were transplanted to the area in 1935. They are protected by a closed hunting season and are objects of interest to those visitors fortunate enough to catch sight of them. Their numbers have

---

[1]More detailed records and a discussion of the economic value of wildlife to the County are given in the section on recreation.

increased considerably since their introduction. There is a critical overbrowsed condition on the area for which the heavy deer population is responsible. The elk can feed at a higher level than the deer and thus offer serious competition to the latter. On this range in the past 20 years there has been little reproduction of tree species on which deer feed.

There are a few bears in the County but not enough to be an important tourist or hunter attraction. The hunting season is open usually two weeks in the late fall. A few red foxes and bobcats are taken but badgers and coyotes are relatively scarce. Records indicate a substantial decrease from 1943 to 1948 in all these species.

Of the small game animals, the snowshoe hare is the most important as to numbers killed. It is also hunted by more local residents than any other small game animal. The snowshoe hare is therefore a rather important source of food and recreation for local people. The cottontail rabbit is present in only one-tenth the population of its northern cousin, judging from the kill record.

The ruffed grouse is second in importance to the snowshoe hare as a small game species. The sharptail grouse is relatively scarce in the County.

Other animals include the woodchuck, fox squirrel, red squirrel, skunk, weasel, and opossum. The muskrat, raccoon, and mink are the principal fur-bearers trapped. The

muskrat is the most numerous species trapped; about 3,000 animals are taken yearly. The raccoon and opossum are relatively scarce in the County.[1]

Cheboygan County has approximately 420 miles of streams that are kept stocked with fish by the Michigan Department of Conservation (Brown, 1944). The three largest lakes, Black, Burt, and Mullett, draw thousands of fishermen every season who fish for wall-eyed pike, great northern pike, bass, trout, and panfish. Since the beginning of an open winter season on sturgeon a few years ago, spearing of this species through the ice on the large inland lakes has brought an increasing number of winter sportsmen to the County. The sturgeon attains a length of 6 feet or more and a weight of more than 150 pounds. Local residents on the western shore of Mullett Lake report that schools of sturgeon cause small waves to ripple on the beaches in the spring of the year.

Minerals

Cheboygan County at present has no economically important minerals, according to State exploration records. Geological structure precludes the possibility of oil (Smith, 1914). Limestone has been quarried on a small scale in several locations in the County, but there have been no active operations for over a decade. In the southern part of the County are beds of Antrim shale of the Upper Devonian

---

[1] Information about wildlife species was obtained from the records of the Michigan Department of Conservation, Game Division.

period containing dolomite which could be used in the manufacture of cement, bricks, and tile. According to geological reports there are salt (NaCl) deposits running up to 1,200 feet in thickness in the Saline formation in the southern part of the County. However, the depth of the overburden is not known for either the dolomite or salt and therefore economic exploitation has not been attempted.[1]

---

[1]Information was obtained from the Michigan Department of Conservation, Geological Survey Division.

HISTORICAL DEVELOPMENT

Presettlement Period

The Ottawa Indians inhabited the area that is now Cheboygan County prior to the coming of the white man (Chase, 1922). In 1640 Jean Nicolet, acting upon the orders of Champlain, Governor of Canada, started a journey to the west to visit the "Men of the Salt Water," the Winnebago Indians, in the Green Bay region of Wisconsin. The French governor believed that the long-sought passage to India might be discovered by communicating with these Indians (Fuller, 1938). If early Norsemen did not penetrate to the Great Lakes region, then Nicolet was probably the first white man to look upon the country south of the Straits of Mackinac, much of which is now Cheboygan County.

Among the famous persons who later visited the area was Marquette, the missionary-explorer, who in 1670 came to Michilimackinac (a name given to the Straits area at that time). Other historic names associated with the early French regime in the region are LaSalle, the explorer, and Perrot, the interpreter-trader (Fuller, 1938).

For more than two centuries the fur trade held sway in the Great Lakes region. It was initiated by the unlicensed coureurs de bois of the French regime and was developed by the licensed traders. The French were succeeded by the English, who were in turn displaced by the Americans.

The fur trade began in this area about 1659 when two French traders, Radisson and Groseilliers penetrated the area, bought furs from the Indians, and returned with them to Montreal in 1660. Their tales of the abundance of fur-bearing animals in the region brought trappers followed by Jesuit missionaries, who were anxious to Christianize the redmen. The French cultivated the friendship of the Indians and gradually extended military control to include the Straits area and thus discouraged early penetration by the British.

Fort Michilimackinac was built on the south side of the Straits sometime between 1714 and 1716. It was located on the Straits shore just across the present western boundary of Cheboygan County where the replica of the old fort now stands. Here the Indians brought their furs to barter with the French traders. Later the fort was a collecting point for furs brought in from outlying posts to the west and southwest (Fuller, 1938).

In 1784, more than 4,000 packs of furs were shipped from the Michilimackinac post and its dependencies. In 1796, 99 packs contained "5 bears, 5 pound beaver, 10 fishers, 58 cats, 74 doe, 78 foxes, 108 wolves, 117 otters, 183 minks, 557 bucks, 1,231 deer, 1,340 muskrats, and 5,587 raccoons." This tally presents a low percentage of beaver pelts, generally the most important fur of the region, for in 1798 about 58 per cent of the pelts taken in the Great Lakes area were beaver (Johnson, 1919).

The English took over the French forts on the Great Lakes, including Michilimackinac, in 1760 after the fall of Quebec and Montreal. English military control allowed the English fur traders to operate in the region, although the Indians were somewhat inimical to them. The insurrection of Pontiac made British occupation difficult until the Treaty of 1764 provided for the regarrisoning of the western forts. Fort Michilimackinac continued to be an English trading center for 17 years. After the purchase of Mackinac Island by the British from the Indians in 1781, the fort was removed from the south side of the Straits to the Island where it remained throughout the Indian wars. The trading post, Old Mackinaw, was then deserted for almost half a century before the Americans made a permanent settlement there.

No doubt the early French and English fur traders and trappers traveled the Cheboygan River to gain access to the three large inland lakes and the river systems emptying into them. Following the Revolutionary War, the fur trade was developed to its peak under the Americans who assumed military control in 1796, although English policy and personnel were active for a long time afterwards. John Jacob Astor was without doubt the most aggressive trader of them all, judging by the wealth he amassed while engaged in the fur industry. Under the American regime the fur-bearing animal populations were seriously depleted, but it was not until the settler and lumberman deprived the Indian of his hunting ground that the fur-trading era ended (Johnson, 1919).

The region in which Cheboygan County is located was obtained through a treaty with the Indians in 1836. A legislative act in 1840 provided for dividing the northern part of the Lower Peninsula into unorganized counties. In the same year two surveyors, Burt and Mullett, whose names are given to the two largest inland lakes, came to survey the County. The area was organized as a township in 1849 after the beginning of the lumber industry had made the area near the mouth of the Cheboygan River important. The legislature approved a bill to organize the County in 1853, although the local government was not set up until the election of 1855 (Fuller, 1938).

Settlement Period

Lumbering

White pine lumbering began before 1850 in Cheboygan County. It developed rather slowly until 1870 and then reached peak production in the decade from 1890 to 1900. The first sawmill in Cheboygan County was built in 1846 by A. R. McLoud, who came from New York State with a number of men and erected a water sawmill on the Cheboygan River near its mouth. In the fall of that year he shipped 500,000 board feet of lumber to Chicago on his own schooner. A steam sawmill with one upright saw and an edger was built in the same area in 1847 and the two mills cut 1,000,000 board feet the following year.

By 1871 there were five large sawmills and three shingle mills in the County, principally in or near the Town

of Cheboygan. Most of the logs cut in the County were floated down the inland water system to the mills near the mouth of the Cheboygan River.

The dredging of the channel of the Cheboygan River in 1870 helped to accommodate the lumber schooners which carried the pine lumber to southern ports on the Great Lakes, principally Chicago and Buffalo, for distribution in the period of agricultural expansion. As many as 20 lumber schooners were seen loading simultaneously at the mile-long docks where the lumber was piled 25 feet high on either side of the river, so that sailing up the river was like traveling through a canyon (Gibson, 1944).

By 1890 there were nine sawmills and two shingle mills in the City of Cheboygan. At this time 90 per cent of all manufactured products in Cheboygan County were made from wood and the annual production of the mills was more than 100,000,000 board feet of lumber and millions of laths and shingles. The year of peak lumber production in the County was 1896 when the 16 mills sawed 200,000,000 board feet. About one-fifth of this volume, or 40,000,000 board feet of logs, was rafted from Canada. That year saw the beginning of the decline in lumber production and the end of the 23-year slump in the general price level. White pine lumber increased in price 4.85 per cent per year from 1897 to 1913, a higher rate of increase than for most commodities. The improved price, however, was offset in Cheboygan County by the tariff

and subsequent embargo on Canadian timber, which slowed and later stopped the rafting of logs to Cheboygan (Gibson, 1944).

The total annual lumber production in Cheboygan County from 1846 through 1896 is shown in Table 3.

After 1900, mills were accepting crooked, rotted, and sunken logs, and industries utilizing small logs and material formerly wasted or burned were going into operation. When the white pine was gone, other species were utilized. The hemlock logs stripped of their bark for the tanning industry began to

TABLE 3

LUMBER PRODUCTION IN CHEBOYGAN COUNTY, 1846-1896[a]

Year	Thousand Board Feet
1846	500
1847-1853	1,000[b]
1854	2,500
1855	3,300
1856-1866	3,000[b]
1867	4,000
1868	8,000
1869	12,000
1870	16,000
1871	20,000
1872	35,000
1890	100,000
1896	200,000

[a]Source: Robinson, George, and Sprague, R. A., A History of Cheboygan and Mackinac Counties, 1873, Cheboygan, Michigan.

[b]Average per year.

have value as sawed lumber. Several stave mills in the County were using large amounts of elm. The farmers cut cedar and hemlock ties and cedar poles, posts, and paving blocks during the winter and other slack times.

More than 51 per cent of the lands of Cheboygan County produced hardwood growth (see Table 2). Logs of maple, birch, beech, and oak could not be driven in the streams as was the white pine. Therefore, relatively small mills were set up throughout the County to produce hardwood timber. This industry operated into the 1920's.

Agriculture

In 1846 the first farm in the County was established four miles up the Cheboygan River. By 1850 there were six farm clearings in the County, all of them along the river within six miles of its mouth. Since settlers came into the area by water transportation, settlement was begun in the northern portion of the County and progressed southward. The lumber schooners coming to Cheboygan brought settlers, livestock, implements, and supplies, and left with lumber, shingles, and laths (Fuller, 1938).

In 1860 land devoted to agriculture comprised 0.6 per cent of the County area, or 2,933 acres, in 30 farms. They averaged almost 100 acres in size, although 21 were 20 acres or less. They were located primarily on the flat lands south of the Village of Cheboygan and along the Cheboygan River to Mullett Lake. About 20 per cent of the farm area was improved.

Agriculture did not advance much from 1860 to 1870. In that decade one new farm appeared and about 500 acres were added to farm ownerships. Between 1870 and 1880, however, the number of farms increased from 31 to 343. In the decade before 1890 the number doubled and the average farmer owned 80 acres of land, about 35 per cent of which was improved. Two out of five farms in 1890 were smaller than 50 acres. Although most farmers owned their lands, they were having to work desperately to make a living until they could get the stumps pulled and the brush cut. On the average there were less than two milk cows per farm and hardly one farmer out of two had a team of horses.

During the time the timber was being removed from the land, people generally believed the plow would follow the axe. There seemed to be little thought about the type of soil required for sustained agriculture. Evidently the pioneers reasoned that since the soil had grown timber it would also grow farm crops. George Robinson and R. A. Sprague wrote in their "History of Cheboygan and Mackinac Counties" in 1873:

> The lands of Cheboygan County are all heavily timbered with hardwood and pine and well watered. The soil is mostly clay, and has proven very productive. In almost every portion of the county settlements have been made, and handsome and valuable farms may be seen. The products of these lands so far have been as great as any of the other counties of the state, and for wheat there is no better locality in the Union. The farmers have raised upwards of 40 bushels to the acre, and for all other crops the results have been as equally conclusive. There are yet many valuable tracts of lands belonging to the government and to private parties and are selling at reasonable prices.

These statements must have been written to attract more settlers to the County. Although the authors mentioned the nature of the soil, they either did not know its actual composition in all parts of the County or they intentionally misrepresented it.

After the timber was removed, all too often the farmer in buying agricultural land gave little consideration to soil texture, topography, and distance from market. Many of those who remained in the County when the saw mills closed bought land for farming purposes and looked forward to having productive fields. They expected that crops would provide enough income for taxes to keep the roads and schools in operation and allow a modest living. The men still employed in logging and lumbering began to settle in the pine slashings where they could grow crops in the summer to supplement their wages from woods work in winter. Crops were usually good the first few years, except when frost or cutworms ruined the harvest (Titus, 1945).

Some farming was attempted on open plains, where prehistoric fires had eliminated forest cover, or on old Indian fields. However, many of the plains were sandy and provided good crop growth for only a few years after the sod was broken. Since the soils are generally acid, leaching depleted the small amount of nutrient held in the upper horizons.

Many pioneers who first settled on the lean, droughty soils soon realized their mistake and moved on to better

soils in the early days before the supply of good land was exhausted. Later some of them were fortunate enough to afford a move to better land in the states farther west. However, those who were tied to the poor soils through lack of financial resources in difficult times had to depend to some extent on charity, meagre as it was in those early days.

As lumbering declined markedly, some men with families who had always found work in the woods, at least during the logging season, had to turn their full effort to making a living from the land. The logging of the hardwoods provided work to sustain these families on a marginal subsistence standard for a time. However, crop failures and later unemployment caused some to give up in despair. Many cabins were abandoned to decay and the fields grew up to fire cherry, aspen, and scrub oak (Titus, 1945).

Agricultural success in some sections brought more farmers to the County. The westward movement in the United States was still going on in 1900, and population was doubling and tripling in some areas causing a great demand for food production. The decade 1890 to 1900 saw an increase of almost 400 farms in Cheboygan County. By 1910 the number had risen to almost 1,500, the peak for all time. This increase correlates directly with the upswing in the general price level in 1897 which terminated a 23-year economic slump.

The far-thinking people of Cheboygan County, foreseeing the end of lumbering, began to promote agricultural

development as early as 1890. However, a determined effort to bring more farmers into the County was not made until 1895 when the depletion of the timber resources came closer to reality. The railroad companies published very colorful accounts of the opportunities for raising a variety of crops on "cheap and fertile lands within easy reach of good markets having the benefit of both rail and water communication with the leading markets" (Robinson and Sprague, 1873).

At the turn of the century the emphasis of the advertising was on fruit growing. Gibson (1944) writes that a booklet printed in 1898 stated that "apples, pears, plums, and cherries of the finest kinds can be raised here successfully and in abundance," and that "Cheboygan is bound to become the greatest fruit-raising county in Northeastern Michigan." Local newspapers stated that it had been "proved that flax could be raised in Cheboygan" and that "Cheboygan raises the finest sugar beets in the world." A visiting editor wrote that "lands once thought to be worthless are bringing forth fine crops and in a few years this portion of our state will blossom from a jackpine wilderness into fine farms." A local paper in 1910 published the following: "It is being realized that fruit is one of the things that this county is admirably adapted to and people are taking advantage of that for all it is worth. We expect to see every piece of land in the county some day covered with fruit and productive farms, with fruit farming the basis of the prosperity that will be ours" (Gibson, 1944).

The efforts expended in promoting agriculture produced no effective permanent developments, although the present volume of production might have been less without the early advertising. About 50,000 fruit trees were set out in the County in the years 1897 and 1898, but it was learned through experience that only a small part of the County could produce fruit. Late frosts limited fruit-growing to those localities along large bodies of water which temper climatic conditions and to those light sandy loam and loam soils with good drainage. The total number of trees in the ground declined markedly so that in 1930 the number was half that of 1920. By 1940 the number of fruit trees was about 38,000, primarily apple trees, set out by orchard companies along the north side of the Lower Black River.

Agriculture, then, did not develop to the extent hoped for and envisioned by the County fathers of 1900. The quality of the soils was overestimated, probably because the diversity of soil types was not recognized. It is certain that crops were quite prolific on good soils in early days when they still had virgin fertility. However, the fires of the logging days had roared through the slashings and burned much of the organic matter out of the top soil of lands later used for agriculture.

The fact that no important markets developed within economic shipping distance has also been an important factor in keeping agriculture close to the self-sufficiency level

(Foster et al., 1939). There was a gradual transition from the widespread planting of cereal grains around 1910 to the growing of hay, potatoes, fruit, oats, and corn in 1930 (U.S. Census, 1910, 1930). In 1940 the principal farm products listed according to value were dairy products, hay, potatoes, poultry and eggs, apples and raspberries, oats, corn, and beef cattle (U.S. Census, 1940).

Industry and Business

Although farming and lumbering developed simultaneously in Cheboygan County, the latter far outstripped the former in value of production through the turn of the century. The Town of Cheboygan developed around the lumber industry. In 1870 when congressional appropriations were voted for deepening and widening the Cheboygan River from its mouth through the heart of town, Cheboygan became a port of entry and profited from customs receipts. The lake boats sailing between Chicago and Detroit refueled there, especially the wood-burning ships that could make use of the wood scrap from the lumber mills. The more optimistic business men thought then that Cheboygan would one day become the most important port on the Great Lakes between Chicago and Detroit (Gibson, 1944).

By the early 1880's railroads had been put through to the County. These flourished during the lumber days and in turn stimulated economic activity in general. When lumbering began to lag, the railroads advertised the County's

recreational resources and were responsible in great measure for promoting the early tourist business around the two large inland lakes, Burt and Mullett.

By 1890 there were about 80 manufacturing establishments in the County employing 1,300 people out of almost 12,000 population and disbursing an annual payroll of almost half a million dollars. The value of the products in that year was more than $1,500,000, and 90 per cent of the value of all manufactured products was derived from wood (Gibson, 1944).

Sixty per cent of the manufacturing plants were located in the City of Cheboygan and four-fifths of the employees lived and worked in the town. For the most part the townspeople either helped manufacture lumber or provided goods and services to those who did. Other industrial establishments besides lumber mills were three foundries, two planing mills, a large brewery, a flour mill, two feed mills, a copper shop, three carriage and wagon shops, and a brick factory. Among the artisans were two boiler makers, a boat builder, a carpet weaver, a cigar maker, a harness maker, and a picture-back manufacturer (Gibson, 1944).

The business services of the City of Cheboygan in 1890 included 8 grocery stores, 5 meat markets, 2 fish dealers, and 2 general stores. Service establishments consisted of 17 saloons, 13 hotels, and 3 restaurants, all serving liquor. Two banks, one a stock company and one a personally owned

business, supplied the credit needs of the City and the northern part of the County.

There were large stocks of fish in the Straits and the adjoining Great Lakes. However, the high returns in the lumber industry before 1900 relegated fishing primarily to recreational interest. The passenger pigeons were plentiful near Burt Lake, and game hunters came from as far as Ohio to net these birds alive and ship them out in crates to the cities where they were considered a food delicacy. Lack of protection resulted in their eventual extinction (Gibson, 1944).

Recreation

The lands bordering the Straits of Mackinac have long been popular as resort areas. Before the Civil War, Mackinac Island was the first place in the Straits area to attract summer visitors seeking escape from the "heated term" in the regions to the south. In 1873 there were four first-class lines of steamers (26 lines in all) plying regularly between Chicago, Milwaukee, Detroit, and Buffalo and stopping at Mackinac Island with passengers and freight. Island House was widely advertised as one of the largest summer hotels in Michigan (Robinson and Sprague, 1873).

The first tourists to visit the large inland lakes of Cheboygan County are thought to have been summer residents from Mackinac Island. These lakes were accessible by boat from Lake Huron through the Cheboygan River in 1870 after the

completion of locks at the north end of Mullett Lake (Fuller, 1938). Robinson and Sprague wrote in 1876 that "all who visit Mackinac Island should not fail to visit Cheboygan and these two beautiful lakes. For trout fishing, these lakes and small streams are said to be unequaled in the Union."

In Cheboygan County the Village of Topinabee on the west shore of Mullett Lake appeared about 1880, principally as a post office for the benefit of summer tourists (Fuller, 1938). Several years before that time a wealthy business man from Southern Michigan had built the first summer resort on this lake at the site of the present Topinabee Hotel. The latter hotel is at present the largest resort in the County.

The early railroads advertised the County as a vacation land. The Michigan Central Railroad, built through the County along the western shore of Mullett Lake, facilitated the travel of summer vacationers and helped to expand the resort business. During the summer months one still can see occasionally the private coach of a railroad executive sidetracked at Topinabee.

Progress toward better administration and land use was made in 1911 when a new State law provided for the exchange of state-owned property for private lands. This enabled the State to begin to block in the cut-over lands in its ownership and paved the way for the establishment of the forest reserves. These in turn attracted the deer hunters from the southern part of the Lower Peninsula, especially those from

the cities producing the automobile (Titus, 1945).

The tourist-sportsman had been coming to the County for some time for fishing, and here and there along the streams and lakes, cabins and club houses had been erected. A few local people earned a seasonal living by working for these down-state recreationists. Suddenly County leaders awoke to the possibilities of this new source of income. The automobile manufacturers were urging that good roads be built into all parts of the State. Soon family touring during the summer became the fashionable thing to do.

However, the automobile did not bring immediate or substantial increase in income to Cheboygan County for a number of years. Roads did not improve readily nor did the number of automobiles increase rapidly. It took several days to negotiate the distance between down-state cities and Cheboygan County in 1912, and the accommodations along the way were not all that could be desired. Too, automobiles were quite expensive and not many laborers could afford one, nor were they certain that they wanted one. Customs were not readily changed in the early days of gasoline-driven machines. Yet by 1916 the tourist traffic had increased sufficiently to indicate that in the future it could be depended on to provide a very important seasonal income (Titus, 1945).

The local people began to forego their own enjoyment of leisure activities in some measure and to give attention to the recreational possibilities of the County. Unfortunately,

this effort was confined largely to advertising and to such activities as holding color tours in the autumn and ice carnivals in the winter. There was little money available to build tourist attractions or to improve the aesthetic appearance of the County. No concerted effort was made to zone the principal highways for the purpose of improving the attractiveness of the roadsides. Until 1949 in the City of Cheboygan there was no desirable public beach on the Lake Huron shore. However, the tourist was to come to the County, or at least pass through it, in ever-increasing numbers (Titus, 1945).

THE POPULATION

A knowledge of population trends is an aid to the understanding of the pressures which have been exerted on the land. In Cheboygan County, as in other forest areas, the population built up to a peak on the timber and soil resources, and when these had been exploited, it declined.

Growth and Decline

When the County was organized in 1855 the population was 300. By 1860 it was only 517, but in the next 50 years it increased to 17,872 (see Fig. 2). Most of this increase was due to an influx of people attracted by the opportunities for employment in the lumber industry and by the low prices of cut-over land available for agriculture. The greatest rate of increase came in the decade between 1870 and 1880, when the population tripled. The peak figure of 17,872 (considering only census years) was reached in 1910, almost 14 years after the period of highest white pine lumber production. The logging of hardwoods was in progress at this time and the number of farms was at an all-time high.

The decade 1910-1920 saw the first and greatest decline in population. This corresponded with the disintegration of the white pine lumber industry. The continued decrease to a low of 11,502 in 1930 can be attributed to the

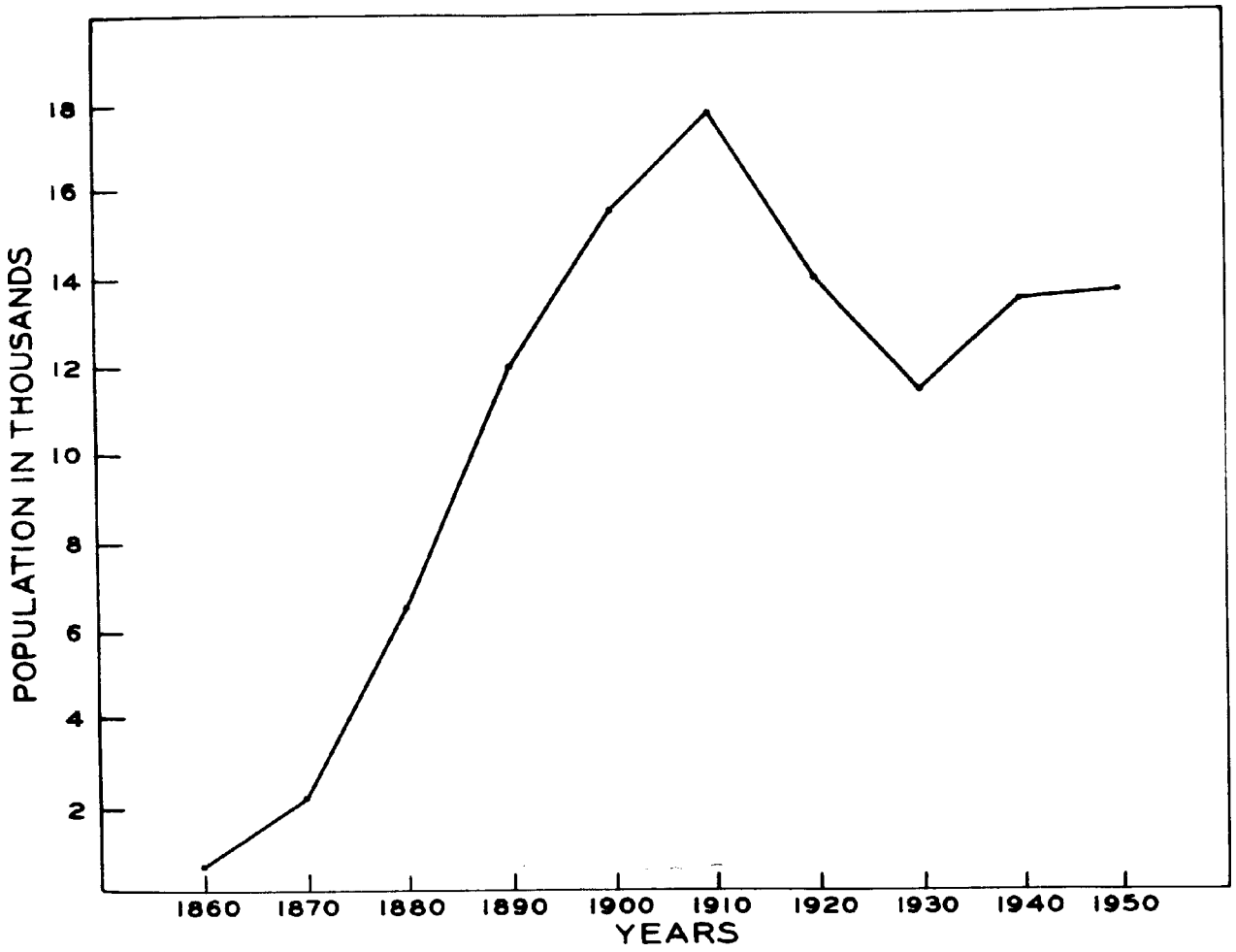


FIG. 2 POPULATION OF CHEBOYGAN COUNTY 1860-1950

migration of people to industrial areas where employment was available during the agricultural depression and industrial prosperity of the twenties. The general depression of the thirties reversed this downward trend and caused some people to return to the rural areas to seek a living on the land. By 1940 the population had increased to 13,644.

Recent Change

According to a study by Thaden (1948), the population of Cheboygan County decreased 0.3 per cent from 1940 to 1947, a net loss of 37 persons. During this period the natural increase due to the excess of births over deaths was 915, and 952 more persons moved out of the County than moved into it.

For the purpose of comparison, urban and industrial counties in the State had most of the increase from 1940 to 1947. In all, 28 counties had a loss of population, which may be attributed in part to a decrease in the farm segment. In 9 of these the decrease amounted to 10 per cent or more. However, of 22 rural counties, 12 gained in population from 1940 to 1947. In these areas the heaviest increases occurred around Houghton Lake and Higgins Lake, in unincorporated villages in Roscommon County, around the cities of East Tawas and Tawas City, and near the air base at Oscoda.

The United States Census for 1950 gives the population of Cheboygan County as 13,731. This is a gain of 87 persons since 1940. However, comparing it with the population figure for 1947, there was an increase of 124 persons or almost 1 per cent in three years.

Distribution by Age Groups

Figure 3 compares graphically the male populations of Cheboygan and Wayne Counties by five-year age groups. The most striking characteristic of this comparison is the sub-normal number of males between the ages of 20 and 50 years in

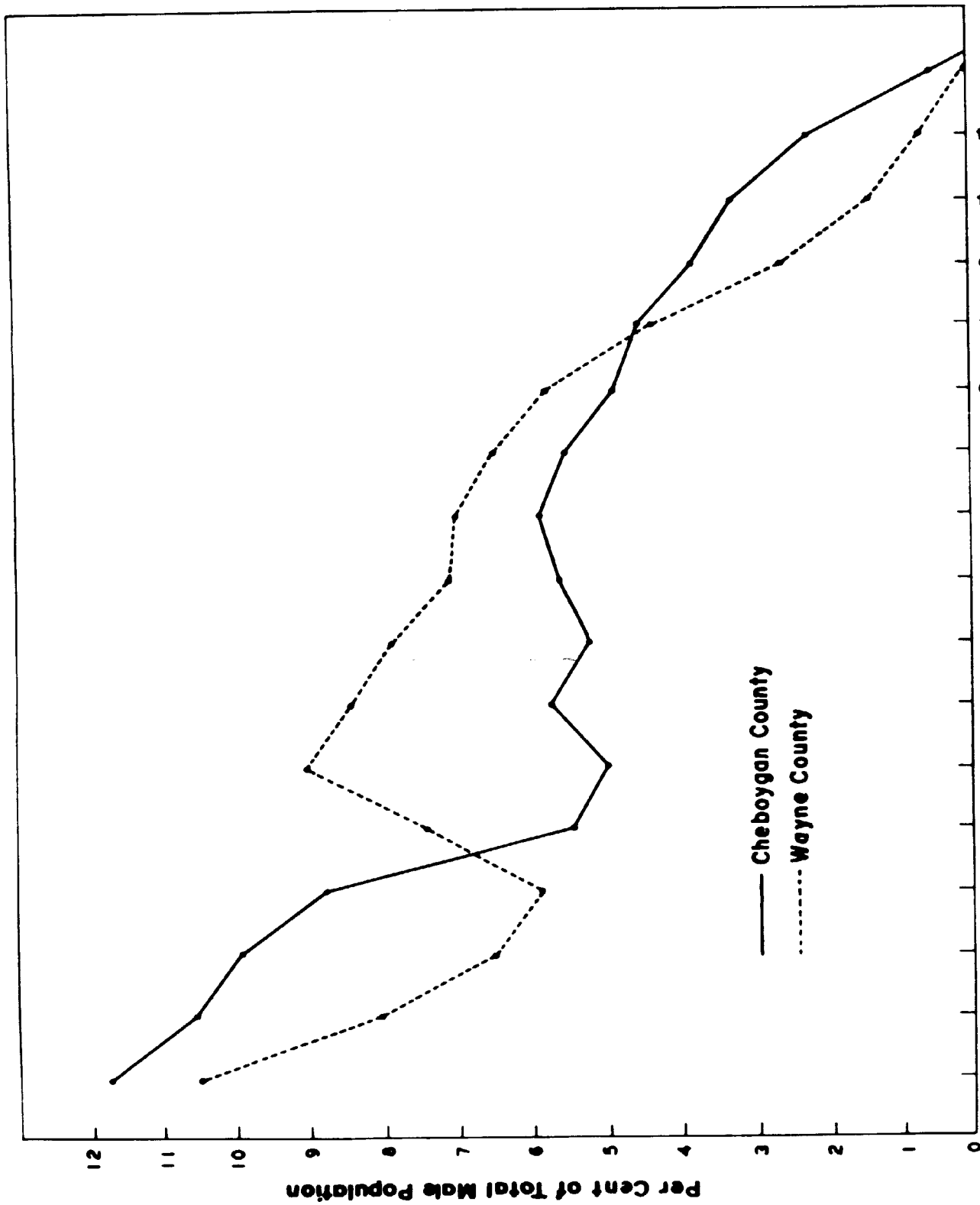


FIG.3 DISTRIBUTION OF THE MALE POPULATIONS BY AGE GROUPS IN CHEBOYGAN AND WAYNE COUNTIES, 1950

Cheboygan County and the relatively high numbers in those ages in Wayne County. This is explained by the exodus from Cheboygan County of men in these age groups to the large manufacturing cities in southern Michigan where job opportunities are more abundant.

Figure 3 also points up the relatively high percentage of the population in the 1-19 year age group compared with the urban county. This demonstrates the higher fertility ratio (or birth rate) in rural areas. The percentage of persons 65 years and over is also higher in the rural counties, although the contrast is not as great as in the 1-19 year group.

Residence and Geographic Distribution

The population of the City of Cheboygan was almost 42 per cent of the total population of the County both in 1940 and 1950. It comprises the total urban segment (see Table 4). The rural-farm group accounted for almost 40 per cent of the population in 1940 but by 1950 it had decreased to about 28 per cent. This trend parallels the reduction in number of farms for the same period.

Whereas the rural-farm segment lost 12 per cent in population, the rural non-farm group gained 12 per cent from 1940 to 1950. This trend is due in part to the actual increase in rural non-farm residents, both within and outside villages, but also to a change in definition of a farm used by the Bureau of the Census in the survey for 1950.

TABLE 4

NUMBER AND PERCENTAGE OF POPULATION BY RESIDENCE
1940, 1950

Residence[a]	1940[b]		1950[c]	
	Number	Per Cent	Number	Per Cent
Urban	5,673	41.6	5,687	41.4
Rural-nonfarm	2,554	18.7	4,238	30.8
Village	853	6.3	...	...
Non-village	1,703	12.4	...	...
Rural-farm	5,417	39.7	3,806	27.8
Total	13,644	100.0	13,731	100.0

[a]Definition and use of the following conform with U. S. Census usage: urban -- cities and incorporated places having 2,500 persons or more; rural-nonfarm -- includes all persons living outside cities or incorporated places having 2,500 persons or more who do not live on farms; rural-farm -- includes all persons living on farms of at least three acres or producing a minimum of $250 worth of produce annually.

[b]J. Allen Beegle, 1947, Michigan Population: Composition and Change (East Lansing: Michigan Agricultural Experiment Station Special Bulletin 342), p. 76.

[c]U. S. Bureau of the Census Volume on Population, 1950.

Approximately 69 per cent of the total population resided in roughly the northern half of Cheboygan County in 1950. However, the population of the City of Cheboygan accounted for 60 per cent of the people residing in that portion of the County. The rural-farm segment in the north

half constitutes about 64 per cent of the total farm population and averages 11 persons per square mile of land area compared with about 5 persons per square mile in the south half.

The southern half of the County is rolling to hilly and the soils are lighter than in the north half. This accounts for the lower farm population in this section and for the fact that almost 75 per cent of the land area is in State ownership. The north half of the County contains the two largest farming areas, namely, the valley of the Lower Black River, which extends southwesterly from the Cheboygan River to Black Lake, and the Polish farming community around Riggsville lying between the City of Cheboygan and Douglas Lake. The latter area includes Inverness Township which has both the largest total population and the largest farm population of all townships in Cheboygan County. The sex ratio for the southern portion is 128 males per 100 females, while that for the northern part is 108/100 (U.S. Census, 1950).

Population Changes of Townships Classified According to Land Use

The population trends for the townships in Cheboygan County follow those of the County generally. The peak population was reached in 1910, considering only the census years, and there was a steady decline to a low point in 1930. Population trends in four townships, each of which

exemplifies a pattern of land-use development, will be described.

Inverness Township contains the largest area of good agricultural land in the County (see Fig. 4). This fact coupled with its location just southwest of the City of Cheboygan consistently gives it the highest population of any township. Its population curve starting in 1880 follows that of the County very closely, although the figure for 1930 was lower than that for 1880. There is hardly any State forest land in the Township, and there was a slight increase in population from 1940 to 1950 in spite of the sizeable increase in acreage per farm.

Tuscarora Township includes the south half of Mullett Lake and the Village of Indian River. Its highest population before 1950 was 711 in 1900, soon after the peak of the logging era. Farming did not develop extensively in the Township and the population declined to a low ebb of 376 in 1920. Since that time, however, the recreation industry has developed around the shore of Burt Lake, at the junction of highway routes U.S. 27 and M. 69, and in the Village of Indian River. The highest population was 832 in 1950. Judging from the recent expansion of the Village, a continued upward trend in the population curve may be expected.

Nunda Township, which lies in the extreme southern part of Cheboygan County, is two civil townships in area. The Village of Wolverine (population 299 in 1950) on U.S. Route 27

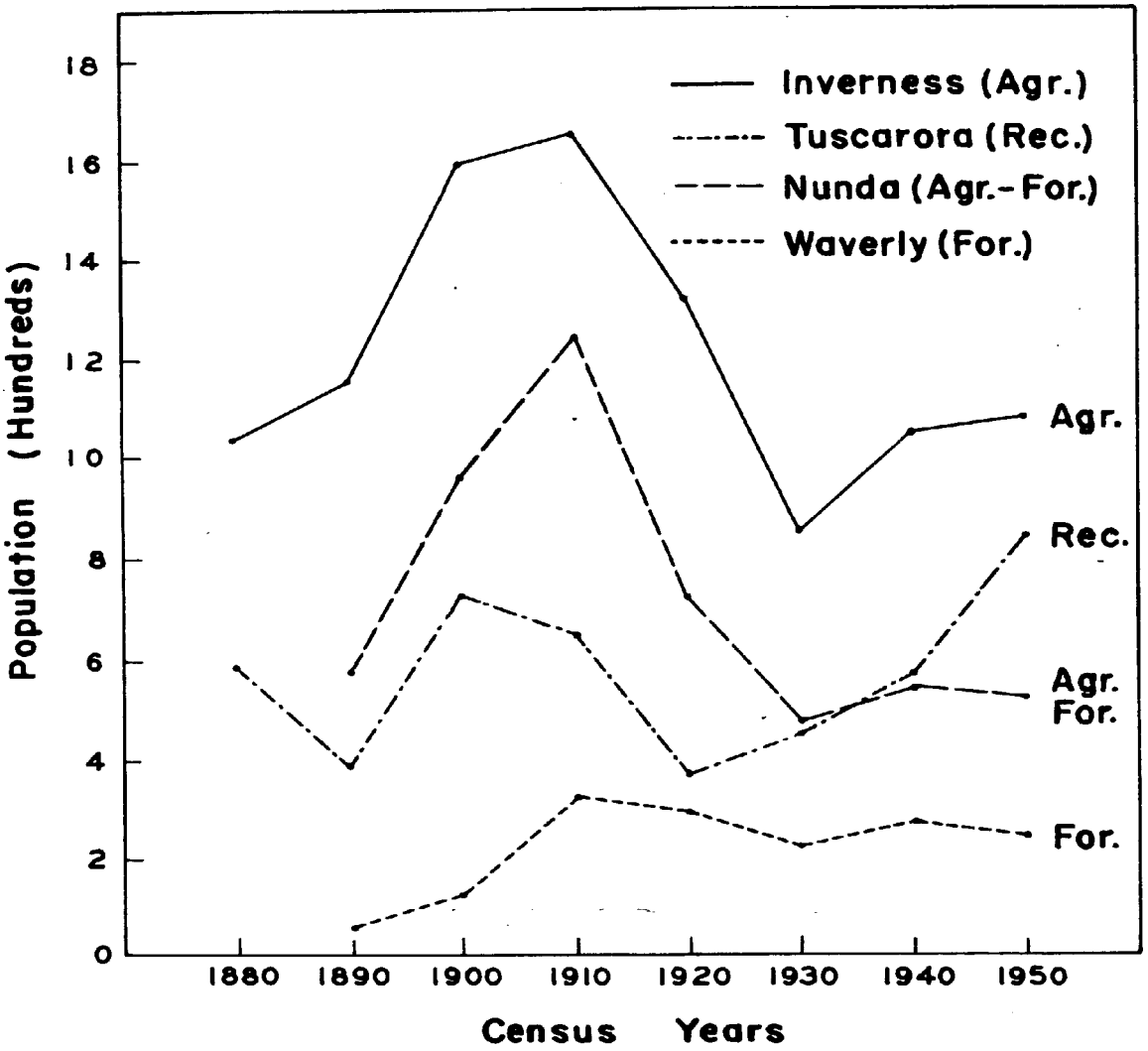


FIG. 4 POPULATION TRENDS IN FOUR TOWNSHIPS IN CHEBOYGAN CO. ACCORDING TO PRESENT LAND USE.

lies partly within the western boundary. The peak population of 1,238 was reached in 1910. Both the village and rural populations had decreased by 1930 to almost a third of this peak. By 1940 the number of persons had increased because of the movement back to the land during the depression. By 1950 the trend was downward again. Agriculture has been extended as far as possible to make use of the better lands

and has forsaken the eastern half of the township which has been blocked into the Hardwood State Forest.

Waverly Township is an example of an area which did not develop agriculturally because of poor soils, primarily. It includes one and a half civil townships or 54 sections of land. Its peak population was 321 in 1910 and the subsequent low point was 220 in 1930. Although there was a slight rise to 275 in 1940, the 1950 figure was down again to 239, indicating that agriculture has reached its greatest extensive development. Approximately 75 per cent of the township lands are dedicated to State forests.

Future Trends

Considering only the census years, the past decade has brought about the smallest net change in the total population of Cheboygan County, an increase of 87 persons. This fact indicates that an equilibrium has been reached which has some possibility of permanency, even though the past decade has been one of wartime prosperity. The excess of births over deaths will not materially increase the population because, with the present local economy, a sufficient number of persons will migrate to large urban areas providing better employment opportunities so that no accretion will result.

With the present increased community efforts in getting light industry permanently located in the County, the population should remain at the present level with only

minor fluctuations, precluding a major war or depression. The advent of more small manufacturing firms in the immediate future would absorb the unemployed labor force.

The future development of forest industries built on the sustained yield of forest land in state ownership should aid in stabilizing the economy and in maintaining the population somewhere near the present level. So far there has been little or no movement away from the large industrial cities because of fear of atomic attack. However, should the possibility of attack become more imminent, it is probable that the population of counties in the hinterland of the State would increase somewhat.

The rural-farm population will remain static or perhaps decline slightly from the 1950 figure. It decreased from 11.7 persons per square mile in 1940 to 8.2 in 1950. The rural-nonfarm segment will probably increase because of the gradual rise of the percentage of older age groups, the tendency for retired persons of the moderate income class to migrate to rural areas, and the growing number of families living and catering to tourists along highways outside incorporated limits. The construction of the proposed Straits of Mackinac Bridge will bring a temporary increase in population during the estimated three or four years it is being built.

THE ECONOMY

In the complex economy of today simple and direct relations of economic activity to natural resources are not always evident. During the settlement period, however, those relations were clearly fundamental. The location of lumber mills cutting white pine logs was usually near the mouths of large rivers down which logs could be driven from the forested areas. Generally, then, the mills were located as advantageously as possible, considering the location of the resource and transportation facilities. The distance to market and a labor supply were of secondary importance.

Regional market conditions affect land use in Cheboygan County directly. The level of prices received for farm and forest products determines the amount of profit to the operator and influences in time the use he makes of the land and the area he devotes to each use.

The City of Cheboygan is the principal trading and shipping center and the largest County market for products of farm and forest. The economy of this urban area affects land use in the County directly by the fluctuating level of the demand for farm produce caused by the tourist season. It influences land use indirectly because operators of small farms within commuting distance of the City work in the manufacturing plants when they are in operation but turn their attention to the land otherwise.

Agriculture, Forestry, and Recreation

Agriculture, forestry, and recreation are the three extensive uses of rural land in Cheboygan County. They will be compared here according to area devoted to each, number of persons employed, and gross annual incomes received.[1]

According to the United States Bureau of the Census, 125,331 acres of land in Cheboygan County were devoted to farming in 1950 (see Table 5). This area represented a decrease of about 14,000 acres, or 11 per cent, since 1945. Approximately 1,450 persons are employed in agriculture on a full-time basis in the County. The total value of all farm products sold in 1949 was $1,177,925.

An estimated 57,957 acres, exclusive of farm woodlots, are now devoted to the production of timber by private owners. Land in State forests totaled 174,991 acres in 1951. Farm woodlots comprised 59,376 acres in 1950 of which 36,716 acres, or 62 per cent, were pastured and 22,660 acres were not grazed. Not more than 40 persons are employed full-time in forestry, including logging and lumbering. Income from the sale of all forest products in the County does not exceed $75,000 annually.

The area in private ownership devoted primarily to recreation includes a minimum of 67,000 acres. About 40,000 acres of this total are used for hunting and fishing. Approximately 25,000 acres are fenced for hunting in the County.

---

[1] Each of these broad land uses is described in detail in the chapter on rural land use.

TABLE 5

AREA, NUMBER OF PERSONS EMPLOYED, AND INCOMES FROM BASIC LAND USES, CHEBOYGAN COUNTY[a]

Use	Area 1950	Per Cent of Total County Area	Number of Persons Employed Full-time	Gross Income 1950
Agriculture	125,331	27.0	1,450	$1,177,900
Forestry	234,651	50.6	40	75,000
Private	57,957	12.5	...	...
State	176,694[b]	38.1	...	...
Recreation	243,694	52.5	...	2,250,000
Private	67,000	14.5	...	...
State	176,694[b]	38.1	...	...

[a]Sources: W. F. Ramsdell's study of Cheboygan County; U.S. Census, 1950; U.S. Bureau of the Census, Agriculture, 1950; Michigan Department of Conservation Biennial Report, 1951-1952.

[b]State lands are listed under both forestry and recreation.

Lands used for summer home sites total about 25,000 acres, and there are approximately 2,000 acres in parks, golf courses, and skiing developments. In addition, the 176,000 acres of State lands support hunting, camping, and fishing uses.

It is difficult to estimate the number of people employed in recreation. Certainly there are only a few full-time workers, whereas those who work part-time in this

industry are quite numerous. An estimated $2,250,000 is spent annually in Cheboygan County by tourists and sportsmen. This amount includes $750,000 spent for lodging and other services and at least $1,500,000 for consumer goods.[1] However, much of these amounts are spent by itinerants who do not actually use the land.

To conclude briefly, recreation makes use of 52.5 per cent of the land area of the County and returns the largest income. Agriculture utilizes 27.5 per cent of the County area and provides the second largest income, which is approximately half that produced by recreation. However, land used for agriculture also supplies food and fuel to farm families. About 50 per cent of the land area produces tree growth as a primary function, but this use produces a very low income at present because of the immaturity of timber stands.

Manufacturing

Trends

The manufacturing of lumber reached its peak in Cheboygan County in 1896. To earn a living at that time the residents of the City of Cheboygan either helped manufacture lumber or provided services to those who did. Fig. 5 (and Table 72) indicates that on the average 1,282 persons were employed by manufacturing firms in the year 1889 (considering only census years). The number decreased consistently through

---

[1] See the section on retail sales in this chapter and the one on tourist accommodation in the chapter on rural land use.

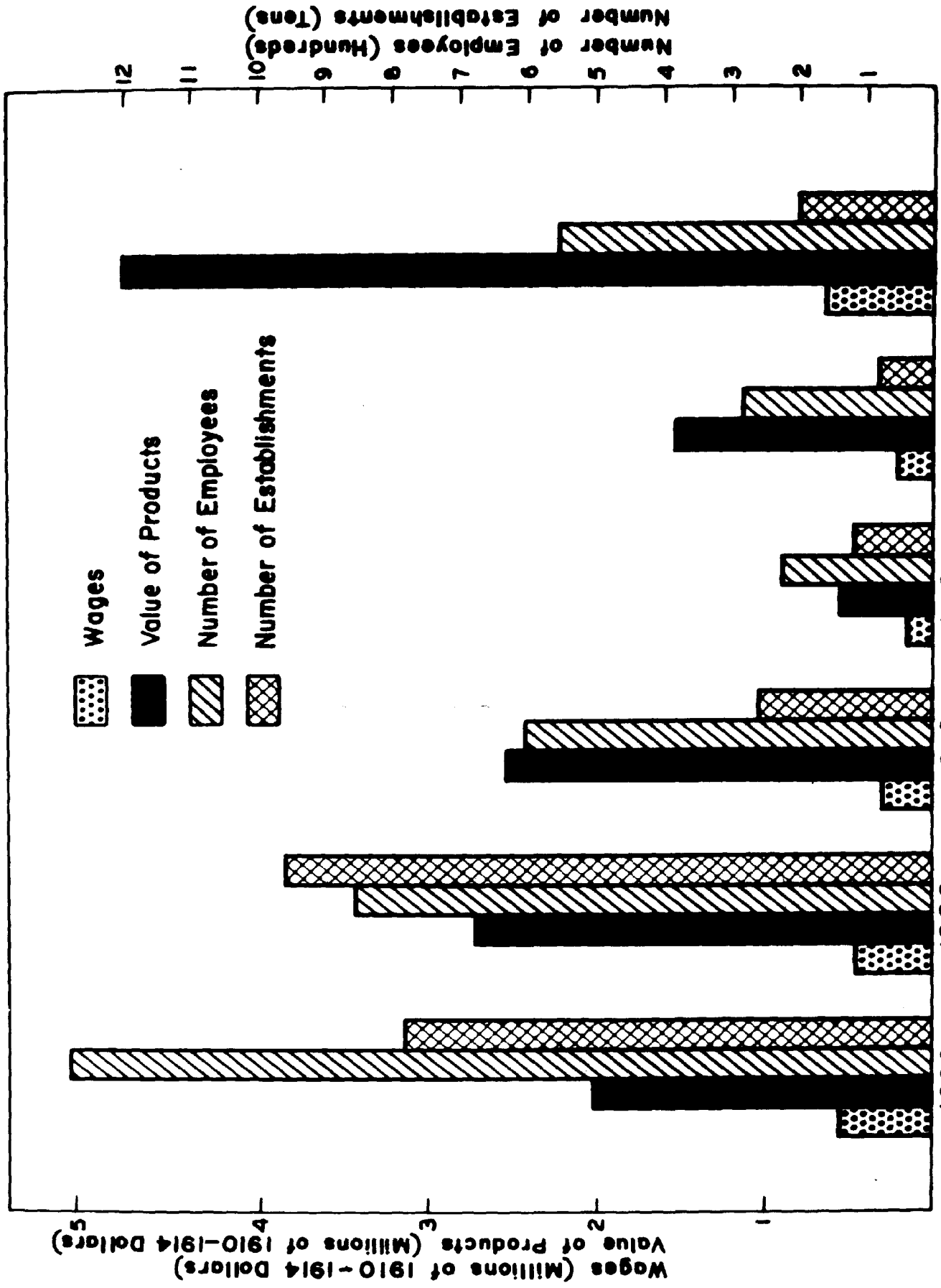


FIG. 5 MANUFACTURING TRENDS IN CHEBOYGAN COUNTY

1899 and 1919 to a low of 225 in 1929. By 1939 an upswing in employment took place after the depression of the 1930's, and by 1947 the average number of persons employed in manufacturing was 555.

The number of manufacturing establishments was highest in 1899. These decreased consistently to 8 in 1939, but by 1947, with war-time prosperity, they had increased to 20 in number.

Of the census years considered, both wages and value of products were greatest in 1947 and second highest in 1919, both post-war years. However, if wages and value of products are stated in terms of 1910-1914 dollars, the year 1889 was second highest in wages paid and 1899 second in value of products.

Other comparable counties in Michigan exhibited similar characteristics of manufacturing decline through 1929, although few had such severe unemployment. Cheboygan County had an 82 per cent decrease in average number of employees between 1889 and 1929, while other counties in southern Michigan experienced only a 10 per cent decline in number of workers. The decreasing number of establishments and the merging of those remaining was a general trend of the times, however. Uniquely, Cheboygan was one of the few counties to improve its employment situation in the critical times between 1929 and 1939 (Gibson, 1944).

For more than 30 years County leaders have made efforts to get industries to locate in the area to bolster the local economy. If more local job opportunities were present, fewer young people and family heads would have to go to the large cities to find employment. There would have been less tax delinquency and reversion and relief loads would have been lighter.

Local promotional organizations have offered concessions to bring industries to the City of Cheboygan. The Chamber of Commerce, organized about 1907, has continually worked to promote local industry. Concessions of free rent and bonuses have been offered to attract manufacturers. The City has purchased buildings to provide locations for industries (Gibson, 1944).

Wood-using Industries

Lumbering.--After 1920, when the virgin hardwoods had practically disappeared, second-growth hardwoods began to attain merchantability. By 1935 the 20 operating sawmills of the County were of the portable type. The largest of these cut about 600,000 board feet in that year (see Table 6). Three other portable mills were just getting into production and one bolt mill was producing about 48,000 feet yearly. The total annual production of the 20 mills was 2,332 MBF.

In 1949 only 3 of the mills producing in 1935 were still in business. Of the 16 mills in operation, 12 were the stationary type and 4 were portable. The largest annual cut

TABLE 6

OPERATING SAWMILLS IN CHEBOYGAN COUNTY, 1935, 1949[a]

Capacity	Number[b]		Type				Total Annual Production MBF	
			Portable		Stationary			
	1935	1949	1935	1949	1935	1949	1935	1949
Under 25M	7	1	7	...	...	1	102	10
25-49M	3	1	3	...	...	1	88	25
50-99M	5	5	5	...	...	5	305	275
100-499M	3	8	3	4	...	4	562	1,600
500-999M	2	0	2	...	...	...	1,275	...
1000+ M	...	1	...	...	...	1	...	1,000
Totals	20	16	20	4	...	12	2,332	2,910

[a]Sources: W. F. Ramsdell, The Primary and Secondary Wood-using Industries of the Lower Peninsula of Michigan. George Willis Pack Forestry Foundation, University of Michigan, 1937, p. 17. W. F. Ramsdell, The Primary Wood-using Industry of the Lower Peninsula of Michigan for the Year 1935. George Willis Pack Forestry Foundation, University of Michigan, 1937, p. 34. Forestry Division, Michigan Department of Conservation, Directory of Sawmills Located in the Northern Half of the Lower Peninsula of Michigan, 1949.

[b]In 1935 in addition to the 20 mills listed, one bolt mill and three portable sawmills were just getting into operation. In 1949 twelve mills did custom sawing.

by one mill was 1,000 MBF and the total yearly production of all mills was 2,910 MBF. It may be assumed that nearly all the logs sawed came from within the County.

Secondary wood-using industries.--Wood-using plants other than lumber mills were located in the City of Cheboygan during the peak years of wood production. In 1883 the Cheboygan Novelty Turning Works was established which manufactured cedar floats for fishing nets, handles of various kinds, druggists' boxes, and spindles. In 1892 the Pfister and Vogel Company of Milwaukee built a tannery in the City of Cheboygan which used 15 to 20 thousand cords of hemlock per year for tanning leather. This tannery was the largest west of the state of New York at the time (Fuller, 1938).

In 1902 the Cheboygan Paper Company began manufacturing pulp and paper. By 1912 it employed 200 men, produced on the average 60 tons of newsprint and 45 tons of sulphite pulp daily, and computed its capital at $500,000 (Fuller, 1938). Later it became a subsidiary of Union Bag and Paper Company of New York City under whose ownership production was as much as 125 tons of paper and pulp daily.

By 1951 the paper plant was the largest industrial concern in the County and was owned and operated by LeSavoy Industries Inc. of New York City. The mill had closed several times but local effort always helped to get it back into operation. In 1952, however, the business went into receivership, not because of insufficient profits but,

according to local hearsay, because the owners were unreasonable in shifting the profits to investments elsewhere. There is some optimism that after legal action by the courts the plant will again operate under new management. Before it closed it employed from 135 to 150 men, the majority of whom owned and operated farms within a radius of 25 miles. The mill had been making paper towels and kraft paper using local species including aspen and maple. More pulpwood was obtained from the Upper Peninsula than from Cheboygan County. A considerable volume of pulp was imported from Canada and Sweden, where the owners had interests.

There were seven secondary wood-using plants in the County both in 1935 and 1949 (see Tables 7 and 8). However, only two of those in operation in 1935 were still producing in 1949. With the decline of the Great Lakes fisheries through over-fishing and predation by the lamprey, the demand for fish boxes has declined until today the last mill engaged in construction of this product is shifting to the manufacture of greenhouse flats. In 1935 more wood-using industries were producing fish boxes than any other product, but in 1949 novelties and wood turnings were being manufactured by the greatest number of factories.

The wood-using plants operating today are small when gauged by the number of employees hired. The present firms include two rustic furniture factories, three small plants producing novelties and wood turnings, one making greenhouse

TABLE 7

SECONDARY WOOD-USING INDUSTRIES, CHEBOYGAN COUNTY

1935*

Type of Product	Number of Plants
Fish boxes	3
Furniture	1
Rustic furniture, fencing, cabin logs	1
Novelty turnings	1
Shingles	1
Total	7

*Source: W. F. Ramsdell, 1937. Primary and Secondary Wood-using Industries of the Lower Peninsula of Michigan, George Willis Pack Forestry Foundation, University of Michigan, pp. 37-39.

TABLE 8

SECONDARY WOOD-USING INDUSTRIES, CHEBOYGAN COUNTY

1949*

Type of Product	Number of Plants	Number of Employees	Annual Consumption	
			MBF	Cords
Fish boxes, greenhouse flats	1	4	...	350
Furniture, rustic, indoor, outdoor	2	35	548	40
Novelties and wood turnings	3	15	72	3,022
Fishnet and seine floats	1	5	...	350
Totals	7	59	620	3,762

*Source: Forestry Division, Michigan Department of Conservation, 1949. A Directory of Wood-using Industries.

flats, and one turning out fishnet floats. In 1949 the largest concern hired about 30 persons while the others averaged 5 employees per shop. Of the total volume of wood used by the secondary wood-using industries in 1949, about 42 per cent of the sawed material and 89 per cent of the cordwood were obtained locally, that is, for the most part within the County (see Table 9). With the exception of 11 per cent of the lumber purchased from out-of-state, the remainder of the wood used originates in the Upper Peninsula of Michigan. Cheboygan County cannot at present produce enough wood of sufficient size and volume to supply the local demand by light industry. About 280 MBF of cedar used annually is obtained from the Upper Peninsula where there is a larger supply. However, the County produces the bulk of the aspen and birch used locally.

Other Industries and Industrial Conditions

After the white pine lumbering era, there was a shift to the manufacture of wood pulp and hardwood lumber and later to the production of paper, small auto parts, and apparel. In each of these forced industrial shifts there was a loss of trained workers who migrated to other areas. Economic deterioration has had adverse effects on the labor force and population.

Titus wrote optimistically in 1946 that Cheboygan County was slowly finding new manufacturing opportunities.

TABLE 9

VOLUME AND SPECIES OF WOOD USED BY SECONDARY WOOD-USING INDUSTRIES OF CHEBOYGAN COUNTY ACCORDING TO SOURCE IN 1949*

Species	Source							
	Local		Upper Peninsula		Out-of-State		Total	
	MBF	Cords	MBF	Cords	MBF	Cords	MBF	Cords
Aspen	...	462	...	...	...	...	...	462
Birch (white)	22	1,930	10	...	...	...	32	1,930
Birch (yellow)	10	930	...	...	...	...	10	930
Cedar (white)	210	40	280	400	...	...	490	440
Cherry	10	...	...	...	...	...	10	...
Maple	10	...	...	...	...	...	10	...
Pine (West. white)	...	...	...	...	68	...	68	...
Totals	262	3,362	290	400	68	0	620	3,762
Per cent by measure and source	42	89	47	11	11	0	100	100

*Source: Forestry Division, Michigan Department of Conservation, Directory of Sawmills Located in the Northern Half of the Lower Peninsula of Michigan, 1949.

The demand for war goods had sent industrial contractors and scouts to outlying small cities looking for idle production tools, vacant buildings, and above all, a local supply of semi-skilled labor. The established area wage for common labor in Cheboygan County was 15 per cent under that of

Detroit. Managers figured that with such a differential they could import raw materials the longer distance, ship out the finished product, and still show a profit. From 1942 through 1946, eight small firms employing a maximum of 480 persons moved into Cheboygan County. For the most part these produced fabricated metal products for the war effort. Skilled workers who were imported to get production started and to train local labor found they liked living where they could raise a garden, keep chickens and cows, and be on fishing waters a half hour after work.

However, the curtailment of war contracts caused six small firms to go out of business and others to restrict production. Two firms established before World War II also closed down.

In 1949 the City of Cheboygan asked help of the newly established Michigan Full Employment Commission because nearly half the persons normally employed in manufacturing were out of work. This was a period of mild recession nationally. Since the City is the principal trading center and has more than 40 per cent of the population of the County, the prosperity of the County is closely related to that of its only urban area.

The Full Employment Committee and the City appointed committees to consider the problem. After extensive study, three proposals were made: (1) expand the relief program, (2) move workers out of the area, or (3) provide new employment opportunities. The third course of action was chosen by

the local committee. The next step was to raise money to pay the salary of an industrial promoter and to finance the construction of buildings needed to house new industries. The task of the promoter was to get manufacturing firms to locate in the City of Cheboygan and to find new markets and new products for those already there.

Two firms located in the County as a result of this concerted local action. Together they employ 140 persons and produce parts and tools for the automotive and aircraft industries. One of these firms is now moving to Ohio to be nearer its market center but is being replaced immediately by a Chicago firm.

The second firm employs 75 men normally and seems to be well established. It brought its own union from Detroit and uniquely pays the same wage to all labor employees, regardless of job. It can ship a package of tools on the evening train from Cheboygan which will be delivered in Detroit to a customer early the next day by special delivery.[1]

Although most of the industrial firms in the County are unionized, the maximum wage paid to date in 1953 is about $1.65 per hour as compared with $2.50 paid in large industrial plants in southeastern Michigan. One small tool-producing firm left the Village of Wolverine because labor

---

[1]Although this example would seem to nullify the locational disadvantage of the County because of distance as far as the time element is concerned, the fact is that shipping charges are greater because of the longer distance. Also, this example involves relatively light-weight products.

tried to organize against the wishes of the management. Generally, however, wages in union shops in the County are not high enough to discourage management by reducing profit.

With the paper mill closed, the six remaining firms operating in 1953 and employing 20 persons or more are three tool and metal product firms, one rustic furniture plant, one garment factory, and one plant manufacturing camera cases. These employ a total of 385 persons. A local monthly economic bulletin in comparing the situation in July, 1952, with July, 1953, lists 18 firms (including the newspaper office) which employed 550 in July, 1952, and 17 firms hiring 493 in July, 1953. However, unemployment was 196 in 1952 and only 117 in 1953.

In 1951 there were an estimated 200 men from Cheboygan County working primarily in the automotive plants in southeastern Michigan who would return to the County if job opportunities were available. By 1953 this number had decreased to an estimated 100 men who would return because they preferred living in Cheboygan. After coming back several times to jobs that eventually failed, they have given up trying to live in the County. They prefer working at more dependable jobs for relatively higher wages which will give them more of the modern conveniences of living.

The construction of the oil pipeline through the County has alleviated unemployment somewhat. During the period of several years in which the bridge over the Straits

of Mackinac will be under construction, Cheboygan County will experience increased prosperity. Upon completion of the bridge, the County will benefit from selling goods and services to the larger number of tourists anticipated at that time.

Advantages and Disadvantages of Cheboygan County as a Location for Small Manufacturing Firms

Secondary wood-using industries have been quite stable in operation in the County. Perhaps the reason for their greater stability is that they are located near their source of raw materials and produce specialty items.

Small metal fabricating firms have located in the County to take advantage of the cheap local labor supply. In times of high sustained production, as during World War II, such operations succeed to the advantage of the County. But when demand for their products declines, these small marginal firms are the first to close. They cannot compete satisfactorily with large producers who have the advantage of buying, producing, and selling in volume. Large firms have sufficient capital to survive periods of low demands. Transportation costs are higher for companies located in Cheboygan County because most of their markets are in large cities to the south where their competitors are already located. However, small firms making small metal products are operating in the County successfully but with considerable turnover in number.

At least three kinds of locations might have a labor supply conducive to relatively low wage scales (Hoover, 1948). First, places attractive to the consumer-laborer because of low living costs or a pleasant physical environment might be an incentive to workers to sacrifice a higher wage in order to live and work there. Some skilled and semi-skilled workers prefer to live in or near small towns, such as Cheboygan, in the northern part of Michigan where the climate is cooler in summer, where there is less congestion and noise, where travel to work is much less enervating, and where fishing and hunting areas are close at hand. Some like to live on small farms where they can raise much of their food. Housing and land are cheaper in small towns away from large industrial areas.

These decreased costs of living may make the worker satisfied with a lower wage. Also, certain recreational advantages may make him more contented on the job. Cheboygan County offers all these advantages generally.

Second, since the birth rates are higher in small towns and adjoining rural areas, a "population abundance" develops due to a lack of employment opportunities. This condition promotes a low wage scale. The migration response of the unemployed often diminishes as their financial resources dwindle. The act of migration requires a cash outlay, effort, and a certain risk of failure to find work. Another factor

is that persons living in small towns tend to have larger families (because of the rural environmental complex, theoretically) which makes unemployment cumulative. This situation applies to Cheboygan County to some extent, although migration of the labor force has taken place in large measure. In practice, migration sometimes more than offsets the difference in natural increase; but since mobility is imperfect it never brings the distribution of population quite into correspondence with the distribution of employment opportunities (Hoover, 1948). The residual unemployed make the labor supply abundant, and therefore relatively low wage scales exist in towns such as Cheboygan.

Local concentration of industry fosters the development of a labor force particularly qualified by experience in certain types of production. There is a tendency to reinforce and perpetuate the concentration of plants utilizing similar skills (Hoover, 1948). In Cheboygan County during the war eight small metal fabricating firms moved into the County and employed and trained about 480 persons. Because six of these concerns have since moved out, there is a labor pool of trained men left who have not been satisfactorily reemployed and who could be hired by metal fabricating firms locally. In addition there are about 250 farm operators who work 100 or more days off their farms and could supply seasonal labor.

To sum up the factors for and against attracting new manufacturing firms to Cheboygan County, the advantages are (1) the availability of a relatively small labor supply of skilled and semi-skilled workers, (2) labor willing to work for relatively lower wages, and (3) offers of free rent and bonuses. The disadvantages include (1) long transportation distances to bring in raw materials, (2) long distances to ship products to market, and (3) the fact that the labor force is limited for large concerns or for relatively small companies which might want to expand production.

Management appreciates a stable labor supply without drifters and has found that labor contented off the job is more efficient during working hours. Workmen are more efficient where they do not have to spend an hour and a half getting to work as they do in cities. The war emergency demonstrated that many large industrial areas cannot expand indefinitely, and large operators found they could purchase parts from small producers advantageously (Titus, 1946). These facts support the advantages offered small firms in Cheboygan County.

One drawback to the County as a location for industrial firms is the lack of natural gas for processing and heating. One copper-using firm employing 1,700 persons would have located in the City of Cheboygan two years ago had gas been available. There is hope now that since the Canadian oil pipeline passes through the County, a natural gas line

will follow. At present the American government is urging this development, but Canada is purportedly planning to lay it along the northern shore of Lake Superior to supply Canadian cities.

Commercial Fishing

Commercial fishing on the Great Lakes from the port of Cheboygan gained much importance after 1900. A brochure issued in 1898 in Cheboygan County made no reference to fishing, except as a sport, but it was doubtless a recognized industry at that time. A local paper pointed out in 1915 that the fishing business was bringing in as much money as the lumber mills. About 200 men were employed in that year, fish were being shipped out of Cheboygan at the rate of 40 tons a week, and the wages paid amounted to approximately $10,000 a month. Long freight trains loaded with fish packed in ice headed south from the City of Cheboygan several times a week (Gibson, 1944).

The industry continued to expand for about 15 years and reached its peak sometime between 1929 and 1932. In the latter year shipments of fish were sufficient to make up a single train five miles long. In 1935 one fish dealer in Cheboygan shipped fish at the rate of 5,000 boxes a week.

By 1940 fishing had decreased in importance because of over-fishing, restrictions by State laws, and competition with other ports on the Great Lakes. About 50 men were

employed at this time, and although the industry was still important, it had declined to less than half of its peak production.

Since 1940, and especially in the past five years, the lamprey has made substantial inroads on commercial fish species in the Great Lakes. In 1950 there were only two fish dealers operating in the City of Cheboygan and they were packing 400 to 500 boxes of fish per week. Control of the lamprey and legal conservation measures will allow the gradual return of commercial fish populations in the Great Lakes. The fishing industry can become stabilized through regulation of the catch.

Retail and Wholesale Trade

Number of Establishments

The number of retail establishments increased 25 per cent between 1939 and 1948 (see Tables 10 and 11). Retail sales doubled in the same period when adjusted according to price indexes. The number of paid employees increased over 90 per cent in the same period. There were 1.5 employees for each establishment in 1939 and 2.4 in 1948.

Considering all types of retail stores, eating and drinking establishments increased in number most markedly from 1939 to 1948. In the City of Cheboygan there were two restaurants on the main street (U.S. Route No. 27) in 1940 and ten in 1949. However, gross incomes were down about

TABLE 10

NUMBER OF STORES AND SALES FOR RETAIL GROUPS, CHEBOYGAN COUNTY, 1939, 1948*

Type of Store	1939		1948	
	Number of Stores	Sales $1,000	Number of Stores	Sales $1,000
Food	65	998	79	3,414
Eating and drinking	39	364	61	1,350
General merchandise	5	314	7	840
Apparel	10	87	13	339
Furniture, appliance	7	100	8	315
Automotive	7	360	15	1,169
Gasoline stations	46	366	40	1,630
Lumber, hardware	11	341	18	1,376
Drug, proprietary	10	165	8	470
All others	20	373	25	1,018
Total	220	$3,468	274	$11,921

*Source: United States Census of Business, 1939, 1948. Retail price index, 1935-39 = 100: all items, 1939 = 99.4, 1948 = 171.9; food, 1939 = 95.2, 1948 = 210.2; apparel, 1939 = 100.5, 1948 = 198.

12 per cent nationally in the restaurant business in 1949 compared with 1948, due to slackened post-war spending and more competition. In 1953, a good tourist season, trade reached a new peak.

Food stores were second in importance according to increase in number for the nine-year period. Automotive

TABLE 11

STATISTICS FOR RETAIL FIRMS, CHEBOYGAN COUNTY, 1939, 1948*

	1939	1948
Establishments	220	274
Sales	$3,468,000	$11,921,000
Sales (adjusted to price index)	$ 3,493,000	$ 6,940,000
Payroll	$ 275,000	$ 933,000
Active proprietors	221	289
Paid employees	344	659

*Source: United States Census of Business, 1939, 1948. Retail price index, 1935-1939 = 100: all items, 1939 = 99.4; 1948 = 171.9.

retail stores, including auto parts and auto sales outlets, almost doubled in number, while six gasoline stations went out of business. There were 11 lumber and hardware retail outlets in 1939 and 18 in 1947. Post-war building of homes and business properties prompted this increase. The retail groups showing the largest increase in sales (according to dollar income) are, in descending order of importance: (1) gasoline stations, (2) lumber-hardware outlets, (3) apparel shops, and (4) eating and drinking places.

There were two more wholesale outlets in 1948 than in 1939 (see Table 12). The number of persons employed by these increased by 30 per cent from 1939 to 1948 and total sales in

TABLE 12

STATISTICS FOR WHOLESALE FIRMS,
CHEBOYGAN COUNTY, 1939, 1948*

	1939	1948
Establishments	17	19
Sales	$1,307,000	$4,178,000
Sales (adjusted to price index)	$1,695,000	$2,530,000
Payroll	$ 58,000	$ 154,000
Active proprietors	11	20
Paid employees	55	71

*Source: United States Census of Business, 1939, 1948. Wholesale price index, 1926 = 100: all commodities, 1939 = 77.1; 1948 = 165.1.

dollars more than tripled, disregarding the increased price index. This increase indicates that more retail stores are demanding consumer goods and that the trend is toward a larger trading area, at least in the present prosperity.

Retail Sales

Total retail sales in July and August are almost three times what they are in January and February (see Table 13). The tourist trade accounts for the high volume of sales during the summer months. The peak volume is reached in July or August when expenditures constitute almost 14 per cent of the annual total.

TABLE 13

RETAIL SALES IN CHEBOYGAN COUNTY, 1947-1950*

Month	1947	Per Cent	1949	Per Cent	1950	Per Cent
Jan.	$ 531,493	5.0	$ 549,889	4.9	$ 578,218	5.0
Feb.	524,823	5.0	535,529	4.8	555,701	4.8
Mar.	571,868	5.4	599,537	5.4	636,270	5.5
Apr.	620,898	5.9	707,643	6.3	711,937	6.2
May	830,204	7.9	877,565	7.8	878,489	7.6
June	965,900	9.2	998,038	8.8	1,128,704	9.7
July	1,346,415	12.8	1,546,881	13.9	1,609,668	13.9
Aug.	1,388,093	13.2	1,595,792	14.3	1,595,642	13.8
Sept.	1,088,587	10.3	1,239,365	11.1	1,265,045	10.9
Oct.	892,569	8.5	914,653	8.2	862,115	7.4
Nov.	887,310	8.4	809,023	7.2	877,223	7.6
Dec.	885,438	8.4	811,877	7.3	876,677	7.6
Total	10,533,598	100.0	11,185,792	100.0	11,575,689	100.0

*Source: Michigan Department of Revenue. The sales totals by months were calculated by multiplying the sales tax returns by 33.3.

For the year 1950 total annual sales were a million dollars higher than in 1947, but the pattern of spending by months was the same. Sales begin to increase markedly in May and reach a peak in July or August. They drop rather rapidly in September and October, but hold steady throughout November and December because of hunter expenditures and Christmas buying. For the fiscal year 1949-1950 Cheboygan County ranked 55th among the counties in the State according to volume of retail sales.

Fig. 6 compares the monthly percentages of total annual sales for 1949 in Cheboygan County with those for the State of Michigan. The difference between the low and high monthly percentage figures shown in Table 13 for Cheboygan County was 9.5 per cent, while that for the State was 3.2 per cent. For the State of Michigan in 1949, February was the month with the lowest volume of sales. By April they had reached a high plane and continued throughout the remainder of the year with little variation until December when the peak was reached because of heavy buying for the holiday season.

If the spending pattern of permanent residents of Cheboygan County throughout the year follows that of the State generally, then the volume of sales above this level can be attributed primarily to tourist spending.[1] This added volume of retail sales above local spending totaled approximately $1,500,000 in 1949, or about 12 per cent of the total annual sales.

Employment

During the depression of the 1930's, the population of Cheboygan County increased when unemployed city residents moved back to the County to await the reopening of the factories. At that time 67 per cent of the population was wholly or partially on relief (Matson, 1933). By March,

---

[1]It is probable that spending by local residents is greater on a percentage basis during the summer than the State average.

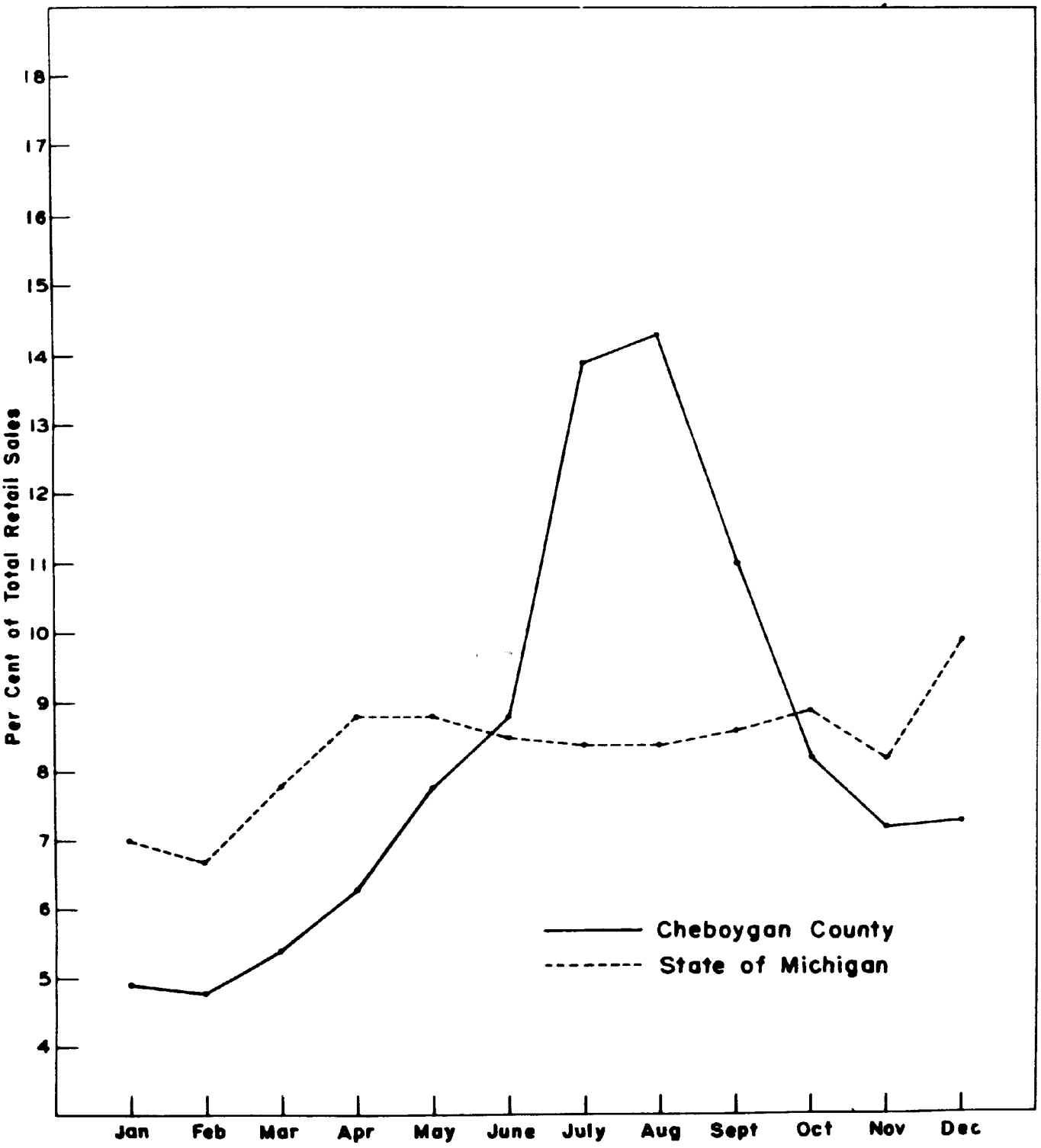


FIG. 6 MONTHLY PERCENTAGES OF TOTAL RETAIL SALES IN CHEBOYGAN COUNTY AND STATE OF MICHIGAN 1949

1940, about 1,120 workers, 23.8 per cent of the labor force, were unemployed (see Tables 14 and 15). Of this number, 50 per cent were on relief. Then the demand for war goods brought six small manufacturing firms to the County and gave work to about 400 or more persons. With the exodus of young men into military service, the unemployment problem was alleviated.

In 1946, the peak employment period of the decade 1940-1949, 570 workers, or 12.3 per cent of the labor force, were still unemployed. Then six of the newly established factories closed, and by December, 1949, unemployment had risen to 1,100, or about 24 per cent of the labor force. Thus, employment trends completed a cycle and still no satisfactory industry has been found to replace lumbering.

The employment situation was more favorable in the latter part of 1950 and the first quarter of 1951 (see Table 15). Estimated unemployment reached a new low of 250 in July, 1950, and rose to 460 in January, 1951, about 300 less than in January, 1950. This reduction came about largely because two new firms moved to the County as a result of local promotional effort.

In comparing unemployment in Cheboygan County with other areas in the State in April, 1950, it was found that the County had 16 per cent of the total labor force unemployed (see Table 15) while the percentages varied from 2.9 per cent in the Flint area to 16.9 per cent in Muskegon and

TABLE 14

EMPLOYMENT OF THE LABOR FORCE IN CHEBOYGAN COUNTY
MARCH, 1940 - DECEMBER, 1949*

Labor Groups	Number of Workers		
	March 1940	December 1946	December 1949
Total labor force	4,718	4,650	4,650
Agricultural employment	1,459	1,450	1,450
Nonfarm labor force	3,250	3,200	3,200
Unemployed	1,122	570	1,100
Total nonfarm employment	2,137	2,630	2,100
All manufacturing industries	400	800	300
Food and kindred products	16	20	20
Textiles and apparel	97	150	30
Lumber and wood products	11	30	20
Furniture	12	30	20
Paper and allied products	165	240	80
Printing, publishing	21	20	20
Metal industries	8	150	...
Machinery	14	120	30
Transport equipment	17	30	70
Petroleum, coal products	3	...	...
Other manufacturing	36	10	30
All non-manufacturing industries	1,737	1,830	1,800
Construction	230	150	110
Transport., Comm., Util.	192	200	220
Trade	532	600	630
Service	595	700	660
Government	124	160	160
Other non-manufacturing	64	20	20

*Source: Michigan Unemployment Compensation Commission, The Labor Market Situation in the Cheboygan (County) Area, December, 1949.

16.4 per cent in the Upper Peninsula. By April, 1951, the large State urban areas varied from 1.5 per cent unemployed in Battle Creek to 4.6 per cent in Benton Harbor. At this time the Upper Peninsula had 6.3 per cent out of work and Cheboygan County had 6.1 per cent.

All the facts presented indicate generally that Cheboygan County is an area of marginal economic opportunity for labor and capital, particularly in the manufacture of small metal products. Its location in relation to large industrial centers is primarily responsible. The future should bring some improvement in the economy as large areas of forest stands attain merchantability and provide raw material for a larger wood-using industry.

Since 1940 the persons employed in agriculture have constituted approximately 31 per cent of the total labor force in the County (see Table 15). This group of workers has been quite stable in number in the past decade. In 1950, 425 farm operators, or 50 per cent, reported work off their farms while 243, or about 29 per cent, worked 100 or more days on jobs off their farm property. Forty-five farms reported 69 persons hired for farm work. There were 400 unpaid members of operators' families who worked 15 hours or more in the week preceding census enumeration in 1950.

Those persons employed in service activities including trades, transportation, and government, have comprised on the average about 36 per cent of the labor force, although this

TABLE 15

PERCENTAGES FOR GROUPS IN THE LABOR FORCE, 1940-1951[a]

	March 1940	Dec. 1946	Dec. 1949	April 1950	April 1951
Agriculture	31	31	31	31	33
Trades, services[b]	37	40	39	34	37
Manufacturing	8	17	6	6	10
Self-employed	...	...	...	13	14
Unemployed	24	12	24	16	6
Total	100	100	100	100	100

[a]Source: Michigan Unemployment Compensation Commission; Planning Research and Statistics Division, 1951. (Monthly Bul.)

[b]Includes transportation and government.

group has varied from 31 to 45 per cent. Self-employed workers, including domestics, have made up about 13 per cent of the labor force; employees of manufacturing establishments have represented 9 per cent on the average; and unemployed persons have accounted for 12 per cent in the past decade. The greatest fluctuations have occurred in the groups employed in services and in manufacturing. For the most part the number of persons performing services varies with the seasons of the year (see Tables 16 and 17).

TABLE 16

ESTIMATES OF THE LABOR FORCE, 1950-1951, SHOWING SEASONAL FLUCTUATIONS[a]

	Jan. 1950	Apr. 1950	July 1950	Oct. 1950	Jan. 1951	Apr. 1951
Total labor force	4,760	4,610	4,770	4,450	4,460	4,430
Agriculture	1,450	1,420	1,470	1,470	1,470	1,470
Trades, Services[b]	1,480	1,580	2,140	1,660	1,510	1,630
Manufacturing	440	280	310	320	420	460
Self-employed	600	600	600	600	600	600
Unemployed	790	730	250	400	460	270

[a]Source: Michigan Unemployment Compensation Commission; Planning Research and Statistics Division, 1951. Special Report on Cheboygan County.

[b]Includes transportation and government.

Transportation

By means of transportation certain lands may be used to satisfy the needs of others than those who live on or near them. Transportation systems have changed the use of lands in many rural areas (Raper, 1932). With the increase in speed and facility of trucks and trains, milk for urban consumption may be produced farther and farther from urban areas. Urban people can go longer distances from the city for week-end vacations. Where shipping charges become relatively cheaper through improved transport facilities,

TABLE 17

PERCENTAGES FOR GROUPS IN THE LABOR FORCE, 1950-1951, SHOWING SEASONAL FLUCTUATIONS[a]

	Jan. 1950	April 1950	July 1950	Oct. 1950	Jan. 1951
Agriculture	30	31	31	33	33
Trades, services[b]	31	34	45	37	34
Manufacturing	9	6	6	7	9
Self-employed	13	13	13	14	14
Unemployed	17	16	5	9	10
Total	100	100	100	100	100

[a]Source: Computed from statistics furnished by the Michigan Unemployment Compensation Commission, Statistics and Research Division, 1951.

[b]Includes transportation and government.

crops and products which had been submarginal become marginal to super-marginal in terms of economic values. Land values increase with the advent of improved transportation facilities and new land uses are developed to increase incomes and to meet increased taxes.

Before many roads were developed in Cheboygan County, the inland waterway was used by boats to transport passengers, mail, and supplies to settlers and logging camps. As the County was settled, roads were developed on township and section lines primarily, with the exception of the main

thoroughfares which used the most expeditious route from the outlying parts of the County to the City of Cheboygan.

Railroads began to lay tracks into the County after the lumber industry was well developed. The Michigan Central line was completed to Mackinaw City in 1881 and reported a good business. The Detroit and Mackinaw Railroad took over the Alger and Smith Logging Road and in 1898 extended it to Onaway, just across the eastern boundary of Cheboygan County in Presque Isle County (Whittemore and Taylor, 1938). The following notes are taken from reports by the Detroit and Mackinaw Railroad:

1901 - Spur completed to Indian River. (Was to have been extended to Petoskey eventually.)

1904 - Branch completed to Cheboygan. Aloha on the east side of Mullett Lake being developed as a summer resort. Ranching being encouraged in the southern part of the County. Cheboygan advertised as the connecting link to the northern Great Lakes region.

1908 - 1910 - Resort trade increasing in the Cheboygan area. Shipment of farm products and passenger service are main sources of income.

1914 - Automobiles competing with passenger service.

1916 - Steady decrease in freight and passengers.

1918 - Railroad in debt.

1925 - Automobiles have ruined passenger trade.

1930 - Increased debt.

1936 - Steady decline in business.

The Detroit and Mackinaw Railroad never reached Mackinaw City, but it did not go out of business. It maintains freight service to the City of Cheboygan today and only recently discontinued token passenger service. The Michigan Central operates both freight and passenger service at present. It was responsible for the development of Indian River, Topinabee, Mullett Lake Village, Rondo, Birchwood, and Wolverine. All these villages are active today, with the exception of Rondo, principally because U.S. Route No. 27 runs through them or nearby.

Two federal highways traverse Cheboygan County. U.S. Route No. 27 goes northward west of center of the County to the City of Cheboygan where it joins U.S. Route No. 23 and extends to the Straits of Mackinac. Michigan Route No. 33 runs southward from the City of Cheboygan about 20 miles on the east side of Mullett Lake and then turns east to Onaway in Presque Isle County. This route serves the east half of the County and carries some traffic to and from southeastern Michigan.

U.S. Route No. 27 is the main artery connecting Cheboygan County with southern Michigan. It goes direct to Lansing, and in the Houghton Lake area it intersects Michigan Route Nos. 55 and 76 which carry traffic to and from the metropolitan areas of Detroit, Flint, Saginaw, and Bay City.

Considering the average 24-hour two-directional traffic flow for 1949, U.S. Route No. 27 carried 1,940

vehicles through Cheboygan County, while U.S. No. 23 served an average of 420 vehicles daily. These two routes between Cheboygan and Mackinaw City carried 1,800 motor vehicles, while U.S. No. 31, connecting the Straits of Mackinaw with the western half of the State through Emmet County at Petoskey, carried 1,130 autos. Therefore, it can be estimated that about 60 per cent of the traffic to the Straits passes through Cheboygan County.

Paved highways, especially U.S. Route No. 27, are the media which help support Cheboygan County economically by channeling auto traffic through the County and the City of Cheboygan. The traveling public from other parts of the State and nation help to triple retail sales in the summer months in comparison with the late winter months.[1] The advent of improved roads in the County changes retail trading patterns in favor of the larger centers. Stone and Hoover (1940) found that when the road between Onaway in Presque Isle County (adjoining Cheboygan County on the east) and the City of Cheboygan was improved, people in the Onaway trading area began buying more clothes, for instance, in Cheboygan. Likewise, when Michigan Route No. 68, which connects U.S. No. 27 with U.S. No. 31 south of Burt Lake, was paved, more Cheboygan County people began buying clothing in Petoskey, a more urbanized market. This same section of M 68 allows some

---

[1]Further consideration will be given this subject in the next section.

traffic to and from the Straits of Mackinac and the south-eastern metropolitan areas to by-pass the City of Cheboygan, although the alternate distance is the same.

Good roads in the County facilitate the transportation of consumer goods by trucks, which now haul more goods than railroads because of their greater versatility. Two freight trucking companies serve Cheboygan County, one from Detroit and one from Grand Rapids. Wholesale concerns today use trucks extensively to supply retailers across county boundaries. In a traffic study it was found that trucks entered Cheboygan County from the south on Route No. 27 at the rate of five per hour.[1]

Railroads effect similar economic relationships but are much more restricted in movement. Competition with trucks has made railroads a marginal operation in Cheboygan County as in other northern Michigan counties. Through the facility of highways, therefore, Cheboygan County is included in an economic area almost State-wide in extent. Transportation helps make Cheboygan an integral part of the region economically.

Cheboygan County in the Regional Economy

The economic region in which Cheboygan County is located is defined as the northern part of the Lower Peninsula

---

[1]See the section on the effects of down-state metropolitan areas which follows later.

of Michigan lying north of the Bay City latitude.[1] Throughout this region products and markets are similar and the local economies have developed in the same manner generally. Economically the County lies in the hinterland of the Detroit metropolitan zone of influence. To a lesser extent it is similarly related to Grand Rapids, Lansing, Flint, Saginaw, and Bay City.

Cheboygan County is an integral part of this economic region, as demonstrated by its dependency on other parts of the region for consumers' goods and by the services it renders and the products it manufactures for distribution within the region. It also functions in reciprocal retail and wholesale trade across county boundaries with trading centers in adjoining counties. County boundaries delimit a political unit primarily, a social unit to some extent, and least of all an economic unit. However, when State aid is considered, the fact that more than half the cost of County government functions is borne by the State makes the County boundaries relatively important.

The balance of trade with the outside world is unfavorable to Cheboygan County. Stone and Hoover wrote in 1940 that Cheboygan County's needs cost $2,500,000 annually. The largest item was retail consumers' goods, which accounted for 75 per cent of the total cost. Mail order buying cost another 15 per cent, insurance 4 per cent,

---

[1]Stone and Hoover (1940) suggest this definition.

electricity, communication, and transportation 5 per cent, and recreational supplies 1 per cent (see Table 18).

On the credit side of the ledger inpayments from commercial production and services totaled only $1,200,000. Manufacturing, agriculture, lumbering, and fishing earned two-thirds of this, while one-third came from the sale of recreational services and facilities. Another $550,000 was received in state and federal aid for public works, old age pensions, workmen's compensation, etc. The remaining balance of $750,000 could not be accounted for with certainty, but at least half of it no doubt came from the wages of 200 or more laborers who worked outside the County and maintained homes and families in the County.

Exports from Cheboygan County in 1949 had a total value of about $10,000,000. Most metal products are shipped to assembly points and distribution centers in Michigan for the automobile and aircraft industries. Textiles are marketed mostly in Michigan, while the paper produced supplies both national and international markets.

Cheboygan County's chief agricultural export for regional markets is sour cream for the production of butter, although whole milk is just now finding its way to Detroit. Very little butter is made by commercial production in the County. A large creamery in Cadillac, Michigan, buys more cream in Cheboygan County than any other butter producer in the region. Four dairies and collecting stations receive

TABLE 18

BALANCE OF PAYMENTS, CHEBOYGAN COUNTY, 1940*

Inpayments	Value	Per Cent
Manufacturing, agriculture, fishing, lumbering	$840,000	33.6
Recreation	360,000	14.4
Old age pensions, workmen's compensation, other public aid	550,000	22.0
"Other" and wages earned outside county	750,000	30.0
Total . .	$2,500,000	100.0

Outpayments		
Retail consumers' goods	$1,875,000	75.0
Mail orders	375,000	15.0
Electricity, communication, transportation	125,000	5.0
Insurance	100,000	4.0
Recreational supplies	25,000	1.0
Total . .	$2,500,000	100.0

*Source: E. A. Stone, E. M. Hoover, Interregional Balance of Payments, 1942. A report made under the program of Land Utilization and Land-use Planning at the Institute of Public and Social Administration, University of Michigan.

cream for this concern in the City of Cheboygan. Other important markets for Cheboygan County cream are Coleman, Bay City, East Jordan, and Petoskey, Michigan.

Local dairies buy milk from farmers in Cheboygan County to supply the local market. With the demand increased by tourists in the summer months, they must buy from farmers in adjoining counties in order to get enough milk produced under sanitary conditions. At this season it is also imported in paper containers from as far as Bay City.

Farmers sell very little hay, small grain, and potatoes on the regional market because most farms are of the self-sufficing type. However, some buying and selling of farm crops take place on a small scale across County lines. Cheboygan County farmers patronize livestock auctions in the region, especially the semiannual sales at Gaylord and West Branch.

The City of Cheboygan is a trading center for approximately the northern two-thirds of the County, although Mackinaw City residents, for instance, divide their purchases of men's clothing between Cheboygan, 17 miles distant, and Petoskey, 36 miles away (Stone and Hoover, 1942). The residents of the southwestern part of the County trade in Petoskey and Gaylord primarily, while those in the southeastern section go to Onaway (Presque Isle County) to buy goods, food in particular. A few residents of adjoining counties come to the City of Cheboygan to shop.

Some stores in Cheboygan County could not remain in business without the tourist trade. Stone and Hoover (1942) found that certain stores are maintained solely to cater to the tourists. About 25 per cent of the restaurants, confectioneries, and filling stations and approximately 15 per cent of the grocery stores operate only in the summer months. Other retail outlets, while not entirely dependent on the tourist or resorter, estimate that about one-third of their sales are made to the non-resident trade.

With its large inland lakes and comfortable climate, Cheboygan County serves as a summer recreation area for many down-state and some out-of-state residents. Those who have summer homes in the County give the trading areas more business per person than other recreation groups. Another group of persons rents cabins for a week or two, stays in resort hotels, or in trailer camps. The total number of all these persons is smaller, however, than that of people passing through the County on their way to or from the Upper Peninsula, who perhaps stop in the County to eat meals or buy gas.

The City of Cheboygan has not been developed as a resort town. Only in recent years has a public beach been developed on the Lake Huron shore. It is not a resort center or a destination for tourists as is Petoskey or Traverse City. It is only a local trading center and a service stop for tourists. It has potentialities as a tourist center which could be developed extensively.

The largest item that the County residents need from other areas is retail consumers' goods. Many of these are produced outside the region, however. Although retail outlets seem purely local in character at first thought, they are in reality only a storage point between a distant producer and the consumer and are thus responsible for interregional trade relationships (Stone and Hoover, 1942).

Not enough information is readily available to set down a complete balance sheet for 1950 comparable to the one for 1940 by Stone and Hoover (1940) presented in Table 18. However, nearly all income by sources for 1950 (or other post-war years) is compared with that for 1940 in Table 19. Wages and salaries from manufacturing in 1947 were more than triple those of 1939 when compared by adjusting the totals to the respective price indexes. The income from agriculture in 1949 increased almost 50 per cent when compared with that for 1939 on a comparable basis.

The expenditures for recreation in the County were an estimated $750,000 in 1950. This figure includes amounts spent for overnight accommodations and other services, such as boat rentals, guiding, camp fees, and caretaker service.[1] When adjusted to price indexes, the income from recreation for 1950 is approximately 22 per cent greater than the 1940

---

[1]This analysis of income from recreation does not include the expenditures for retail goods by tourists because retail sales are listed separately. The total spent on recreation is, therefore, the estimated amount spent for services, $750,000, and that for consumers' goods, $1,500,000, making a total of $2,250,000.

TABLE 19

ANNUAL INCOME FOR CHEBOYGAN COUNTY

1940, 1950[a]

	1940	1950
Manufacturing	$242,000[b]	$1,268,000[c]
Wages and salaries		
Value, 1935-1939=100	243,500	759,000
Agriculture	462,079[b]	1,177,925[d]
Value, 1935-1939=100	465,000	692,000
Recreation	360,000	750,000
Value, 1935-1939=100	359,000	438,000
Retail Sales[f]	1,318,000	11,575,689
Value, 1935-1939=100	1,316,000	6,755,000
Social Aid	550,000	750,000
Value, 1935-1939=100	548,000	438,000

[a]Sources: U.S. Bureau of Census, Census of Manufactures, 1947; U.S. Census of Agriculture, 1940 and 1950; Recreation figure from Stone and Hoover (1940); Retail Sales computed from sales tax returns given in annual report by the Michigan Department of Revenue; Social Aid costs obtained from the annual financial reports of Michigan County Government.

Values deflated according to cost-of-living index, 1935-1939=100, 1940=99.4, 1950=171.2.

[b]1939 figure. [c]1947 figure. [d]1949 figure.

[e]Estimated by author. This estimate includes $250,000 spent for tourist accommodations in cabin courts (see Table 42); an estimated $250,000 spent by tourists at resort hotels and commercial hotels (half the total annual income of all hotels); and an estimated $250,000 spent for other services such as guiding, boat rental, and caretaker service for summer residences.

[f]Expenditures for consumer goods by residents are outpayments, but the profit to the local merchants from sales to tourists are inpayments.

figure computed by Stone and Hoover (1940). Social aid costs adjusted according to price indexes for the years 1940 and 1950 show a 20 per cent decline. Other inpayments cannot be estimated here.[1]

The only outpayment listed in Table 19 is that for retail sales, the largest of all spending categories. In 1940 the total annual sales amounted to $1,318,000 while for 1950 they were $11,575,689, as computed from sales tax returns. When adjusted according to price indexes, total sales were five times greater in 1950.

The Effect of Down-State Metropolitan Areas

One of the most important effects of metropolitan areas in southern Michigan on Cheboygan County is the population pressure on the recreation resource. People who go to Cheboygan County to fish outnumber those who go there for any other recreational pastime. An estimated 15,000 out-of-county residents of Michigan fish in the County yearly. At least 3,000 deer hunters come to the County to hunt, but these come from rural as well as urban areas in the southern part of Lower Michigan. Griggs (1940) estimated that 24,000 transient deer hunters passed through Cheboygan County annually en route to the Upper Peninsula in the 1939 and 1940 hunting seasons. By 1952 the number of deer hunters had more than doubled (see Table 47).

---

[1]For 1940, the "Other" inpayment shown in Table 18 was computed by subtracting the total of all computed inpayments from total outpayments. Total outpayments cannot be computed for a post-war year without extensive field work.

The demand for real estate by non-residents of the County for summer homes has taken up practically all available lake shore property in the County. The summer residents pay relatively high local taxes which have approximately tripled in the last 15 years. The assessed valuations on summer residence property are among the highest of all rural assessments.

The persons holding recreational property in Cheboygan County comprise the largest group of non-resident taxpayers. Rutherford found in 1940 that lands on which summer homes and resorts are located comprised 5.7 per cent of the rural area but contributed 30 per cent of the assessed rural valuation. At that time the valuation per acre for this use was $51.59.

The people of down-state metropolitan areas who visit Cheboygan County help to increase retail sales about 75 per cent in the summer months (see Table 13). The southern industrial counties also help to defray costs of local government in the northern areas through the distribution of tax money by the State. The per capita costs of local government are higher and economic opportunity is less in sparsely populated areas, such as Cheboygan County.

The relatively large number of persons 20 to 50 years of age working in industrial areas down-state leaves an abnormally high percentage of youths and old people in the County population who require public assistance. This

fact accounts in part for the high social aid costs in Cheboygan County. Other factors contributing to this cost are inadequate medical attention and lack of economic opportunity in the older age groups.

In August, 1949, a traffic survey made during two four-hour periods on different days of the week resulted in a count of 1,097 cars going north into Cheboygan County on U.S. Route 27 (see Table 20).[1] These autos carried about 2,800 passengers or an average of 2.6 passengers per vehicle.

The volume of traffic varies markedly throughout the year (see Fig. 7). The average 24-hour flow in March, 1950, was 480 while in August the figure reached 3,500. Through the first quarter of the year, traffic volume is at low ebb and more stable than at any other time. It begins to rise in April but increases most rapidly in late June, culminating with the July 4th traffic. After a minor decline the volume reaches another peak in early September with Labor Day traffic. It declines sharply by the third week in September when schools open, stabilizes for several weeks during the "color season" and then drops off until mid-November when the deer hunters account for a minor peak.

Of the cars north-bound into Cheboygan County on U.S. Route No. 27, more than 27 per cent were registered in other states. Judging from the sample tabulated in Table 21, between 45 and 60 per cent of the out-of-state autos carried Ohio licenses. Week-end travel is heavier than travel

---

[1]This survey was performed by the author. U.S. Route No. 27 is the principal highway entering Cheboygan County from the south.

TABLE 20

ALL TRAFFIC TALLIED BY DIRECTION TRAVELED IN TWO FOUR-HOUR PERIODS*

Direction	Saturday August 6, 1949 10:00 AM-2:00 PM		Tuesday August 9, 1949 11:00 AM-3:00 PM		Total Number
	Number	Per Cent	Number	Per Cent	
North-bound	667	54.8	430	59.3	1,097
South-bound	571	46.2	295	40.7	866
Total	1,238	100.0	725	100.0	1,963

*Includes buses, trucks, commercial vehicles, autos with trailers, and out-of-state passenger cars whose state of residence could not be ascertained from the license plates. These miscellaneous vehicles comprised about 5 per cent of the total vehicular traffic on both days.
All north-bound autos were tallied by state of origin, by county of registration in Michigan, and number of passengers. South-bound cars were tallied by number only.

during the first five days of the week. The sample would indicate that south-bound traffic volume is about 80 per cent of north-bound traffic in daytime during the summer.[1]

In the traffic sample the autos registered in Michigan comprised almost 73 per cent of all north-bound traffic. Wayne County cars supplied 43 per cent of the north-bound traffic on a Saturday and 37 per cent on a Tuesday (see Table 22). Other urban counties in industrial southeastern Michigan including Oakland, Genesee, Ingham, Saginaw, and

[1]There is a heavy flow of traffic southward on Sunday evenings.

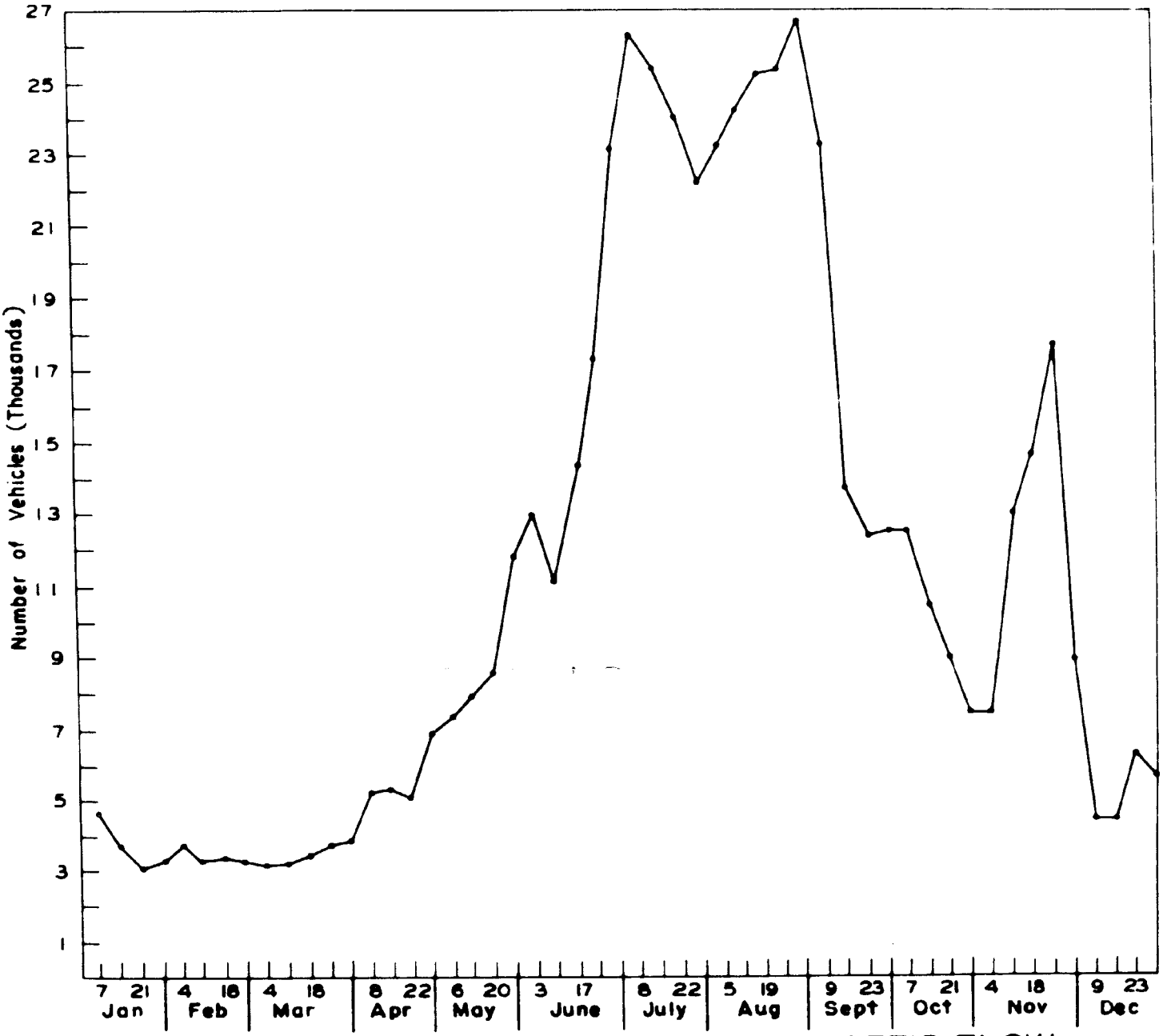


FIG. 7 WEEKLY TWO-DIRECTIONAL TRAFFIC FLOW ON U.S. ROUTE NO. 27, CHEBOYGAN COUNTY

(Figures taken from counter at south edge of County)
1950

TABLE 21

NUMBER OF OUT-OF-STATE PASSENGER AUTOMOBILES ENTERING CHEBOYGAN COUNTY FROM THE SOUTH ON U.S. NO. 27 AUGUST 6 AND 9, 1949

State of Origin	Saturday, August 6 10:00 AM-2:00 PM			Tuesday, August 9 11:00 AM-3:00 PM		
	Number of Autos	Per Cent of All Autos	Number of Passengers	Number of Autos	Per Cent of All Autos	Number of Passengers
Ohio	91	58.9	272	61	46.0	161
Indiana	15	9.7	50	17	12.8	51
Ontario	15	9.7	37	5	3.8	10
Illinois	7	4.5	18	8	6.1	20
New York	7	4.5	15	7	5.3	15
Florida	4	2.6	12	3	2.3	5
Virginia	2	1.3	8	3	2.3	8
Pennsylvania	2	1.3	6	8	6.1	24
Texas	2	1.3	6	2	1.5	5
Other	10	6.2	26	18	13.8	47
Total	155	100.0	450	132	100.0	346

Macomb Counties contributed 25 per cent of the traffic volume on Saturday and 24 per cent on Tuesday (see Fig. 8). Many of the people from these urban areas no doubt are bound for recreational objectives. Their vehicles account for perhaps much more than 50 per cent of the increased flow of traffic during the summer months in Cheboygan County.

The higher volume of traffic during the week-end as compared with a week day is due to the fact that down-state

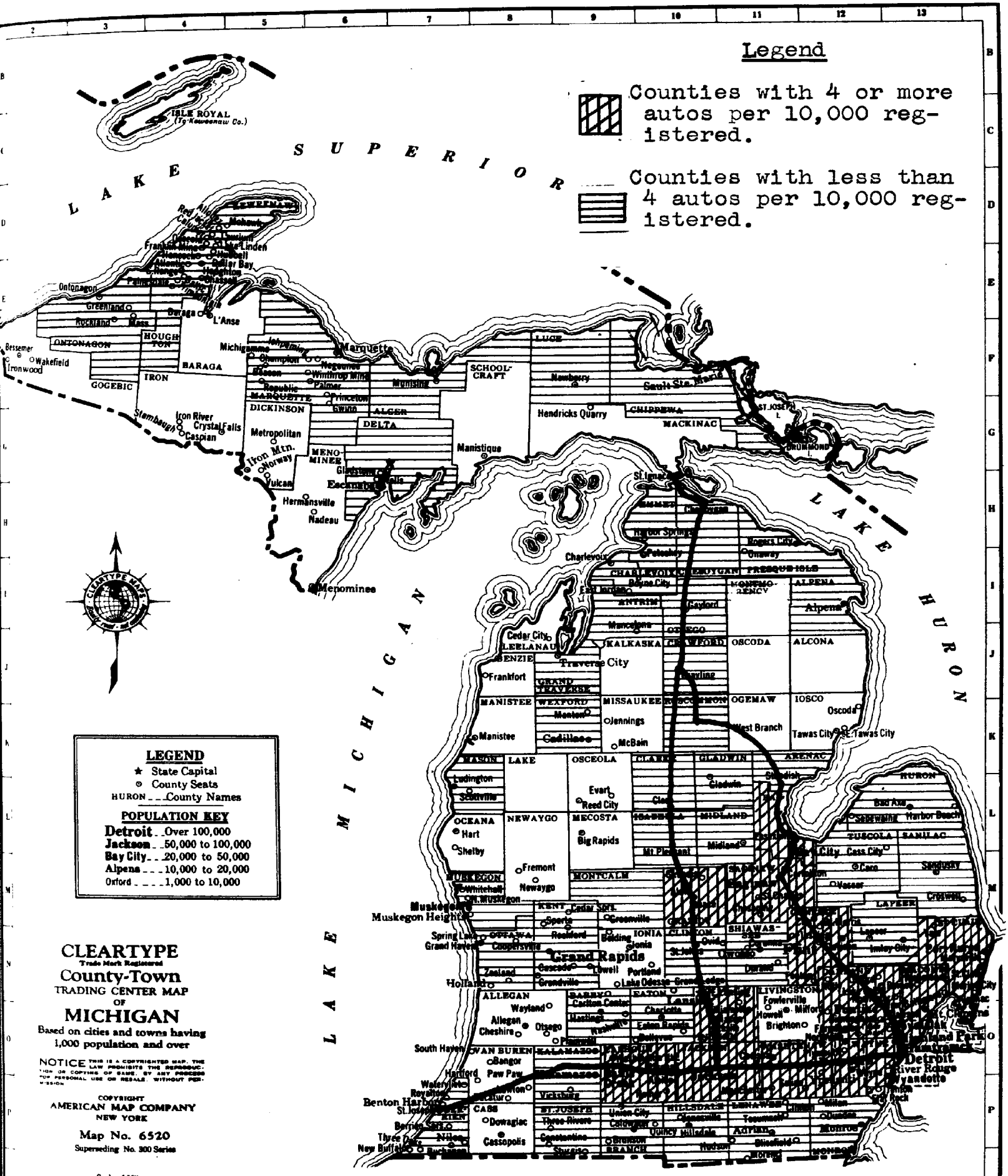

Legend
Counties with 4 or more autos per 10,000 registered.
Counties with less than 4 autos per 10,000 registered.
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
ISLE ROYAL (To Keweenaw Co.)
KEWEENAW
ONTONAGON
GOGEBIC
IRON
BARAGA
HOUGHTON
MARQUETTE
DICKINSON
MENOMINEE
DELTA
SCHOOLCRAFT
LUCE
ALGER
CHIPPEWA
MACKINAC
Marquette
Manistique
Menominee
Escanaba
Iron Mtn.
Iron River
Crystal Falls
Caspian
Stambaugh
Ironwood
Bessemer
Wakefield
Hermansville
Nadeau
Newberry
Sault Ste. Marie
Hendricks Quarry
St. Ignace
Mackinaw City
Petoskey
Charlevoix
Boyne City
East Jordan
Gaylord
Cheboygan
Presque Isle
Alpena
Grayling
Cedar City
Leelanau
Traverse City
Frankfort
Manistee
Cadillac
McBain
Jennings
West Branch
Tawas City
East Tawas City
Oscoda
Evart
Reed City
Big Rapids
Mt. Pleasant
Midland
Bay City
Saginaw
Caro
Cass City
Bad Axe
Harbor Beach
Sandusky
Vassar
Croswell
Lapeer
Imlay City
Fowlerville
Howell
Milford
Brighton
Detroit
Dearborn
Wyandotte
River Rouge
Ecorse
Trenton
Grosse Ile
Monroe
Dundee
Milan
Tecumseh
Adrian
Blissfield
Hudson
Quincy
Coldwater
Union City
Three Rivers
Sturgis
Centreville
Constantine
Mendon
Vicksburg
Kalamazoo
Portage
Paw Paw
Bangor
Hartford
Watervliet
Benton Harbor
St. Joseph
Berrien Springs
Niles
New Buffalo
Dowagiac
Cassopolis
Allegan
Wayland
Otsego
Plainwell
Holland
Zeeland
Grandville
Grand Rapids
Rockford
Sparta
Greenville
Ionia
Belding
Lowell
Portland
Ludington
Scottville
Hart
Shelby
Fremont
Newaygo
Whitehall
Muskegon
Muskegon Heights
Spring Lake
Grand Haven
Coopersville
Charlotte
Eaton Rapids
Battle Creek
Marshall
Albion
Hastings
Carlton Center
Delton
Otsego
Cheshire
Lake Odessa
Greenville
Sheridan
Stanton
Carson City
Mt. Pleasant
Clare
Gladwin
Harrison
Roscommon
Houghton Lake
Grayling
Mio
Oscoda
Alcona
Iosco
Ogemaw
Missaukee
Wexford
Manton
Kalkaska
Crawford
Otsego
Antrim
Charlevoix
Emmet
Cheboygan
Presque Isle
Montmorency
Alpena
Arenac
Gladwin
Clare
Isabella
Midland
Bay
Saginaw
Tuscola
Sanilac
Huron
Lapeer
Genesee
Shiawassee
Clinton
Ionia
Kent
Ottawa
Allegan
Barry
Eaton
Ingham
Livingston
Washtenaw
Wayne
Monroe
Lenawee
Hillsdale
Branch
St. Joseph
Cass
Berrien
Kalamazoo
Van Buren
Muskegon
Oceana
Mason
Lake
Osceola
Newaygo
Mecosta
Isabella
Gratiot
Shiawassee
Genesee
Macomb
St. Clair
Lenawee
Jackson
Calhoun
Kent
Ottawa
Ionia
Clinton

TABLE 22

RESULTS OF AUTOMOBILE TRAFFIC SURVEY IN CHEBOYGAN COUNTY, MICHIGAN, AUGUST 6 AND 9, 1949

County of Origin	Saturday, August 6 10:00 AM-2:00 PM			Tuesday, August 9 11:00 AM-3:00 PM		
	Number of Autos	Per Cent of All Autos	Number of Passengers	Number of Autos	Per Cent of All Autos	Number of Passengers
Wayne	208	43.3	540	103	37.2	256
Oakland	45	9.4	117	18	6.5	40
Genesee	23	4.8	73	19	6.9	46
Ingham	21	4.4	55	15	5.4	48
Saginaw	17	3.5	47	5	1.8	16
Macomb	15	3.1	45	10	3.6	32
Otsego	13	2.7	24	10	3.6	15
Calhoun	12	2.5	39	3	1.1	6
Jackson	12	2.5	40	6	2.2	15
Bay	11	2.3	33	6	2.2	17
St. Clair	10	2.1	31	2	0.7	3
Washtenaw	9	1.9	28	6	2.2	13
Gratiot	6	1.2	23	6	2.2	17
Tuscola	2	0.4	5	6	2.3	18
Cheboygan	1	0.2	1	7	2.5	11
Others	76	15.7	220	55	19.6	131
Total	481	100.0	1,321	277	100.0	684

residents drive north to summer homes for week-ends or take short trips to northern recreational areas. On Sunday evenings throughout the summer the long unbroken streams of traffic moving south from the Straits of Mackinac to Lansing, Bay City, Saginaw, Flint, and Detroit attest the high recreational values found in northern Michigan.

Table 23 lists the 12 counties in the traffic survey with the highest rates of representation. Gratiot County was highest with 11.3 autos per 10,000 passenger cars registered. This county is approximately 140 miles south of Cheboygan County and U.S. Route No. 27 passes through it.

Although Wayne County in 1950 had 38 per cent of the State's population, this extensive urbanization and concentration of industry did not cause it to have a very high rate of representation in the sample. The reasons involved include factors which are not within the sphere of this dissertation. However, Wayne County had almost 38 per cent of all passenger autos registered in the State in 1949 and supplied 41 per cent of the traffic, yet only 4.3 cars per 10,000 registered were counted in the sample. Forty-three other counties represented in the survey had on the average 2.6 cars per 10,000 registered and 1.9 passengers per 10,000 persons of the population.

General conclusions are that urban people seek recreation in Northern Michigan in greater proportion than do people in rural counties. Whether urbanites have more free time, more financial reserves, or a greater need for recreation can only be surmised.

The urban counties in the southeastern part of Michigan and Ohio use U.S. Route No. 27 as the most direct approach to the Straits of Mackinac. Fig. 9, indicating the average 24-hour traffic flow, shows that U.S. No. 27 in

TABLE 23

RATE OF REPRESENTATION OF AUTOS AND PASSENGERS

BY COUNTIES IN THE TRAFFIC SAMPLE*

County	Passenger Automobile Registration 1949	Number of Autos in Sample	Number Cars per 10,000 Registered	County Population April 1, 1950	Number of Passengers	Number of Passengers per 10,000 Population	Distance from Cheboygan County
Gratiot	10,626	12	11.3	33,429	40	12.0	140
Bay	24,661	17	6.9	88,461	50	5.7	135
Ingham	54,751	36	6.6	172,941	103	6.0	190
Jackson	33,283	18	5.4	107,925	55	5.1	230
Genesee	82,882	42	5.1	270,963	119	4.3	185
Oakland	127,214	63	5.0	396,001	157	4.0	215
Saginaw	44,686	22	4.9	153,515	63	4.1	150
Macomb	54,182	25	4.6	184,961	77	4.2	240
St. Clair	28,421	12	4.3	91,599	34	3.7	245
Wayne	717,704	311	4.3	2,435,235	796	3.3	240
Calhoun	35,831	15	4.2	120,813	45	3.7	235
Washtenaw	37,967	15	4.0	134,606	41	3.1	235
Others	656,760	170	2.6	2,181,317	425	1.9	...
Total	1,908,968	758	4.0	6,371,766	2,005	3.2	...

*Based on two four-hour traffic surveys combined.

AVERAGE 24 HOUR TRAFFIC FLOW

ON THE STATE TRUNKLINE SYSTEM

1949

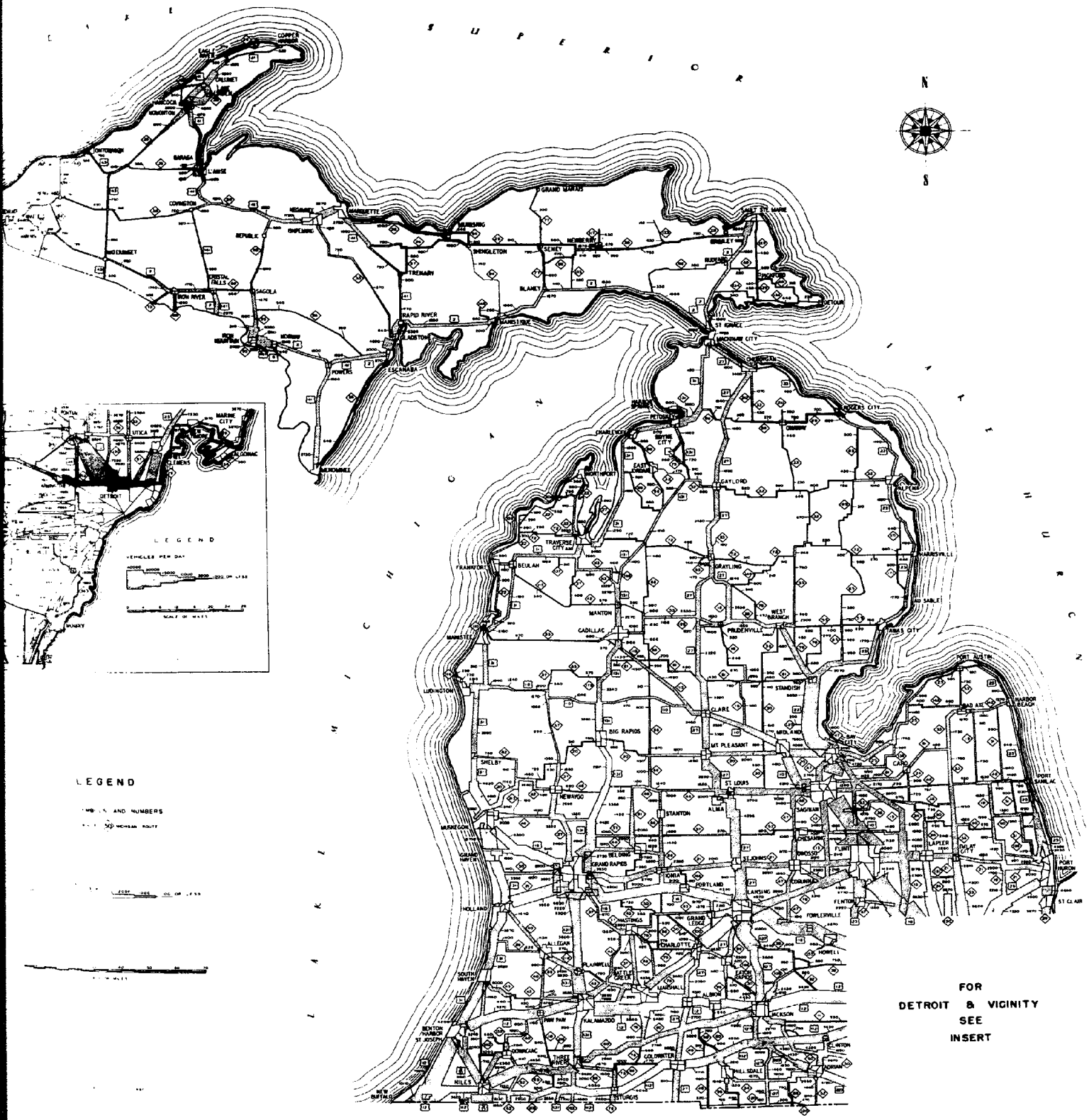


Fig. 9

MICHIGAN STATE HIGHWAY DEPARTMENT · CHARLES M. ZIEGLER · STATE HIGHWAY COMMISSIONER

southern Cheboygan County has 70 per cent more traffic than U.S. No. 31 between Petoskey and Mackinaw City. Autos from southwestern Michigan, Indiana, and Illinois use U.S. Route Nos. 131 and 31 to reach the Straits.

This survey indicates the counties of residence in Michigan and the states of residence of persons who make use of Cheboygan County's recreational resources and facilities and who contribute to the relatively high volume of retail sales during summer months.

COUNTY GOVERNMENT

Cheboygan County has four levels of local government, which in 1950 included 59 units (Ford, 1940). These are composed of 37 school districts, 19 townships, 1 city, and 2 villages. For the 1950 census population there was one unit for every 230 persons. The average for the State of Michigan was approximately one for every 600 persons.

Tax Base

The County's equalized valuation was higher in 1951 than in any other year (see Table 24). Valuations declined during the 1930's as a result of the general economic depression. The high rate of tax delinquency brought about the deeding of over 75,000 acres to the State of Michigan in 1939. Although the population and number of farm units increased during the thirties, the high rate of reversion and the general decline in valuation per unit decreased the total valuation to a low of $6,800,000 in 1938.

The doubling of the County's equalized valuation in the three years from 1948 to 1951 resulted from increased valuations for each assessed unit. Recreation property, especially that with summer-home developments, has had the highest increase. In Tuscarora Township at the south end of Burt Lake, the assessments have been raised so much on

TABLE 24

CHEBOYGAN COUNTY EQUALIZED VALUATIONS, TAX LEVIES, AND RATES, 1900-1951*

Year	Equalized Valuation	Tax Levy	Rate
1900	$ 3,826,000	$123,360	$32.20
1923	10,201,000	411,710	40.33
1930	8,401,000	436,897	52.00
1938	6,860,000	158,838	23.15
1948	10,006,000	85,235	8.52
1951	23,985,000	142,570	5.95

*Sources: Robert S. Ford and Frank M. Landers, 1940. Local Government in Cheboygan County (University of Michigan, Bureau of Government), p. 14; Auditor General of Michigan, Financial Report of Michigan County Government for the Year Ending December 31, 1951 (Lansing: State Printing Office, 1948, 1951), p. 9.

summer residence property that some owners are selling. This inequity of assessment results in an injustice to the summer residents and to the Township and the County, for summer residence is the highest use of the lands bordering the large inland lakes. The reverse situation is also extant--that summer residences in other townships are assessed as low as one-tenth of their market value.

Since 1930, tax levies have declined and State aid has increased so that even though the valuation has tripled since 1938, the rate dropped to about 6 mills in 1951.

Collections averaged 80 per cent with little variation from 1947 to 1951. In 1949 the average valuation for 40 acres of rural land (calculated from a sample of 56 40-acre parcels distributed by land types) was $325.00 with an average tax of $4.78 (see Table 74).

Cost of County Government

Education cost $33.65 per capita in Cheboygan County in 1951, or 56 per cent of total County expenditures (see Table 25). This amount was the lowest spent for this function among six other selected counties representing urban, agricultural, forested, and mining areas. Cost for highways was the second largest per capita expenditure for Cheboygan County. It was almost double the average for all counties. The per capita cost for administration and operation was very close to the average for all counties in Michigan and welfare and medical assistance costs were somewhat below average. Total cost per capita for all government functions including education was next to the lowest for the counties compared in Table 25.

State Aid

State aid to Cheboygan County has increased substantially since 1930 as shown in Table 26. It more than doubled on a percentage basis from 1930 to 1938 during the depression years when the tax moratoria were effective. By 1948 it had increased slightly but then dropped 10 per cent

TABLE 25

ANNUAL PER CAPITA EXPENDITURES BY CHEBOYGAN COUNTY FOR GOVERNMENT FUNCTIONS IN 1951 COMPARED WITH OTHER SELECTED COUNTIES IN MICHIGAN[a]

County	Population	Administration and Operating Costs	Maintenance and Construction of Highways	Welfare and Medical Assistance	Education[b]	Total Cost[c]	Per Cent State Aid
All counties (average)	76,800	$4.51	$ 6.90	$ 7.44	$39.02	$59.40	35.37
Branch	30,202	4.58	10.57	7.77	42.85	68.92	44.7
Cheboygan	13,731	4.88	13.49	6.77	33.65	59.65	53.8
Iron	17,692	6.79	12.19	10.56	43.90	73.44	39.8
Keweenaw	2,918	8.24	40.17	15.10	34.10	116.60	48.4
Luce	8,147	3.49	14.00	4.30	36.92	58.72	69.0
Oakland	396,001	3.81	4.68	6.70	45.25	61.39	36.1
Oscoda	3,134	8.76	36.40	8.78	52.72	106.68	68.9

[a]Source: Financial Report of Michigan County Government for the year ending December 31, 1951, except educational expenditures.

[b]Education costs obtained from Superintendent of Public Instruction for 1949, the last year for which county government costs were compiled by counties.

[c]Total costs include construction of drains and miscellaneous costs which are not shown.

TABLE 26

PER CENT OF TOTAL COSTS OF COUNTY GOVERNMENT BORNE BY STATE AID IN CHEBOYGAN COUNTY, 1924-1951*

Year	Total Cost	State Aid	Per Cent
1924	$ 510,600	$ 98,400	19.3
1930	506,400	131,600	26.1
1938	545,900	324,200	59.5
1948	343,085	212,040	63.9
1951	357,043	214,500	60.1

*Source: Robert S. Ford and Frank M. Landers, 1940. Local Government in Cheboygan County (University of Michigan, Bureau of Government), for the years 1924, 1930, and 1938. Auditor General of Michigan, Financial Report of Michigan County Government for the years 1948 and 1951 (Lansing State Printing Office).

to 53.8 per cent in 1951. Cheboygan County ranked fifteenth among the counties receiving the highest percentages of State aid in 1951.

Tax Delinquency

County government may affect land use through its efficiency of operation and the resulting costs in terms of taxes. Poorly trained assessors, for example, are one source of inefficiency and a cause of inequitable and unjust taxes. Onerous taxation may induce a shift to more intensive land

use which may ultimately degrade the land and bring about delinquency and a possible change in ownership.

Tax delinquency was first acknowledged as a problem in 1896 when the State of Michigan held its first land sale. The land sold at that time was almost entirely abandoned timber land from which the merchantable white pine had been removed. From 1902 to 1909 over 200,000 acres of abandoned, tax-delinquent lands were transferred to State control. Much of this acreage was sold by the State as farm land at 80 cents per acre.

The acreage under State control steadily increased until about 1915 and then decreased through sales as tax delinquency declined to a low mark in 1920. During the decade after 1920, higher tax levies and the inability of many settlers to make a success of farming during the agricultural depression led to an increase in tax delinquency. In the 1935 levy 5,300 platted descriptions of urban property and 215,954 acres of rural land were delinquent in tax payments which amounted to $59,872 or 35 per cent of the total tax levy in that year. In 1937 the delinquent taxes were equally large.

On May 3, 1939, the State of Michigan advertised for sale 188,658 acres of tax-delinquent land in Cheboygan County. Of this acreage 2,434 acres were sold to private owners, 110,996 acres were redeemed by former owners through

moratorium payments, and the remaining 75,228 acres were deeded to the State (Sturgeon, 1941).

Table 27 indicates that in 1940 more than 4,500 acres reverted to State ownership, but this figure was almost halved in 1941. There was a steady decline in this category to 40 acres in 1946. No delinquent lands were deeded to the State from 1947 to 1950. The biennial report of the Lands Division of the State Conservation Department for 1951-1952 shows 80 acres reverted. Of course the prosperity of the post-war years has had much to do with this desirable trend in reversion.

TABLE 27

AREA OF TAX-REVERTED LANDS IN CHEBOYGAN COUNTY DEEDED TO STATE BY AUDITOR GENERAL, 1940-1952*

Year	Acres
1940	4,527
1941	2,639
1942	1,711
1943	772
1944	133
1945	178
1946	40
1947	0
1948	0
1949	0
1950	0
1951-1952	80
Total	10,080

*Source: Michigan Department of Conservation, Lands Division.

Solvency

The year of peak indebtedness in Cheboygan County was 1922. The City of Cheboygan was the unit which did the most borrowing within the County.

Comparison of debt payments with new borrowings for the years 1924, 1930, and 1938 revealed that debt payments consistently exceeded new debt accumulations. By 1948 both the County and the City of Cheboygan were out of debt.

RURAL LAND USE

The most important rural land uses in Cheboygan County are timber production, recreation, and agriculture. State forest lands comprise 38.7 per cent of the County, private timber lands 12.6 per cent, agriculture 27.6 per cent, and private recreation lands 14.7 per cent (see Table 28). State forest lands also support extensive recreation.

From 1938 to 1950 State forest lands increased by 60,000 acres; lands in agriculture decreased 2,400 acres; and those held speculatively declined by approximately 107,000 acres. In the same period the area of lands held for private timber production almost doubled, while private recreation lands more than doubled in area. There were no abandoned lands or federal lands in the County in 1950.

Agriculture

Agriculture is the most important use of private land in Cheboygan County according to area. However, if State forests are included in total forest land area and in total recreation area, then agriculture would rank third in importance on the basis of area devoted to each use. The industry is slowly adjusting itself to the capability of the land. It has made its best progress in the period of prosperity since World War II with the aid of State and

TABLE 28

CLASSIFICATION OF CHEBOYGAN COUNTY LANDS ACCORDING TO USE, 1938 AND 1950

Use	1938[a]		1950	
	Acres	Per Cent of Total	Acres	Per Cent of Total
Abandoned	10,242	2.3	0	0.0
Farming	127,746	28.0	125,331	27.6
Recreation (pvt.)	29,051	6.4	67,002[b]	14.7
Timber (pvt.)	30,071	6.6	57,957[c]	12.6
Speculation	127,714	28.0	20,000[c]	4.4
Federal	5,472	1.2	0	0.0
State Forests, Parks, etc.	116,595	25.5	176,694	38.7
Other Public, Business, Industrial	9,090	2.0	9,090	2.0
Total	455,982	100.0	455,982	100.0

[a]Figures for 1938 taken from W. F. Ramsdell's research in land use in Cheboygan County.

[b]Comprised of fishing and hunting lands, summer cottage ownerships, public parks, and golf grounds.

[c]Estimated by author.

federal governments providing educational programs and financial assistance.

Number of Farms and Farm Acreages

The number of farms in Cheboygan County reached a peak in 1910 with 1,499 (see Table 29). By 1930 the

NUMBER OF FARMS AND FARM ACREAGES IN CHEBOYGAN COUNTY, 1860-1950*

Date	Number of Farms	Total Acreage	Farmland as Per Cent of Total County Area	Average Size of Farms	Acres of Farmland Improved	Per Cent of Total Farmland Improved
1860	30	2,933	0.6	97.8	573	19.6
1870	31	3,576	0.8	115.3	1,423	39.8
1880	343	34,351	7.4	100.1	8,964	26.1
1890	775	62,123	13.4	80.2	21,800	35.1
1900	1,164	95,689	20.6	82.2	35,379	37.0
1910	1,499	120,418	26.0	80.3	50,925	42.3
1920	1,186	127,197	27.4	107.2	55,937	44.0
1930	1,052	115,141	24.8	109.4	53,476	46.3
1935	1,234	128,033	27.6	102.7	58,822	45.9
1940	1,122	131,408	28.3	117.1	65,409	49.8
1945	1,110	139,198	30.0	125.4	76,879	55.2
1950	855	125,331	27.0	146.6	60,464	48.2

*Source: U.S. Bureau of the Census, agricultural volumes for the years 1860-1950.

number had decreased to a low of 1,052, but in the next five years there was an increase to 1,234 brought about by the population movement back to rural areas during the depression. The figure for 1950 is 855 farms, a new low mark indicating that there has been a movement to urban areas.[1]

The total acreage in farms had increased steadily from 1860, until a decrease took place in 1930 reflecting a low rural population during the agricultural depression of the 1920's. By 1945 the land in farms comprised 30 per cent of the total County area, the highest figure yet attained. However, in 1950 it declined to 27 per cent. The amount of improved farmland also decreased slightly in 1930 to interrupt the steady rise, but otherwise it increased consistently from 20 to 55 per cent of total farmland in the years 1880 to 1945. In 1950, however, it dropped to 48 per cent indicating the addition of unimproved land to farms.

The average size of farms increased from 80 to 146 acres in the years 1910 to 1950, with a temporary decrease in 1935 when many people moved back to the land during the economic depression. In periods with a high rate of population increase in Cheboygan County, such as 1880-1890 and to some extent 1930-1940, the average size of farms declined. However, the years 1945 and 1950 showed a decided upswing

---

[1] Part of the decrease in number of farms in 1950 is due to the change in definition of a farm by the U.S. Census.

with respect to this factor, from 117 acres in 1940 to 125 in 1945 and 146 in 1950.

Table 30 shows the number of farms by size classes and demonstrates the fact that the average size of farm, found by dividing the total acreage by the total number, is not always an indication of the size class in which the greatest number of farms fall. In the census years 1890-1910, the highest number of farms was in the "20-49" class, most of which were probably 40 acres in size. From 1920 through 1945 the "50-99" acres class included the largest number of farms, of which the 80-acre size no doubt was predominant. In 1950 the greatest number of farms was found in the "100-179" acres class, indicating that a larger size of farm unit is slowly evolving because of the need for extensive rather than intensive agriculture in the County

Farmland According to Use

Table 31 compares the acreages in cropland, pasture, and woodland for the census years 1930 through 1950. The cropland figure of 39,333 acres for 1950 is the lowest for any year listed. Area devoted to pasture decreased from 66,472 acres in 1945 to 57,847 acres in 1950. Plowable pasture increased more than 6,000 acres from 1945 to 1950, while other pasture not wooded decreased from 20,047 to 3,830. The decreased acreage in both cropland and pasture for 1950 reflects the 10 per cent reduction in total farm area.

TABLE 30

NUMBER OF FARMS ACCORDING TO SIZE, 1860-1950[a]

Census Year	Size Classes (Acres)										
	Under 3	3-9	10-19	20-49	50-99	100-179	180-259	260-499	500-999	1000-	Total
1860	...	8	13	5	4	...[b]	...	...	...	...	30
1870	...	1	3	17	7	3[b]	...	...	...	...	31
1880	1	6	4	79	141	112[b]	...	...	...	...	343
1890	2	11	24	290	268	176[b]	...	...	4	...	775
1900	6	23	35	430	392	193	50	30	4	1	1,164
1910	2	33	56	536	495	290	54	29	4	...	1,499
1920	...	18	32	319	415	277	79	36	8	2	1,186
1930	2	18	33	262	379	230	77	44	6	1	1,052
1935	1	49	93	244	390	314	97	39	6	2	1,234
1940	2	32	86	211	371	281	91	44	2	4	1,122
1945	...	68	72	169	301	285	120	83	7	5	1,110
1950	4	11	19	136	231	255	114	68	12	5	855

[a]Source: U.S. Bureau of the Census. (The average acreage for each census year lies within the underlined figure.)

[b]According to the U.S. Census tables, these figures belong in the class, 100-499.

TABLE 31

FARMLAND ACCORDING TO USE, 1930-1950*

Use	1930		1935		1940		1945		1950	
	Acres	Per Cent	Acres	Per Cent	Acres	Per Cent	Acres	Per Cent	Acres	Per Cent
Cropland - total	41,960	36.4	44,770	35.3	42,432	32.2	45,417	32.6	39,333	31.4
Cropland harvested	36,488	31.6	40,597	32.0	37,228	28.3	41,147	29.5	32,300	25.8
Crop failure	762	0.7	858	0.7	251	0.2	320	0.2	0	0
Cropland idle	4,710	4.1	3,315	2.6	4,953	3.7	3,950	2.9	7,033	5.6
Pasture - total	53,203	46.2	...	...	...	...	66,472	47.8	57,847	46.2
Plowable pasture	11,516	10.0	14,052	11.1	22,977	17.5	11,415	8.2	17,301	13.8
Wooded pasture	34,904	30.3	...	...	...	...	35,010	25.2	36,716	29.3
Other pasture	6,783	5.9	...	...	...	...	20,047	14.4	3,830	3.1
Woodland - total	47,618	41.4	56,553	44.6	34,394	26.2	55,957	40.1	59,376	47.3
Woodland pastured	34,904	30.3	...	...	...	...	35,010	25.2	36,716	29.3
Woodland not pastured	12,714	11.1	...	...	...	...	20,947	15.0	22,660	18.0
All other land	7,264	6.3	11,339	9.0	31,605	24.1	6,362	4.6	5,491	4.4
Total land in farms . .	115,141	100.0	126,714	100.0	131,408	100.0	139,198	100.0	125,331	100.0

*Source: United States Bureau of the Census Volumes on Agriculture, 1930 and 1950.

Complete information for the table for the years 1935 and 1940 is not available.

The only increase in acreage in the three types of agricultural use in 1950 was in woodland area. The year 1950 had the largest acreage in this use of any census year when woodland comprised 47.3 per cent of all farmland. The area of woodland pastured increased by 1,700 acres to 36,716 acres from 1945 to 1950. Almost 62 per cent of all woodlands were pastured in 1945 and 1950, the lowest percentage in this use since 1920.

Table 32 gives the average acreage per farm in cropland, pasture, and woodland use. Since 1930 the average area per farm devoted to crops has increased roughly from 40 to 46 acres, pasture land from 50 to 67 acres, and woodland from 12 to 26 acres. The rate of adjustment to larger and more economic units was somewhat greater from 1945 to 1950 than from 1930 to 1945.

Types of Farms

The United States Bureau of the Census in 1950 listed 422 farms (almost 50 per cent) in Cheboygan County under the heading "miscellaneous."[1] Dairy farms numbered 283, the largest distinctive type. There were 78 "general" farms and 57 specializing in the production of livestock. Farms producing grain for sale totaled 10, and there were 5 fruit farms. It is difficult to determine any trend in types using the United States Census classification for 1950.

---

[1]The U.S. Census tabulation for 1950 used a different classification scheme than that for previous census years, making comparison very difficult.

TABLE 32

AVERAGE ACREAGE PER FARM IN VARIOUS AGRICULTURAL USES 1930, 1945, AND 1950*

Use	Acres		
	1930	1945	1950
Cropland	39.8	40.8	46.0
Pasture	50.5	59.9	67.7
Woodland (not pastured)	12.1	18.9	26.5
Other	6.9	5.7	6.4
Total	109.3	125.3	146.6

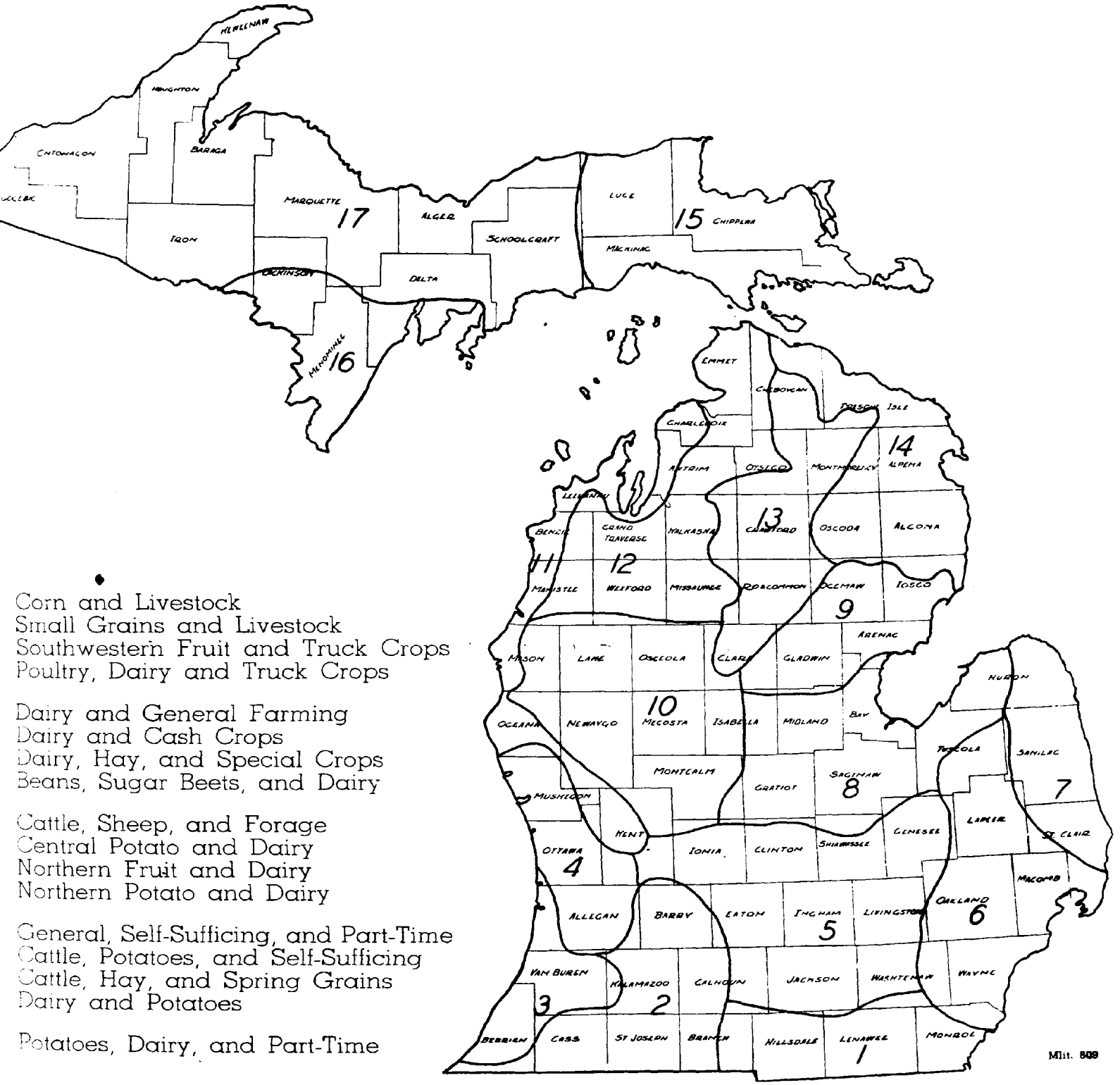
*Source: Computed from figures given by the United States Bureau of the Census for 1930, 1945, and 1950. Obtained by dividing total area in each use in the County by the total number of farms for each year.

Figure 10 shows a classification of the State of Michigan by types of farming areas.[1] It classifies the western one-third of the County in the "Northern Potato and Dairy" farm type; the south-central portion in "General, Self-sufficing and Part-time" farms; and the north and eastern parts in "Cattle, Potatoes, and Self-sufficing" farm types.

---

[1]This map was prepared by the Agricultural Experiment Station, Michigan State College.

Type of Farming Areas in Michigan



- Corn and Livestock
- Small Grains and Livestock
- Southwestern Fruit and Truck Crops
- Poultry, Dairy and Truck Crops

- Dairy and General Farming
- Dairy and Cash Crops
- Dairy, Hay, and Special Crops
- Beans, Sugar Beets, and Dairy

- Cattle, Sheep, and Forage
- Central Potato and Dairy
- Northern Fruit and Dairy
- Northern Potato and Dairy

- General, Self-Sufficing, and Part-Time
- Cattle, Potatoes, and Self-Sufficing
- Cattle, Hay, and Spring Grains
- Dairy and Potatoes

- Potatoes, Dairy, and Part-Time

Fig. 10

Farm Tenancy

Farm tenancy has never been a serious problem in Cheboygan County (see Table 33). It reached its peak in 1935 (considering only the census years), when more than 10 per cent of the farm operators were tenants. This relatively high rate for Cheboygan County was caused by the movement of people back to the land during the depression. By 1950 tenancy had reached an all-time low of 2.6 per cent.

Economic Farm Units

To determine the acreage needed to provide an average-size farm family with a modest level of living, five farms were chosen on each of two soil types in Cheboygan County.[1] The areas used for crops, pasture, and woodlots on the farms in each group were averaged to determine a "standard" farm unit for each soil type. Table 34 presents the resultant figures for each type of farmland use for units on Onaway loam and Emmet sandy loam. All farms selected were judged to be profitable investments, at least in the post-war period. They were free from debt and all taxes were paid. However,

---

[1]The farms used to define these "standards" were selected by the farm planner of the Cheboygan Soil Conservation District who was thoroughly familiar with the lands and the operators. All farm operators were average to above average in ability and initiative; all belonged to the Soil Conservation District; nearly all had four to six children; and there was an average of 15 cows per farm. Each farm unit was predominantly but not entirely located on one of the respective soil types.

TABLE 33

FARM OWNERSHIP AND TENANCY, 1900-1950*

Census Year	Number of Owners	Number of Part-owners	Number of Tenants	Number of Managers	Total Number Operators	Per Cent Tenants
1900	1,029	65	55	15	1,164	4.7
1910	1,354	71	63	11	1,499	4.2
1920	1,033	69	63	21	1,186	5.3
1930	855	81	78	8	1,052	7.4
1935	987	112	131	4	1,234	10.6
1940	955	88	74	5	1,122	6.6
1945	929	142	31	8	1,110	2.8
1950	726	104	21	4	855	2.6

*Source: United States Bureau of the Census Volumes on Agriculture for the years 1900 to 1950.

farm financial accounts were not considered in qualifying each unit. The only financial criterion taken into account was the solvency of the operator as determined by the farm planner through numerous personal contacts. It must be emphasized that these acreage requirements are averages based on operating farm units.

In general, 58 per cent more land area is required for successful farming on Emmet sandy loam than on Onaway loam. The area of the average farm in Cheboygan County as

TABLE 34

ACREAGE REQUIREMENTS FOR SUCCESSFUL FARM UNITS ON TWO SOIL TYPES, CHEBOYGAN COUNTY*

Use	Emmet Sandy Loam	Onaway Loam
	Acres	Acres
Cropland	70	55
Pasture	..	..
Rotation cropland	30	15
Improved	15	10
Woodland	35	15
Total	150	95

*Source: The records of the Soil Conservation Service, Cheboygan County, Michigan.
A successful farm unit is one which has sufficient income after taxes to maintain the farm in good condition and provide a satisfactory living for the family.

determined from United States Census figures in 1950 was about 146 acres (see Table 29). The average of the two "standard" units is 24 acres less than this figure. The average acreage for size of farm in the same year falls in the "100-179" acreage class (see Table 30).

Onaway loam is the most fertile soil for agriculture in Cheboygan County. About 75 per cent of it is cultivated. It is found usually on gently rolling hills but locally on

broad rolling uplands. The largest areas of it are located in the south central and eastern parts of the County. The drainage is good and the soil is acid to 20-24 inches in depth. Onaway loam is classified by Foster (1939) as well-suited to farming, but it comprises only 12,352 acres, or 2.6 per cent of the County area. Table 35 indicates that, considering all crops, it is about 65 per cent more productive than Emmet sandy loam.

Since soils well suited for farming total 34,240 acres, or 7.4 per cent of the County area, and there were 125,331 acres in farmlands in 1950, a large number of farms are necessarily located on less productive soils (see Table 69). Emmet sandy loam is rated quite high in Class II, but somewhat less than 50 per cent of it is cultivated. It is a soil of the hardwood uplands and plains, rolling to hilly in relief, and found throughout the western half and southern two-thirds of the County. It is acid in the upper horizons but the parent material is alkaline. Including its gravelly phase, it comprises 15 per cent of the County area (Foster, 1939).

Agricultural Marketing

The efficient marketing, processing and utilization of farm products is a major problem of agriculture in Michigan (Mich. Plan. Comn., 1946). One of the most difficult problems for farmers in Cheboygan County is finding markets for farm products. At present no marketing facilities are

TABLE 35

CROP PRODUCTION PER ACRE ON EMMET SANDY LOAM AND ONAWAY LOAM*

Crop	Emmet Sandy Loam	Onaway Loam
	Production Per Acre	
Corn silage (tons)	7	10
Wheat (bushels)	18	30
Oats (bushels)	35	50
Hay (tons)	1.5	2.5
Pasture (acres per cow)	2	1

*Source: The records of the Soil Conservation Service, Cheboygan County, Michigan

available in the City of Cheboygan where farmers can sell directly to townspeople and tourists. Nearly all fresh fruits and vegetables are sold by the chain stores and come from outside the County. Consequently, many farmers are not able to sell produce unless they do house-to-house selling.

The marketing problem becomes more pronounced in the months of June, July, and August, when the population of the County nearly doubles with the influx of tourists (Alchin, 1948). With the increased demand at this time for dairy products, milk is shipped from as far as Saginaw,

Michigan, in paper containers. Eggs are imported from Ohio and Illinois. This market created by tourists exists only two and one-half months of the year and is not long enough to warrant the installation of the proper facilities to process high-quality fluid milk on most farms. The doubled demand for bottled milk during the period from June 15 to Labor Day is supplied by only about 35 producers with proper processing equipment.

Concerted efforts were made in 1948 to improve the marketing facilities for farm products. The Michigan State College Extension Service contacted rural and urban groups to stimulate interest in better marketing facilities and to sample public opinion on the proposed development of a farmers' retail market in the City of Cheboygan. The Junior Chamber of Commerce, organized in 1948, took an interest in the project and made plans to promote such a market. The County Agricultural Committee also discussed the need for and the possible development of a farmers' market. At the same time the County Farm Bureau's Board of Directors asked for assistance in making a survey of the demand for a local market place. The results of the survey indicated that such a market would be feasible and would serve a useful purpose, but none has been established.

After completing an educational program for members in 1948, the Cheboygan Milk Producers' Association was approved for membership in the Michigan Milk Producers' Association, a cooperative marketing agency. As a direct

result of this action members received a 10-cent raise in price for fluid milk. The affiliation with M.M.P.A. is only a step in the right direction, since only 10 per cent of the milk produced in the County is supplied by its members. This step forward is a trend toward the production of whole milk under accepted sanitation standards for the bottle trade.

Dairy Production and the Milk Industry

Table 75 indicates that milk production had increased steadily in the County until a 7 per cent decline occurred in 1950. The sale of whole milk rose from 6 per cent of total production in 1945 to 14 per cent in 1950. In the same period there was a 40 per cent decline in butterfat production and a 70 per cent drop in butter production.

In 1952 the Detroit milk shed was extended in a very limited manner into Cheboygan County. This has come about because cities south of Detroit, such as Cleveland, Toledo, Fort Wayne, and Chicago, have invaded southern Michigan to buy raw milk and thus have displaced the Detroit milk shed northward. Although the amount of whole milk purchased in the County is yet small, an increase in the volume trucked to Detroit is anticipated.

Among other reactions this development may create a demand for more pasture or it may cause a reduction in butterfat marketed, probably the latter. Doubtless some of the acreage in farm woodlots and agricultural crops will

be diverted to pasture use to take advantage of this new economic opportunity. The regular milk check is the largest dependable source of income for the farmer. But those who produce whole milk for public consumption will have to invest in cooling and sanitation facilities.

No doubt if the future finds a substantial number of farmers selling whole milk to the Detroit market, part of the supply during the summer might be profitably diverted to the local summer demand. The selling of whole milk for bottling requires the farmer to adopt rather stringent sanitation practices which are prescribed by the municipality in which the milk is marketed.

Since Cheboygan County farmers are on the periphery of the Detroit market area, their profits will be minimum because of the long transportation distance. A decrease in profit to a point below that from the sale of butterfat or a contraction of the market area might cause expensive installations to become idle. However, with the present upward population trend, there will probably be a rising demand for milk. This will bring about an increase in land area used for pasture in Cheboygan County.

Crop Production

Field grains.--Oats has been the most important grain crop according to acreage planted in Cheboygan County. In 1949, 180,000 bushels of oats were grown on 6,000 acres, a volume almost equal to that of all other grains combined

(see Table 76). Corn was the second most important crop according to area planted in 1939 and 1949. About one-third of the area in corn goes for the production of silage and fodder. New hybrid strains of corn will produce a crop of grain if the season is at all favorable. Wheat was produced on 2,300 acres in 1949 and barley on 1,800 acres. Rye and buckwheat are of minor importance according to area.

The two grain elevators in the City of Cheboygan shipped out 6½ cars (about 10,500 bushels) of wheat in 1948, approximately one-fourth of the total production. The wheat crop for that year was the largest since 1898, with the 1949 production second largest. The County imports more feeds than it exports. Bran and middlings, especially, are shipped in for local use. Some of the oats crop was formerly exported, but the entire production has been used locally in recent years.

Hay is by far the most important crop in Cheboygan County in the amount produced, value, and acreage (see Table 77). Approximately 26,000 acres were used to grow hay in 1949, the largest area in this use in any census year. In 1945 half the hay acreage was in alfalfa. This crop supports the dairy industry, the major source of income for farmers in the County. Prior to 1920 timothy and clover were predominantly grown, but since that time alfalfa has increased steadily in acreage and has helped the dairy business expand.

While the baled hay crop was worth about $500,000 in 1949, the potato crop was valued at $200,000 in the County. The acreage devoted to growing potatoes has decreased by half since 1920 and in 1949 was the lowest since 1890, considering census years. However, the production per acre in 1949 was the highest on record.

The production of maple products has not been important in the County since 1890. In 1940 approximately 4,900 trees were tapped for a yield of 25 pounds of sugar and 520 gallons of syrup. In 1949, 1,407 gallons of syrup were made.

Value of Farm Products Sold

Table 78 indicates that 71 per cent of the value of all farm products sold in Cheboygan County was received from the sale of livestock and livestock products in 1944 and 1949. The sale of dairy products in 1944 was greater by $143,000 than the income from livestock and livestock products. By 1949 the margin had decreased to about $65,000. This trend was no doubt due in large measure to the high beef prices in the post-war period.

Crops sold in 1949 comprised 27 per cent of the value of all farm products sold. Field crops and fruits sold made up 12 per cent each of the total value. Forest crops produced for sale in 1949 amounted to 2 per cent of the total value of all agricultural crops sold and produced

a lower income in 1949 than in 1944 when there was a larger demand for them in war-time.

Livestock

The number of horses has declined from more than 3,200 in 1910 to 860 in 1950 (see Table 79). The 540 tractors on farms in 1950 have replaced horses to a great extent. In 1945 the number of milk cows and other cattle, primarily beef animals, were about equal. By 1950 the number of milk cows had decreased 32 per cent and other cattle had decreased by 15 per cent. There were only 500 sheep and 1,600 hogs in the same year. The decline in number of farms in 1950 has caused the decrease in the number of livestock for the most part.

Forest Production

The volume of pulpwood produced on farms in 1949 was double that for 1929 but was still low at 630 cords (see Table 80). The volume of sawlogs and veneer logs produced was five times larger in the same period. Table 81 indicates that production of all wood products according to value increased in 1944 during World War II but in 1949 dropped back to about the 1939 level (considering price inflation).

Gross Incomes of Farm Families

From a sample of 53 farm families studied in Cheboygan County in 1945, Hoffer found that 34 per cent had gross

annual incomes between $500 and $999, the highest percentage in any one bracket (see Table 36). Only two families had gross incomes over $3,000.

Of the 843 farm operators listed by the United States Census of 1950, 362, or 43 per cent, had other annual incomes exceeding the total value of farm products each sold. In the same year, 425 farm operators reported work off their farms and 243 of these spent 100 days or more in off-farm employment. The average income per operator from products sold in 1950 was $1,400.

Growth of the Soil Conservation District

The Cheboygan County Soil Conservation District was established in 1948. It has developed on the group membership pattern where interested farmers in a local area meet with the farm planner or representative of the board of directors to discuss plans and policies. By February, 1953, approximately 170 farm plans had been produced and initiated and another 30 farmers had made application for plans. This means that about 29 per cent of the farmers owning fifty or more acres are actively interested in improving their lands and farming practices.

Early in 1952 the Soil Conservation Service was merged with the Production Marketing Administration. Prior to that time the Soil Conservation Service completely revised farm operations on applicant's farms by putting the entire farm plan into effect at once. Since the merger became

TABLE 36

ESTIMATED GROSS INCOME OF 53 FARM FAMILIES IN CHEBOYGAN COUNTY, 1945*

Gross Income	Number of Families	PerCent of Total
Under $500	8	15
500-999	18	34
1,000-1,499	12	23
1,500-1,999	4	8
2,000-2,499	6	11
2,500-2,999	3	5
3,000-3,499	0	0
Over 3,500	2	4
Total	53	100

*Source: Charles R. Hoffer, Health and Health Services for Michigan Farm Families (East Lansing: Michigan Agricultural Experiment Station, Special Bulletin 352, 1948), p. 49.

effective, the plan can be carried out in short steps. Some think this step-by-step planning is more efficient.

Soil conservation will have little immediate effect in bringing about an increased total agricultural acreage in the County. However, some farmers will find after their farm plan has been written that they need more pasture in order to manage their lands in accordance with conservation

principles. Certainly some farmers will buy adjacent land from their neighbors so that some economic units will develop at the expense of marginal units.

Status of Homestead Families

During the depression of the 1930's, 13 families homesteaded State land in Forest Township (T.34N.,R.1E.), Cheboygan County. They settled primarily along the road bounding sections 7 and 8. These families had homesteaded 40 to 80 acres for the nominal sum of $10.00 per forty on condition that they build a home and continue to clear the land and improve it for a period of five years. At the end of this time title was to be given to the homesteader by the State if he had "proved up."

In 1937 five families were "proving up." Cows and horses were supplied by the Rural Resettlement Administration. The standard appliance in each home was a cream separator which provided the family with a cash income of from $2.50 to $3.00 per week, not enough to provide payment for the livestock distributed to them by the government. At that time only two families tried to make a living without County relief or W.P.A. work. Certainly a better living could have been had with public assistance (Hunter, 1938).

By 1950 nine families of the original 13 remained on their homesteads. Several had increased their holdings to 80 acres, but only one holding exceeds this figure at present.

Eighty acres of generally poor soil is much too small an area to provide a satisfactory standard of living.

The reputation of the homestead group in the area for willingness to work is certainly not to be commended, although it would be unfair to make general application of this criticism. It was reported that the men would work for a more aggressive neighbor a few days or long enough to earn money for groceries and beer. They were offered work picking fruit on the shares but were not interested.

Many poverty-stricken families driven out of the cities during the last economic depression gravitated to the marginal lands. Such a combination of poor people and infertile soils usually results in continued poverty and human decay because of despair and the mental inhibitions that accompany perpetual disadvantage.

Forestry

Approximately 72 per cent of Cheboygan County is forested. The lands in State forests are essentially the only ones subject to good management at present, although a few private owners are interested in sustained yield. Of the estimated 334,000 acres in forest, approximately 175,000 acres, or 52 per cent, are in State forests; 58,000 acres, or 17 per cent, are in private non-farm timber holdings; 59,375 acres, or 18 per cent, are in farm woodlots; and an estimated 42,000 acres, or 13 per cent, are in private recreation holdings, primarily hunting lands.[1] It is clear that

[1] In 1938 W. F. Ramsdell in his survey of Cheboygan County computed a total of 332,000 acres of land in forest growth.

wood will be a major product in the future and that there will be adequate forests to provide a background for recreation.

The quality of forest lands is generally medium to low due to the sandy nature of the soils and because fires in the past have deteriorated them by burning out much of the organic matter. However, effective fire protection by the Michigan Department of Conservation is allowing the soils to rebuild gradually under a forest cover.

Private forestry has not progressed very far in Cheboygan County toward sustained yield management. There is a growing interest in the production and harvesting of Christmas trees among farmers and owners of small areas of timberland. There are a half dozen or more tracts of timber varying from 80 to 240 acres that are being managed by individuals, such as local realtors and summer residents, to the best of their ability. There are no large commercial timber holdings in the County. Extensive type management plans are now being developed for State forests.

Farmers often do not recognize the values of timber and forest land (Zon and Duerr, 1942). They cut wood for fuel, poles, and posts, and in some instances pulpwood is cut and sold during the winter. Too often the farm woodlot is considered an area where enough wood can be cut and sold to pay the grocery bill or as a place for cattle to browse when the pasture is short.

Area by Forest Types

Table 37 classifies 331,904 acres of forested lands by forest type for Cheboygan County.[1] Over 45 per cent of this area is in the aspen type. The mixed hardwoods type including hard maple, basswood, beech, and elm, and the swamp conifers type containing cedar, spruce, tamarack, and balsam, each comprise 15 per cent of the total forest area. Other recognized types each account for 5 per cent or less. In 1938, 42.8 per cent of the area of forest stands was well stocked, 29.3 per cent had medium stocking, and 27.9 per cent was poorly stocked. At that time 76.4 per cent was in the 0-3" diameter class, 20.0 per cent in 3.1-9" class, and 3.6 per cent in 9.1"+ class.[2]

Volume and Growth

In 1938 the swamp hardwoods had on the average 360 cubic feet of wood per acre, the highest volume of any forest type. The mixed hardwoods were second highest with an average of 327 cubic feet per acre and swamp conifers next with 315 cubic feet. The swamp hardwoods type had the highest growth rate of any type with 33 cubic feet per acre per year.

---

[1]This compilation was made under the direction of Professor W. F. Ramsdell in 1938 for the land use study sponsored by the University of Michigan. Procedure and results were approved by the United States Forest Service Regional Office in Milwaukee. The table provides the best estimates of forest volumes at present, but they are too old to be of practical use.

[2]From W. F. Ramsdell's survey of Cheboygan County.

TABLE 37

AREA, VOLUME, AND GROWTH BY FOREST TYPES
IN CHEBOYGAN COUNTY, 1938*

Forest Type	Forest Area in Acres	Percentage of Total Area Forested	Volume in Cubic Feet per Acre 1938-1948	Growth in Cubic Feet per Acre per Year, 1938-1948	Gross Volume in Cubic Feet per Acre, 1948	Total Volume in Thousand Cubic Feet, 1948
Mixed hardwoods	51,895	15.63	327	23	557	28,883
Hardwood - aspen	18,276	5.51	102	19	292	5,337
Aspen - light soils	36,812	11.11	142	31	452	16,639
Aspen - heavy soils	64,773	19.50	175	23	405	26,233
Aspen - swamp soils	49,719	15.00	175	31	485	24,114
Swamp hardwoods	9,296	2.80	360	33	690	6,414
Swamp conifers	51,372	15.50	315	29	605	31,080
Oak - aspen	18,106	5.46	130	24	370	6,699
Jack pine - oak	8,862	2.64	116	8	196	1,737
Jack pine	9,838	2.96	197	14	337	3,315
Norway - white pines	12,955	3.90	...	...	...	...
Totals . . .	331,904	100.0	...	...	...	150,451

*Source: W. F. Ramsdell's Cheboygan County study.

This table in making estimates for 1948 does not consider any changes in area of forest types nor interim drain. **Stand densities deemed unimportant since growth figures are out-of-date.**

Growth rates for each type were applicable for the ensuing 10-year period. By 1948 the highest total volume of wood was presumably in the aspen type because of its extensive acreage. The lack of drain figures makes volume estimates for 1948 in Table 37 of little value.

Forest Land Quality

Since forestry is generally considered by farmers to be a less intensive and profitable use than agriculture, the growing of trees purposely or incidentally is generally relegated to the poorer soils. Of the 30,000 acres of non-farm lands held privately for growing timber in 1938, almost 74 per cent were in Schoenmann's land type Classes III and IV (see Table 83) which are largely infertile for growing agricultural crops.[1] Of the 175,000 acres of land in State forests at present, approximately 74 per cent fall in Classes III and IV (see Table 53). These low-quality lands are generally either very sandy or swampy.

Planting

Private planting of forest lands is just beginning in Cheboygan County, whereas the Michigan Department of Conservation has been planting trees on State forest lands for more than 30 years (see Table 51). The organization and operation of the Soil Conservation District in Cheboygan County probably has been responsible for initiating an

[1] No recent survey has been made of the quality of private forest lands in Cheboygan County.

interest among farmers in planting trees. In three years of its operation the district has planted 100,000 trees, roughly 80 acres, in farm woodlots. Plantings average two to three acres per farm. Forty farmers had made plantings by the summer of 1951. Eight small forest-tree nurseries have been established on farms in the County to provide local seedling stock. Most of the plantings have been made for the purpose of growing and selling Christmas trees as a cash crop. Scotch pine is currently the popular species for this purpose, although some red pine has been planted.

There are four school forests of 80 acres each in Cheboygan County. Some planting has been done on each of these. There are no County forests. The University of Michigan Biological Station located on Douglas Lake has extensive holdings, 1,200 acres of which were planted under the direction of the late Professor W. F. Ramsdell. This planted area is second in size only to that of State forest lands in the County.

Character of Private Ownership

Farm woodlots vary in size from one acre to more than 120 acres. A few farms have no wooded areas. Those belonging to the Soil Conservation District varied in their areas of woodlots from none to 123 acres with an average of 40 acres. Farmers belonging to the District are generally planning for sustained yield management. In 1940

in all of Cheboygan County the average area of farm woodlots was 30 acres, but by 1950 this figure had increased to 70 acres.[1] Eleven farms were listed by the United States Census of 1940 as receiving most of their income from the sale of forest products.[2]

There were an estimated 58,000 acres of private forest land with non-farm timber intent in 1950 (see Table 28). Probably a small percentage of this area is under good forest management. In September, 1953, there were two tree farms in the County certified by the Michigan Department of Conservation. These comprised a total of 562 acres. Both owners live in southern Michigan cities.

Private owners of forest land other than farmers are fewer in number but own larger areas of timber per holding. One individual, for instance, makes a living by cutting pulpwood and other forest products from an ownership of 240 acres which he does not manage for sustained yield. Another who owns and operates a good farm, but who also works as a railway mail clerk, has 650 acres of forest land. This ownership is held for hunting as well as for timber production. An area of 240 acres of red pine 12 to 18 inches in diameter is

---

[1]The average figures were obtained by dividing the total area in pastured and unpastured farm woodlands by the number of farms for each year. No tabulation of woodlots according to size classes are readily available.

[2]The U.S. Census of 1950 did not present a similar classification.

located at the south end of Mullett Lake. This area has been held for a long period by a local family dealing in real estate.

Forest Lands in Public Ownership

There are no national forest lands in Cheboygan County. Until about 1948 the federal government had retained more than 5,000 acres of lands in the east-central part of the County. These had been acquired during the farm resettlement program but have since been given to the State in exchange transactions. Most of the public ownership is in State forests which comprise approximately 175,000 acres (see Table 50). There are no County forests, but four high schools in the County have school forests of 80 acres each. The planting programs for these are about nine-tenths completed, the oldest plantation being 17 years of age. Each spring approximately 2,500 seedlings are planted on each school forest.

Other Uses of Forest Lands

Other than for the production of wood, private forest lands are used chiefly for recreation and grazing. The State forest lands, and to some extent the large private holdings, are used for hunting. Out-of-county hunters account for much of the hunting pressure on the State forests.

Forest Fires and Fire Protection

The history of forest fires in Cheboygan County prior to 1925 is not available but it is quite certain that most of the cut-over lands of the County were burned over at least once during or after the white pine logging period. According to Gibson (1944) one visitor to Cheboygan, who left the town by train during a forest fire sometime in the 1890's, made the following statement:

> We were not long out (of the town of Cheboygan) before we knew we were in for it; flames even licked the sides of the train coaches but in time we came through into Onaway, (across the eastern boundary into Presque Isle County) where the entire population was out at the edge of town, battling to save the place. That night we had to lie on the hotel floor, so bad was the smoke; at 7:00 a.m. a fine hard rain occurred and the natives said that the rain was all that saved the town.

Records kept since 1925 by the Michigan Department of Conservation indicate that the average acreage burned per fire decreased from 172 acres during the period 1925-1929 to 4 acres per fire in the period 1949-1951 (see Table 38). This indicates considerable improvement in the effectiveness of detection, reporting, and other suppression activities. The average number of fires per year increased from 70.7 for the period 1925-1929 to 91.4 for the years 1930-1934. The increased influx of tourists during this period in addition to the dry summers during the early thirties are to blame for this adverse trend. From this high point the number of fires per year by periods dropped to an average of 21.6 for the years 1949-1951. This trend reflects

TABLE 38

AREA BURNED IN CHEBOYGAN COUNTY
BY FIVE-YEAR PERIODS, 1925-1951*

Year	Acres	Number of Fires	Average Area Burned per Fire	Average Number of Fires per Year
1925	43,905	141		
26	750	28		
27	3,788	65		
28	...	...		
29	232	49		
	48,675	283	172.0	70.7
1930	6,584	85		
31	2,759	87		
32	898	83		
33	1,587	146		
34	818	56		
	12,646	457	27.0	91.4
1935	1,885	67		
36	337	46		
37	1,064	79		
38	75	23		
39	979	43		
	4,340	255	17.0	51.0
1940	223	17		
41	207	50		
* 42	37	18		
	467	85	5.5	28.3
1949	232	42		
50	20	12		
51	12	11		
	264	65	4.0	21.6

*Records for 1943 through 1948 destroyed in State Building fire. Figures furnished by the Michigan Department of Conservation, Field Administration Division. No detailed records were kept before 1925.

increased caution on the part of the public brought about by the educational campaign to prevent forest fires.

A listing by the Conservation Department of fires of 1,000 acres or more in area indicates that there have been no large fires since 1930. The losses in terms of dollars as estimated by the Department of Conservation seem very low (see Table 39).

Table 40 indicates that smokers have accounted for 46.7 per cent of all forest fires in Cheboygan County since 1925. The percentages of smoker-caused fires were larger in the 1930's (56.1 to 59.6 per cent) than in the period 1925-1929 (19.4 per cent), probably because more sportsmen were in the woods in the thirties. The percentage remained high from 1940 to 1951 (50.6 to 43.2 per cent).

Brush burning has been second in importance consistently as a cause of fires since 1925. It averaged about 10 per cent for all periods listed in Table 40 with the exception of the 1949-1951 period when it jumped to 40 per cent.

Camp fires as a cause of forest fires have declined in importance since the period 1930-1934, while railroad-caused fires increased somewhat from 1940 to 1951. Incendiarism was highest in the early 1930's when jobs were scarce. Lightning has never been responsible for more than 2.1 per cent of all forest fires in the County.

TABLE 39

FIRES OF ONE THOUSAND ACRES OR OVER
IN CHEBOYGAN COUNTY SINCE 1925[a]

Date	Acreage Burned	Loss[b]
May 12, 1925	10,700	$2,800
May 18, 1925	9,000	200
August 21-30, 1930	6,003	1,353

[a]Source: J. A. Mitchell and D. Robson, 1950, Forest Fires and Fire Control in Michigan, Mich. Dept. of Conserv. in cooperation with U.S. Dept. of Agr., Forest Service.

[b]Loss figures include damage to timber and property.

The State of Michigan protects from fire 402,944 acres, or 86.5 per cent of the total area of Cheboygan County. This is all the land area presently in need of protection (Mitchell and Robson, 1950). The Division of Field Administration within the Department of Conservation is responsible for fire control and conservation law enforcement. There are four forest fire lookout towers in the County.

Forest Lands Listed Under the Forest Reserve Act

The Commercial Forest Reserve Act (also known as the Pearson Act) was passed in Michigan to supplement the

TABLE 40

CAUSES OF FOREST FIRES IN CHEBOYGAN COUNTY, MICHIGAN[a]

Causes	Periods										Totals	
	1925-1929[b]		1930-1934		1935-1939		1940-1942[c]		1949-1951			
	No. fires	%	No. fires	%	No. fires	%	No. fires	%	No. fires	%	No. fires	%
Smokers	55	19.4	256	56.1	152	59.6	43	50.6	28	43.2	535	46.7
Brush burning	36	12.7	42	9.2	22	8.6	11	13.0	26	40.0	137	11.9
Camp fires	24	8.5	39	8.5	12	4.7	3	3.5	0	0.0	78	6.8
Railroads	20	7.1	19	4.2	10	3.9	12	14.1	3	4.6	64	5.6
Incendiary	13	4.6	30	6.6	3	1.2	3	3.5	4	6.1	53	4.6
Lightning	6	2.1	7	1.5	5	2.0	0	0.0	0	0.0	18	1.6
Miscellaneous	32	11.3	45	9.7	50	19.6	12	14.1	4	6.1	143	12.5
Unknown	97	34.3	19	4.2	1	0.4	1	1.2	0	0.0	118	10.3
Totals	283	100.0	457	100.0	255	100.0	85	100.0	65	100.0	1,146	100.0

[a]Source: Field Administration Division, Michigan Department of Conservation.

[b]Records for 1928 missing.

[c]Records for the years 1943 through 1948 lost in State Building fire.

Woodlot Law of 1917 by encouraging commercial forestry. Originally, land could be listed under this law if it was adequately stocked with immature trees which gave promise of becoming commercially valuable in the future. This law has been amended five times since it was passed in 1925. The last amendment made in 1939 provided for the listing of selectively logged lands. A specific tax of five cents per acre is levied annually on land listed under the Act and a graduated yield tax is imposed which varies in rate from two per cent in the first year to ten per cent in the ninth and subsequent years. The State pays ten cents per acre annually to the counties on classified land.

The Act has not had eminent success in Michigan. About 2.6 per cent of the total eligible forest land area in the State has been listed. There is evidence that the land listed does not receive better forest management. The frequent amendments have undoubtedly caused uncertainty among forest owners regarding future taxes under the law. Also, the 15-mill property tax limitation of 1933 nullified in great measure the benefits provided forest land owners by the Act. It is possible that in some townships the Act has resulted in lower assessments on forest land because of the owners' threats to classify (Nelson, 1940). In the State approximately 330,000 have applied for listing, 234,000 are eligible for listing, 170,000 are listed, and 50,000 acres have been withdrawn after listing (Mich. Dept. Conserv.,

1952b). Approximately 90 per cent of the acreage listed is held by corporate forest land owners. About 70 per cent is held by one corporation.

Acreages in Cheboygan County listed under the Commercial Forest Reserve Act since 1930 appear in Table 41. In 1930, 2,360 acres were classified under this Act. There was a decrease to 960 acres in 1942 with no changes to 1952. The latter area is less than 2 per cent of the private non-farm forest area.

Taxation of Private Forest Lands

Inequitable assessment of forest lands resulting from the employment of untrained assessors has probably been more responsible than any other factor for occasionally burdensome taxes in some townships. In general, forest lands have not been more heavily taxed than others. In the past 15 years taxes on lands held for timber production have decreased along with those for other uses. For forest lands sold by the State in Cheboygan County they are among the lowest for any lands (see Table 66). In 1937 lands held for timber production paid an average tax of 7.7 cents per acre, the third lowest tax in a list of ten for all types of land use. By 1945 the tax had dropped to 6.4 cents, the third lowest tax. In 1948 it was 4.7 cents, the next lowest after that for orchard and hunting lands (4.4 cents).

TABLE 41

TOTAL CUMULATIVE AREA LISTED UNDER THE COMMERCIAL FOREST RESERVE ACT IN CHEBOYGAN COUNTY, 1930-1952

Year	Acres
1930	2,360
1938	2,360
1940	1,000
1942	960
1948	960
1950	960
1952	960

Recreation

By 1930 much of the shore around Burt, Mullett, and Black Lakes was subdivided into summer home sites and the owners' families were coming north to spend most of the summer months on the lakes. These summer residents buy groceries and goods in the County and often hire local people to care for their properties the entire year. The assessment rolls have become voluminous with the descriptions of summer-home lots, and their assessed valuations keep rising as the demand for sites increases and as more expensive homes are erected. By 1940, recreation property comprised 6.4 per cent of the County area and provided 31 per cent of the tax base (Rutherford, 1940).

Tourist traffic and trade and summer home development reached important proportions by 1940. Attendance at Burt Lake State Park was 126,000 in that year, a figure not

attained since that time. Some of the new summer homes were quite pretentious and families were remaining in the County for the entire summer. The heads of the families commuted from the cities for weekends and vacations. A number of summer camps for boys and girls were established in the decade 1930-1940 on Burt and Douglas Lakes. World War II brought about a substantial decrease in the number of people coming to the County during the summer for recreation, primarily because of gasoline rationing. However, in the post-war years the demand for recreation in the County has continued to grow.

Tourist Attractions

Scenery and wildlife are important tourist attractions in Cheboygan County. The deer population has increased through the years in the favorable environment of cut-over lands. Grouse are relatively abundant and even the bobcat brings hunters to the County for sport. The lands under State control have always been open to the sportsmen for hunting and fishing. The high-speed auto has made it possible for hunters in the cities to take trips into deer country over the weekend or on short vacations during the hunting season. Increasing numbers of men find the deer-hunting season a welcome respite from the routine of factory and office work. Recreation of this kind satisfies a natural craving of men to get back to nature--to live for a

few days as their forefathers lived--or just to be in close companionship with other men in the woods.

There is another group of tourists who take camping equipment with them, either tents or house trailers, and are for the most part independent of the usual overnight tourist accommodations. This group is in the minority but is welcome in the northern counties of Michigan because it buys food and gasoline.

In September the tourist trade slackens because families return home so that children can enter school. Fall colors bring a few tourists north to help bridge the economic gap until the hunting season comes. Many counties are now working to develop winter resorts with ski hills to attract the winter sports enthusiasts. These, along with the ice fishermen, help somewhat to fill the void until the fishing season opens in the spring.

Whittemore and Taylor in 1937 found that 85 per cent of the parties traveling into northern Michigan for recreation had one or more members who planned to fish. Bathing and swimming were equally important pastimes. These sports ranked highest in favor among all vacationists. Other recreation in order of importance was motoring, golf, lounging, boating, hunting and shooting, tennis, hiking, camping, picnicking, riding, archery, and group games.

The attributes of the north country which attract tourists and recreationists are listed below in order of preference by Whittemore and Taylor:

1. Waters for fishing, swimming.
2. Scenery, including parks and lookout points.
3. Opportunities for education in biology, history, and geology.
4. Pleasant atmospheric conditions.
5. Good water from wells and springs.
6. Pine woods.
7. Summer climate conducive to sleep.
8. Low pollen count for hay fever sufferers.

Whittemore and Taylor (1937) calculated that more than 94,000 people stopped in Cheboygan County overnight in 1937. It is conservatively estimated that about 150,000 persons have found accommodations in the County annually in the post-war years.

Tourist Accommodations

In the early days of the vacation industry in northern Michigan, the large summer hotels were the mecca of the tourist and the vacationer. These were not numerous and were usually located in resort towns on the Great Lakes or on large inland lakes. The people who patronized them were from the upper income classes and did not represent a very large segment of the total population. However, when low-priced, high-speed automobiles became more widely owned during the twenties, many people of the lower income groups began to take vacations in the north country. The shorter work week and the paid vacation in the lower income classes allowed more and more people to travel for recreation.

During the late 1920's the tourist courts began to appear and their rates were set with consideration for the pocketbook of the average traveler. These were located

conveniently at the edges of urban areas and provided incomes for a few families in the cut-over region. The large summer resort hotel gradually lost popularity by the late thirties. This was due in some measure to the fact that many of the high-income customers of former years had purchased summer homes in the north country.

Whittemore and Taylor (1937) found the demand for overnight tourist cabins had increased significantly by 1937 because the public had become quite travel-conscious. More and more tourist courts and tourist homes were opened to take advantage of this demand. In 1937 there were 215 cabin rental units in the County. During the winter of 1937-1938, 77 more units were built to make a total of 292. By 1948, 77 tourist courts had 639 units (see Table 42).

In 1937 Whittemore and Taylor computed for Cheboygan County, among other things, the total man days spent by tourists and resorters in overnight establishments (see Table 43). Their results show that transient hotels had 50 per cent more patronage in terms of man days than resort hotels and these together had slightly more than cabin courts. However, cabin courts served almost 5,000 more customers. Tourist homes had less than one-fifth the number of customers that patronized cabin courts.

The average number of days each guest stayed was 2.4 for those lodging at transient hotels and cabin courts. The figure was highest for resort hotel guests, namely, 3.5 days. People remained at tourist homes two days on the average.

TABLE 42

CABIN COURTS AND HOTELS, CHEBOYGAN COUNTY, 1948*

	Cabin Courts	Hotels
Establishments (number)	77	18
Rental units	639	404
Receipts per year	$254,000	$511,000
Payroll	$11,000	$118,000
Active proprietors	81	20
Paid employees, July 15	40	171

*Source: United States Census of Business, 1948.

TABLE 43

RECORDS FOR OVERNIGHT ESTABLISHMENTS IN CHEBOYGAN, MICHIGAN, 1937*

Type of Establishment	Number of People	Average Number Days Registered	Total Man Days
Hotels	18,430	2.6	47,992
Transient	12,165	2.4	29,196
Resort	6,265	3.5	18,796
Cabin Courts	23,323	2.4	44,304
Tourist Homes	4,939	2.0	7,408

*Source: H. O. Whittemore and Wendell Taylor, 1937, Studies on the Recreational Use of Land in Cheboygan County.

The average distance of origin of all tourists was 330 miles and included northern Ohio and Indiana.

Table 42 presents a statistical comparison for cabin courts and hotels in 1948. Although cabin courts had almost 60 per cent more rental units than hotels, the latter took in twice as much in receipts. Of course the transient hotel is ordinarily open the entire year and caters to businessmen as well as tourists, whereas the cabin courts and resort hotels usually close for the greater part of the winter and early spring. However, this trend might be attributed to the higher incomes and more expensive tastes of post-war recreationists. Since World War II tourist court operators have generally modernized their facilities and increased rates.

On the average there were about eight guest units per cabin court and over 20 rooms in each hotel. Only half the cabin operators hired an employee while each hotel had nine paid employees on the average.

In 1950 there were 79 tourist courts in Cheboygan County, an increase of two since 1948. This rather small increase may indicate that the market is well supplied. During the summer of 1948 these courts were usually filled with guests by early evening. In 1949, however, with spending by tourists somewhat reduced and a cool season, some courts were not always entirely rented even during August.

In 1950 cabin courts were distributed as follows: 43 in the vicinity of Cheboygan, 15 at Mackinaw City, 9 at

Indian River, 9 at Topinabee, and 3 at Wolverine. In the same year 19 summer cottages were available for rent in the County. Twelve of these were located on Mullett Lake, primarily on the western shore, near U.S. Route No. 27.

Fishing

It is difficult to estimate the number of people who fish in Cheboygan County, and there have been no studies made on the expenditures of fishermen. However, since it is certain that more fishermen than hunters come to the County for recreation, the volume of purchases by fishermen should be greater than that made by the hunter trade. Non-residents of the County who fish there often buy overnight accommodations, meals, gasoline, fishing accessories including tackle, bait, and clothing, and pay for boat rental, guide service and other items and services.

The sale of fishing licenses gives the only clue to the fishing pressure in the County (see Table 44). The resident, non-resident, and temporary non-resident licenses sold in the years 1948-1950 have totaled over 10,000 annually. Almost 50 per cent of these were sold to non-residents. The largest group of persons fishing in the County is Michigan residents from other counties.

In 1950 the Institute for Fisheries Research, Michigan Department of Conservation, made a survey to determine fishing success in Cheboygan County (see Table 45). Approximately 13 per cent of the fishermen surveyed were women and

TABLE 44

NUMBER OF FISHING LICENSES SOLD IN CHEBOYGAN COUNTY, 1948-1950[a]

Type	Year		
	1948	1949	1950
Resident	5,436	5,512	5,302
Non-resident	1,495	1,539	1,672
Temporary non-resident	3,535	3,792	3,457
Trout stamp	2,519	2,734	2,625
Total[b]	10,466	10,843	10,431

[a]Source: Michigan Department of Conservation, Fish Division, License Sales by Counties, 1948-1950.

[b]Total does not include trout stamps sold.

11 per cent were non-residents of the State. It can be estimated that Michigan residents from other counties who fish in Cheboygan County are about equal in number to the local residents and the residents of other states combined.

Judging from the sale of licenses in Region II and Cheboygan County, about 25 per cent of fishermen buy trout stamps.[1] In the survey approximately 32 per cent of the catch were trout. Anglers who fished on trout lakes had

[1]Region II comprises the northern part of the Lower Peninsula of Michigan.

TABLE 45

FISHING SUCCESS IN CHEBOYGAN COUNTY, 1950*

Class of Water	No. of Anglers		Hours Fished	No. Trout Taken	Total No. Fish Taken
	Male	Female			
			Residents		
Non-trout lakes	578	73	1,606	...	803
Non-trout streams	42	10	63	...	50
Trout lakes	123	29	329	309	309
Trout streams	248	26	611	153	171
Sub-total	991	138	2,609	462	1,333
			Non-residents		
Non-trout lakes	44	10	76	...	94
Non-trout streams	29	15	44	...	17
Trout lakes	11	...	32	9	9
Trout streams	15	6	41	2	2
Sub-total	99	31	193	11	122
Total	1,090	169	2,802	473	1,455

*Source: Institute for Fisheries Research, Michigan Department of Conservation, Ann Arbor, Michigan, 1950.

the best success. They took an average of two trout per man at the rate of one fish per hour.

The number of fish planted in Cheboygan County streams and lakes more than tripled from 1945 to 1948 (see Table 46). During World War II, plantings had decreased

TABLE 46

FISH PLANTINGS, 1945-1950*

Species	Number					
	1945	1946	1947	1948	1949	1950
Brook trout	8,100	32,150	53,600	35,974	25,044	17,175
Brown trout	8,200	8,850	6,900	9,124	12,395	8,200
Rainbow trout	1,850	26,250	17,620	28,112	27,160	24,385
Lake trout	...	...	...	...	...	8,000
Black bass	3,500	47	5,000	11,905	...	1,000
Rock bass	...	...	...	163	62	...
Perch	...	350	73	...	190	...
Bluegills	6,000	...	...	26,275	...	2,000
Great Northern pike	...	4	...	8	9	...
Wall-eyed pike	872	677	137	139	170	...
Total . . .	28,522	68,328	83,330	111,700	65,030	60,760

*Source: Michigan Department of Conservation, Fish Division.

because of the shortage of personnel and equipment, but post-war plantings increased steadily through 1948 because of the mounting number of fishermen. Since that time, however, experimental fishing regulations and research by netting on certain lakes have demonstrated that abundant populations of young warm-water fish are produced naturally. Therefore continued hatchery plantings are in some measure unnecessary. The results of this decision by the Fish Division are seen in the decreased number of warm-water fish planted in 1949 and 1950.

In general, trout species are planted in streams and all other species are used to stock lakes. In the years 1945 to 1950, from 60 to 98 per cent of the fish planted have been trout species.

One of the urgent recreational requirements in Cheboygan County is more public fishing sites on the inland lakes and streams whose shore lines are held primarily by private owners. The Michigan Department of Conservation is now embarked on a program to purchase and improve public access acreage along lake fronts and water courses. This is an intensive type of public land use which involves a very small area of land. It is justifiable in that the private owner from whom the land is purchased is adequately recompensed and the area then serves a much greater number of persons in public use.

Hunting and Trapping

Griggs (1942) found that during the 1939-1940 and 1940-1941 hunting seasons the average annual expenditures of all hunters in Cheboygan County totaled $104,800, 68 per cent of which were spent by hunters residing outside Cheboygan County (see Table 47). This income from hunter expenditures is very welcome, since it comes at the time of year when retail sales are decreasing. The average Cheboygan County resident hunter spent $14.50 annually for hunting during the two seasons studied. Transient hunters passing through the County spent $2.16 on the average, while non-residents who hunted in the County spent $15.50 each. Auto travel cost more than any other item. Typical hunters spent more for clothing and ammunition than they received in meat value of game, allowing a generous figure for the price of game.

Table 48 indicates there has been a substantial increase each year since World War II in the number of hunters coming north to hunt. In 1951 more than 7,100 deer hunters stalked the whitetail deer in Cheboygan County, an increase of about 550 per cent since 1931. Approximately half of these hunters were non-residents of the County and 15% were residents of other states. In 1931 there were 1.5 hunters per square mile while in 1951 the figure was 9.9. The greatest increases took place in 1941, when there were 829 more hunters than in 1940; in 1946 when the number

TABLE 47

AVERAGE ANNUAL EXPENDITURES BY HUNTERS IN CHEBOYGAN COUNTY, 1938-1940[a]

Class of Hunter	Number	Total Expenditure	Average Expenditure
Transient[b]	24,000	$ 51,800	$ 2.16
Non-resident[c]	1,225	19,000	15.50
Resident	2,350	34,000	14.50
Total	$27,575	$104,800	$ 3.78

[a]Source: Julian Griggs, 1940. "Incomes Derived from Game Resources in Northern Michigan," unpublished. Figures are averages for two seasons, 1939-1940, 1940-1941.

[b]A transient hunter is one who passes through the County to hunt elsewhere, usually in the Upper Peninsula.

[c]A non-resident hunter lives outside Cheboygan County and comes to the County to hunt.

increased by 1,576 more than for 1945; and in 1951 when there were approximately 1,000 more hunters than in 1950. In 1948 about 21,000 acres of private lands were fenced for hunting in Cheboygan County.

The deer herd has not suffered from this increased hunting pressure. The percentage of hunters successful in the period 1931-1941 was 27, while in the last decade the figure was 24 per cent. The deer kill per square mile rose from 0.43 in 1931 to 2.5 in 1951. Other counties in Region II (19 counties in the northern part of the Lower Peninsula) have had 27 per cent hunter success on the average since 1931 while

TABLE 48

ESTIMATED DEER HUNTING RECORDS,
CHEBOYGAN COUNTY, 1931-1952[a]

Year	No. of Hunters	No. of Deer Killed	Per Cent of Hunters Successful			Hunters Per Square Mile	Deer Kill Per Square Mile
			Cheb. Co.	Region I[b]	Region II[c]		
1931	1,097	310	28	49	31	1.5	0.4
1932	771	366	48	57	37	1.1	.5
1933	1,233	369	29	47	34	1.7	.5
1934	1,344	388	25	42	29	1.9	.5
1935	1,736	485	28	41	27	2.4	.7
1936	1,982	478	24	42	28	2.7	.7
1937	2,352	487	21	39	22	3.5	.7
1938	2,759	651	24	43	23	3.8	.9
1939	3,287	648	20	38	23	4.6	.9
1940	3,367	838	25	44	24	4.7	1.2
1941	4,196	933	22	42	21	5.8	1.3
1942	3,764	887	24	45	23	5.2	1.2
1943	3,498	870	25	49	24	4.8	1.2
1944	4,091	955	23	43	26	5.7	1.3
1945	4,563	1,147	25	42	34	6.3	1.6
1946	6,139	1,552	25	43	30	8.5	2.1
1947	6,254	1,543	25	44	26	8.7	2.1
1948	6,357	1,288	20	40	22	8.8	1.8
1949	5,979	1,571	26	41	25	8.3	2.2
1950	6,177	1,595	26	43	28	8.6	2.2
1951	7,181	1,790	25	39	25	9.9	2.5
1952	7,070	440	6	20	10	11.0	0.7
1952[d]	3,670	1,340	36	...	45	5.7	2.1

[a]Source: Michigan Department of Conservation, Game Division.

[b]Region I is the Upper Peninsula of Michigan

[c]Region II is the northern part of the Lower Peninsula above the Muskegon-Bay City line.

[d]Special deer season, November 28-30, Region II.

the counties in the Upper Peninsula have averaged almost 44 per cent.

The deer kill for the regular season in 1952 was exceptionally light, even though the estimated number of hunters declined only slightly. In the special three-day season from November 28-30, 1952, however, the kill was sufficient to make the total kill for 1952 equal to that of the 1951 season.

Relatively few non-residents of the County go there to hunt small game. Table 49 gives an idea of the relative numbers of licenses sold to residents and non-residents to hunt deer and small game. For the three years noted, the most licenses were sold in 1949. The year 1950 shows the lowest number of sales.

The snowshoe hare is a rather important source of recreation and food for local people in Cheboygan County. In the 1948-1949 season an estimated 19,000 hares were killed by 3,200 hunters.

About 7,500 ruffed grouse were taken by more than 2,000 hunters in the 1948-1949 season. Ducks rank third in importance as to the number of game killed.

The three most important fur-bearing animals trapped are the muskrat, raccoon, and mink. More muskrats are taken than any other species. In the 1948-1949 season an estimated 100 trappers caught 2,800 animals. There was a decline in all species taken in that season. Other animals trapped include the red fox, bobcat, skunk, and weasel.

TABLE 49

HUNTING AND TRAPPING LICENSES SOLD IN CHEBOYGAN COUNTY, 1948-1950*

Type of License	Year		
	1948	1949	1950
Resident small game	2,671	2,707	2,510
Non-resident small game	70	74	78
Resident deer	2,968	3,030	2,825
Non-resident deer	117	92	78
Resident deer with bow	31	38	31
Non-resident deer with bow	1	4	10
Trapping fur-bearers	135	121	71

*Source: Michigan Department of Conservation, Game Division, records for 1948-1950.

STATE-OWNED RURAL LANDS

Seven counties in Michigan had larger areas of State-owned lands than did Cheboygan County in June, 1952. In descending order according to area, these were Schoolcraft, Luce, Marquette, Chippewa, Dickinson, and Mackinac Counties in the Upper Peninsula, and Roscommon County in the northern part of the Lower Peninsula. When considering the counties with the largest percentages of State-owned lands, Roscommon (57.7 per cent), Luce (49.5 per cent), Dickinson (45.8 per cent), and Crawford (44.5 per cent), exceeded Cheboygan County (38.1 per cent) in this respect in 1952.

Area in Cheboygan County

The area of land in State ownership in Cheboygan County exclusive of platted properties was 176,694 acres in 1952. About 71 per cent of this area came into State possession through tax delinquency and subsequent reversion. The remaining 29 per cent was obtained by purchase or gift from private owners and by exchange with the federal government and individuals.

The distribution of State-owned lands may be seen on Fig. 11 and is described later for each category of State ownership discussed below. The subdivision of State holdings in Cheboygan County according to use is listed

[1]University Biological Station lands are not included.

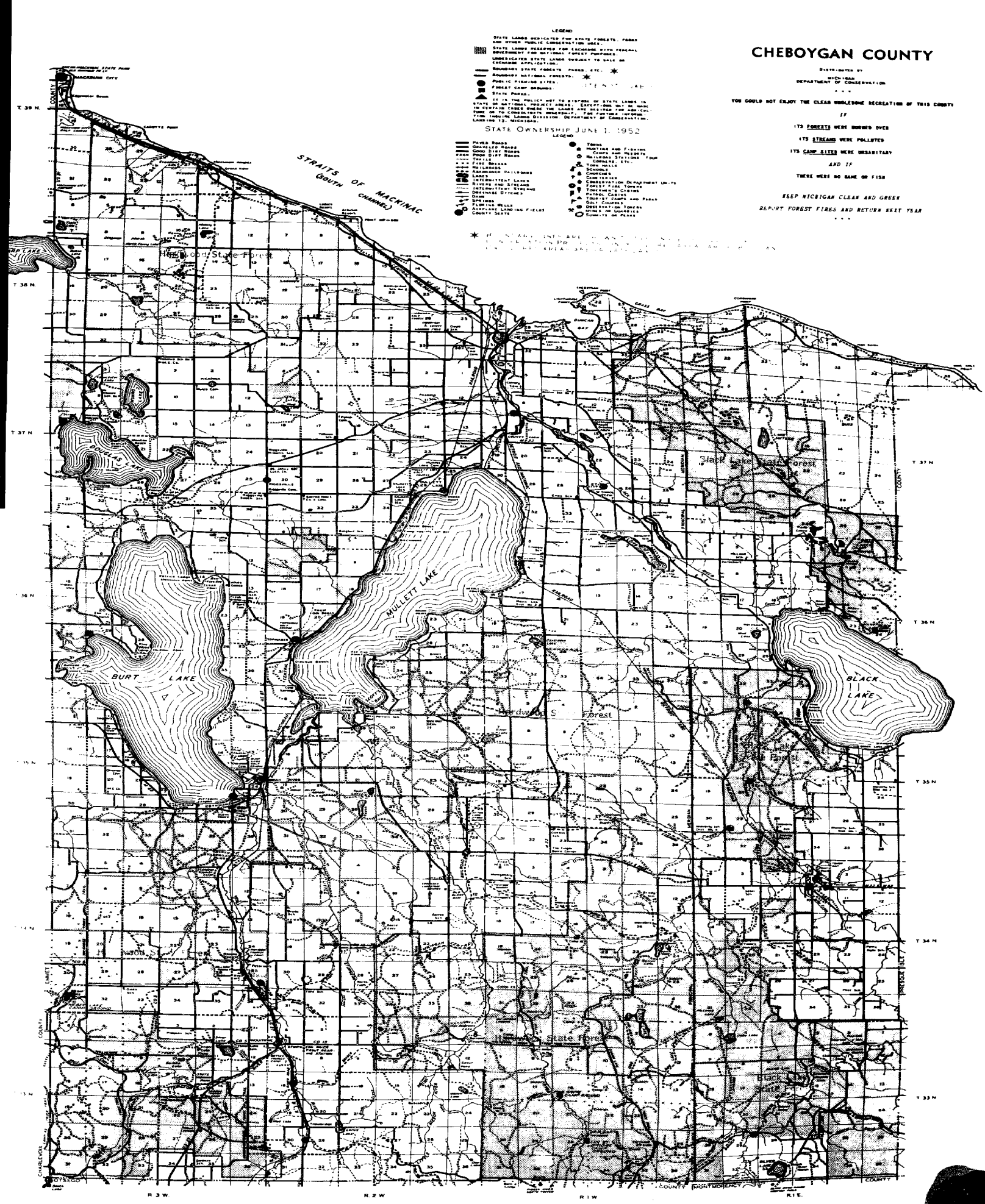


Fig. 11.--State Lands in Cheboygan County, 1952

TABLE 50

USES OF STATE LANDS IN CHEBOYGAN COUNTY (1952)*

Use	Acres
State forests	174,991
Water frontage	690
State parks	482
Undedicated	404
Public fishing sites	122
Field administration	5
Total	176,694

*Source: Sixteenth Biennial Report of the Michigan Department of Conservation, 1951-1952.

in Table 50 above. Lands dedicated to State forests make up the bulk of State ownership.

Methods of Acquisition

Reversion

Prior to 1937 the lands subject to State ownership and management were the "abandoned lands." To qualify for certification a property had to be delinquent for five years' taxes, to have been bid off to the State for the taxes of one or more years, to be non-occupied by a rightful owner, and to have no legal action pending for setting aside its taxes. After such properties were certified as abandoned and were deeded to the State, the Lands Division of the Department of Conservation was given charge of them. They were then available for homesteading or public sale or were

dedicated to public uses, such as State forests, parks, game refuges, public hunting lands, or recreation areas (Barlowe, 1951).

In 1937, however, the tax laws were amended by Act 155, P.A. 1937 (Comp. Laws Mich. 1948, Chap. 211.356), to shorten the time needed to take the deed on delinquent properties from five to three years. At present, properties delinquent for taxes assessed in the third year (or any prior year) preceding the tax sales conducted by the county treasurer each year in May shall be exposed for sale and be sold for total taxes, interest, and charges "to the person paying the full amount charged against such parcel and accepting a conveyance of the smallest undivided fee simple interest therein" (Comp. Laws Mich. 1948, Chap. 211.60). If the property remains unsold at the end of the treasurer's sale, it is bid off in the name of the State. The owners then have a 12-month period within which they may redeem their property.[1]

If the tax-sale certificate to any parcel of property is not redeemed within this statutory period, its title is conveyed by deed to the purchaser of the certificate or to the State, as the case may be. The State, therefore, can acquire tax title to land delinquent for the taxes of any one year 12 months after it is offered at the treasurer's tax sale and in the fourth year after the tax first becomes delinquent. The law also specifies that should the former

[1]Prior to 1939 the redemption period was 18 months.

owner of the reverted lands apply for its purchase within 90 days after title of such land vests in the State, the land shall be offered for sale at public auction at not less than a price equal to 25 per cent of the assessed valuation of such land as fixed and determined at the last assessment. In addition the law grants former owners the special privilege of reacquiring unrestricted title to their properties by bidding them in at the sale or by matching the highest bid made within a 30-day period after the sale (Barlowe, 1951).

Purchase of Land

Approximately 30 per cent of the State-owned lands in Cheboygan County were purchased with money from the Game Protection Fund.[1] This land is primarily in State forests which are dedicated to the production of timber and wildlife and to broad recreational uses. There are no game refuges in the County.

Water frontage.---A program was begun in 1940 whereby public access is obtained on lakes and streams by the purchase of sites on waters where there is urgent need for access. Prior to 1949, 40 cents were taken from the sale of each resident fishing license sold to purchase water access sites. Since that time, water frontage has been purchased with money from the Game Protection Fund into which all fishing license revenue is deposited (Mich. Dept. Conserv., 1952a).

---

[1] This fund is dependent on the $1.50 from the sale of each deer license.

State park land.--Money for acquisition of lands for State parks is provided by legislative appropriation. Some land has been acquired for this purpose by exchange with private individuals.

Exchanges

Exchange of lands with private owners and with the United States government provides a means by which State property within conservation project areas is further consolidated and blocked in, particularly when funds are limited for acquisition by purchase in these areas. In such exchanges State lands lying outside of conservation areas are generally disposed of under the provisions of Act 193, P.A. 1911, which authorizes exchanges. Occasionally, lands to be traded by both parties lie within conservation project areas and the exchange becomes one of "accommodation." These are of mutual advantage to the State and to private owners and are made on the basis of value.

Administration

The responsibility for the administration of State lands lies with the Department of Conservation. Prior to 1946 game areas and forest areas were managed separately under the Game Division and Forestry Division respectively. Now all State forest areas are managed simultaneously for timber and game production under the supervision of the Forestry Division, primarily. The two divisions develop

management plans cooperatively under the concept of multiple and integrated land use. The activities of the Forestry Division include timber management, planting, and sales. Law enforcement and fire protection are handled by the Field Administration Division.

The Michigan Department of Conservation is authorized to convey lands to local units of government and State agencies for public purposes. It may supply properties for school and municipal forests, parks, recreational sites, school sites, airports, and other public uses. Conveyances for public use are made at the nominal consideration of one dollar per deed, which provides that title shall revert to the State when the property ceases to be used for the public purpose for which conveyed. The State also retains mineral rights.

The Department of Conservation cooperates with county land-use planning committees and municipal officials in the disposal of State properties by requesting recommendations before title is issued. It can make available simultaneously to the United States and private parties certain State lands which, because of geographical location and physical character, can be better utilized by such parties.

Payments in Lieu of Taxes

When tax-delinquent properties are deeded to the State at county tax sales, they are bid off "in the name of the State, for the State, county, and township, in proportion

to the taxes, interest, and charges due each." The local units therefore have a tax lien on any receipts that might come from later sale of the land or its products. Under Act 155, Public Acts of 1927, the State can liquidate these equities of local units by a single payment of 25 cents per acre for all lands acquired through tax reversion, withdrawn from sale, and reserved for public conservation purposes.

The money for such payments is appropriated from the State's General Fund and is distributed as follows: one-fourth to the general fund of the County; one-fourth to the general or contingent fund of the township in which the lands are located; and one-half to the school districts in which the lands lie.

Act 305, Public Acts of 1931, requires that a tax of 10 cents per acre per year be paid on all State lands under the jurisdiction of the Conservation Department, except State parks of 1,000 acres or less with a caretaker. Money for this annual payment may come from both the State's General Fund and the Game Protection Fund. Payments are prorated to the townships and school districts according to the area of State land located in each. The amounts paid are further prorated in accordance with the taxes levied in the townships and school districts for the preceding year, not including levies for State and county purposes (Mich. Dept. Conserv., 1950). In the past this payment of 10 cents

per acre has been more than the average tax per acre paid on privately owned lands. As such it constitutes a beneficent source of income to the counties.

Uses of State Lands

State Forests

Four states, Michigan, Minnesota, New York, and Pennsylvania, have three-fourths of all land area in established state forests in the United States (Davidson, 1952). In 1952, Michigan had 22 State forests with a net ownership of 3,726,899 acres, the largest area in state forests of any state (Fontanna, 1949).

The parts of the Black Lake and Hardwood State forests located in Cheboygan County had a combined net area of 174,991 acres in 1951. They comprised 99 per cent of the total State ownership of 176,694 acres in that year. Their gross area includes about 60 per cent of the area of the County, but their net area is only 38.5 per cent. The Black Lake State Forest is located primarily in the five townships bordering the eastern side of the County.[1] The Hardwood State Forest is in the south-central and southwestern parts of the County and extends northward along the western side of the County intermittently almost to Mackinaw City, a distance of about 40 miles.

---

[1]Formerly T.33N., R.1E, and T.33 N., R. 1W. were included in the Pigeon River State Forest but have recently been made parts of the Black Lake and Hardwood State Forests.

The State forests are dedicated to the production of timber and game, to providing a background for recreation, and to the support of local economic stability. The objective is to manage them scientifically in order to obtain the best growth of tree species adapted to given sites and to protect those sites from deterioration. The timber is sold to commercial operators who do the cutting according to Forestry Division specifications. These commercial operations are a means of making improvement cuttings, of improving game habitat and food supply, and at the same time of providing employment for local people.

Sales of timber are made usually to small commercial operators who must follow cutting rules determined in advance for each stand of timber. Coordinated planning between the Forestry and Game Divisions has proved that aesthetic values can be retained, game habitat advantageously altered, and timber stands improved on those forest areas where wood production is the major objective.

Commercial timber sales are used as a means of increasing the productivity of State forests through various types of cuttings. These include thinnings in young stands, sanitation cuts, improvement cuttings, release cuttings, salvage, crop, and game improvement cuttings. During three and one-half years of World War II the cut was six times that of the previous three and one-half year period.

Sales of stumpage are controlled by permit to private operators. When the stumpage to be sold is valued at $200.00 or less, the permit may be issued by the district forester. Where valuations are higher, sales must be approved by the Conservation Commission and the timber advertised and sold at public auction where interested parties bid a "bonus" for cutting rights.

One of the principal aims and tasks of the Forestry Division has been the reforesting of large areas of open or poorly stocked lands. Reforestation is carried on regularly in fall and spring plantings. Money for planting has been made available under a law passed by the legislature in 1945 and amended in 1947 whereby the receipts from the sale of forest products from State tax-reverted lands are credited to a special fund to be used to plant lands in northern Michigan. The operation of the Higgins Lake Nursery, which produces forest planting stock for the Forestry Division, is financed from this account.

The Forestry Division began planting trees on State forest lands in Cheboygan County in 1927. By 1941 more than 22,000 acres had been planted (see Table 51). From 1941 to 1949 no plantings were made because of war-time exigencies. Approximately 9,800 acres of mixed Norway and jack pines and about 9,300 acres of mixed Norway and white pines, were planted by 1941. Other plantings include about 2,000 acres of white pines in pure stands in 1928 and 1929, and 1,000

TABLE 51

ACRES OF FOREST PLANTATIONS ON STATE FOREST LANDS IN CHEBOYGAN COUNTY*

Year Planted	Age in 1953	Species of Pine				
		Norway and Jack	Norway and White	White and Jack	White	Total
1952	1	94	...	...	...	94
1951	2	344	...	...	...	344
1949	4	353	40	...	...	393
1941	12	357	...	...	...	357
1940	13	1,880	190	...	...	2,070
1939	14	750	400	...	...	1,150
1938	15	1,438	750	...	...	2,188
1937	16	768	...	...	...	768
1934	19	...	1,020	...	...	1,020
1933	20	...	620	...	...	620
1932	21	440	1,125	...	...	1,565
1931	22	645	3,478	400	...	4,523
1930	23	1,979	920	...	...	2,899
1929	24	400	240	600	1,880	3,120
1928	25	1,200	480	...	160	1,840
1927	26	...	80	...	...	80
Total		10,648	9,343	1,000	2,040	23,031

*Source: The planting records of the Forestry Division, Michigan Department of Conservation.
From the fall of 1941 to the fall of 1949 no planting was undertaken.

acres of white and jack pines in mixture planted in 1929 and 1931. Plantations of mixed species have become the rule in order to reduce the danger of outbreaks of insects and disease.

The Game Division of the Conservation Department is particularly concerned with the deer and grouse populations on State forest lands in Cheboygan County. Since many private lands are closed to the public for hunting, the State lands, which are open to hunting, serve a large number of hunters. It is safe to estimate that more than half the 7,000 deer hunters who hunt in Cheboygan County do so on State lands. There are no game refuges in the County.

The State forests also provide other types of recreation such as camping, picnicking, fishing, hiking, and touring. Forest campgrounds get very intensive use. All are located on lakes or streams. Campers may also choose their own unimproved camp sites, since there are no restrictions on the location of camps.

State Parks

State parks are administered by the Parks Division of the Michigan Department of Conservation. They serve out-of-state residents as well as Michigan residents, and in this service they help to attract tourists from other states to enlarge the recreation industry in Michigan.

To qualify as a State park, an area of land should have a moderate stocking of trees, plenty of room for expansion, be adjacent to a body of water, and be readily accessible by roads. The parks in Cheboygan County have these attributes.

The two State parks in Cheboygan County have a total

area of 482 acres. The Burt Lake State Park on the southeastern shore of Burt Lake is the largest with 416 acres. Aloha State Park is located on the east side of Mullett Lake and has an area of 34 acres. Each park overlooks one of the largest inland lakes in Michigan. Poe Reef park site is in an early stage of development. It is located on the Lake Huron shore about three miles east of the City of Cheboygan.

The annual attendance at these parks dropped during World War II but has been increasing consistently since 1946 with the exception of the year 1950, when the weather was unfavorable (see Table 52). The year 1951 saw a marked increase in park attendance, which is a barometer of prosperity and of the demand for outdoor recreation. Burt Lake State Park in 1950 and 1951 had from a half to a third greater attendance than Aloha, which is on a less-traveled route. Burt Lake Park ranked 37th in volume of attendance among Michigan's 57 State parks during the years 1950-51.

Water Frontage

Two types of water frontage are owned by the State. One type is primarily for access to fishing waters, especially on streams. The other type, which is located ordinarily on the larger inland lakes and the Great Lakes, is for other recreation such as bathing, boating, and picnicking, in addition to fishing. The State also holds easements on private trout-stream frontage for public access.

TABLE 52

ATTENDANCE AT STATE PARKS, CHEBOYGAN COUNTY, 1940-1951[a]

Year	Aloha			Burt		
	Attendance	Number of Campers	Number of Camps[b]	Attendance	Number of Campers	Number of Camps
1940	20,420	869	64	126,566	4,034	1,202
1945	16,475	195	54	57,498	1,174	394
1946	16,582	600	178	39,111	3,595	1,007
1947	29,125	1,063	330	52,026	4,220	1,161
1948	29,875	935	279	63,508	4,743	1,355
1949	30,900	1,590	454	71,875	5,802	1,598
1950	30,800	948	280	66,050	4,991	1,369
1951	48,845	1,277	316	75,457	5,561	1,506

[a]Source: Parks Division, Michigan Department of Conservation.

[b]A camp is composed of a tent or trailer housing a family or other small group of persons.

Where lands bordering fishing waters are already in State ownership and dedicated to State forests, fishing sites are merely improved and remain under the administration of the Forestry Division. Where lands are acquired by purchase outside State forest boundaries, the Fish Division administers them.

There were 12 public fishing sites in Cheboygan County as of March, 1951. Seven of these were on lakes and 5 were on streams. They comprised 567.4 acres with individual areas varying from 0.9 to 230 acres and frontages of from 90 to 14,600 feet. They give access to about 64 square miles of lake area composed primarily of Burt and Mullett Lakes, and to approximately 26 miles of stream.

The sites are classified according to the facility with which boats can be launched. Six are improved, 9 are usable, and two are not usable as yet. With the extensive shoreline of large inland lakes and Lake Huron and considering the present demand for public access to recreation waters, there is justification for the establishment of more public sites with water frontage in the County.

Undedicated Lands

In 1951 there were 404 acres of undedicated lands owned by the State and lying in widely scattered fashion outside State forest boundaries. These are held either for exchange with the federal government or individuals or they

may be purchased. There are usually less than 500 acres of such lands in Cheboygan County, especially since the war years.

Some undedicated lands support merchantable stands of timber. Until 1945 sales of such timber were handled by the Lands Division, but since that time they have been a responsibility of the Forestry Division. They are administered in the same manner and receive the same attention as State forest lands.

University of Michigan Biological Station Tract

The University of Michigan Biological Station Tract lies in Township 37 North, Range 3 West, and Township 36 North, Range 3 West in Cheboygan County, and in Township 37 North, Range 4 West in Emmet County. It borders Douglas Lake on the south, west, and east and extends southward to the north shore of Burt Lake. The Tract and the Station are administered by the University of Michigan which is a State institution. At present there are 8,840 acres in the Tract, about 3,500 acres of which were acquired from private owners and 5,340 acres from the State of Michigan. Approximately 1,200 acres are planted to red, jack, and white pines. Most of the Tract has forest cover which includes second-growth northern hardwoods, pine, and swamp-coniferous types.

The Biological Station is located on South Fishtail Bay of Douglas Lake. It offers facilities and instruction

Page(s) 195 lacking in numbering only.

UNIVERSITY MICROFILMS

for graduate courses and for research in biology during the University summer session. The Tract provides diverse ecological areas for study and research in many fields of biology. It is managed primarily for forest production and game protection, although a few small areas are devoted to special studies which seldom interfere with development of the forest stand.

Land Management Policy

From early statehood large areas of public lands have been held by the State. More than 80 per cent of those held presently are tax-reverted. The Department of Conservation is charged with the responsibility of developing the natural resources on State lands according to conservation principles and for providing facilities for outdoor recreation.

In order to carry out such responsibilities, inventories have been made and land-use planning programs developed. The policy of the Department of Conservation is to retain in public ownership only those tax-reverted lands for which there appears to be no economic private use or demand and those which appear to be needed by the general public for hunting, fishing, or other recreational use. Governmental responsibility includes protecting and managing for forest and wildlife production and recreation those lands which have been so exploited and denuded that they cannot be retained profitably in private ownership.

In Michigan, tax-delinquent lands revert to State ownership. The State, by virtue of its taxing powers, can provide funds to pay in lieu taxes and hold large areas of land not productive at present. By proper treatment of such lands, they can be brought gradually into productivity and at least made to pay their way if not actually produce a profit in times of prosperity. Therefore, the burden of unproductive lands is shared by all citizens, whereas the individuals who held these lands in the past were not able financially to pay taxes and manage such lands until they could produce.

The State (or the public) also is willing to hold these lands for public uses such as recreation and watershed protection which do not return a monetary income but provide services. Managing this type of land is one of the providential functions of government. The public may realize income from such land by selling forest products and leasing the mineral rights. It may use the land for hunting, camping, fishing, and other recreational activities.

Land Quality

Those lands of Cheboygan County owned by the State of Michigan are generally poorer in soil quality than those of the County as a whole. Using Schoenmann's land types for classifying County lands, Table 53 indicates that the State-owned lands (1950) in Class I comprise 1.9 per cent of all

TABLE 53

CLASSIFICATION BY LAND TYPES OF LANDS OWNED BY THE STATE OF MICHIGAN IN CHEBOYGAN COUNTY IN 1938 AND 1950, LANDS REVERTED IN 1939, AND LANDS SOLD BY THE STATE TO PRIVATE OWNERS 1936-1947

Land Types	All County Lands*		State-Owned Lands, 1938*		
	Acres	Per Cent of Total	Acres	Per Cent of Total	Per Cent of Total Land Type
Class I					
Afton	19,066	4.1	725	0.6	3.9
Burt	25,869	5.6	1,635	1.4	6.4
Burtcher	12,727	2.8	182	0.2	1.4
Subtotals	57,462	12.5	2,552	2.2	4.4
Class II					
County Farm	7,679	1.7	350	0.3	4.6
Duncville	39,062	8.7	13,449	11.5	33.7
Inchman	22,629	4.9	1,585	1.4	7.0
Sugartown	2,771	0.6	0	0.0	0.0
Tuscarora	22,846	5.0	953	0.8	4.2
Orchard Bench	31,799	6.9	5,685	4.9	17.9
Grand Ridge	17,837	3.9	4,085	3.5	22.9
Subtotals	145,423	31.7	26,107	22.4	17.9
Class III					
Lakeshore	5,670	1.3	53	0.0	0.9
Mackerell	29,240	6.4	6,466	5.6	22.1
Mud Lake	50,501	11.0	14,438	12.4	28.6
Black River	7,467	1.6	1,865	1.6	25.0
Indian River	3,572	0.8	339	0.3	9.5
Wildwood	52,934	11.5	21,577	18.5	40.8
Subtotals	149,584	32.6	44,738	38.4	20.9
Class IV					
Straits Shore	5,744	1.3	65	0.0	1.1
Carman Hills	28,188	6.2	8,562	7.4	30.4
Doorlake	17,343	3.8	12,140	10.4	70.1
Livingman Bog	4,225	0.9	831	0.7	19.7
Koehler Benton	50,594	11.0	21,600	18.5	42.7
Subtotals	106,094	23.2	43,198	37.0	40.8
Totals	458,563	100.0	116,595	100.0	25.4

*Classified in the land-use study carried on by . F. Ramsdell.

TABLE 53--Continued

Lands Deeded to the State after the Tax Sale of 1939			Lands Sold Back to Private Owners, 1936-1947		
Acres	Per Cent of Total	Per Cent of Total Land Type	Acres	Per Cent of Total	Per Cent of Total Land Type
1,987	2.7	10.4	1,118	5.4	5.9
2,946	3.9	11.5	2,434	11.9	9.5
596	0.8	4.7	277	1.3	2.2
5,529	7.4	9.6	3,829	18.6	6.7
496	0.7	6.5	250	1.2	3.3
6,148	8.2	15.4	2,308	10.8	5.5
4,995	6.6	22.1	820	4.0	3.6
800	1.1	28.9	0	0.0	0.0
4,126	5.5	18.1	1,298	6.3	5.7
6,028	8.0	18.9	2,402	11.7	7.6
4,547	6.0	25.5	1,154	5.6	6.5
27,140	36.1	18.7	8,132	39.6	5.6
260	0.4	4.4	72	0.3	1.2
5,597	7.4	19.1	1,145	5.6	3.9
9,933	13.2	19.7	2,140	10.4	4.2
785	1.0	10.5	144	0.7	1.9
408	0.5	11.4	30	0.1	0.9
9,010	12.0	17.0	2,370	11.5	4.4
25,993	34.5	17.4	5,901	28.6	3.9
836	1.1	14.6	40	0.2	0.7
3,481	4.6	12.4	759	3.7	2.7
781	1.0	4.5	85	0.4	0.5
1,495	2.0	35.4	112	0.5	2.6
9,974	13.3	19.7	1,713	8.4	3.4
16,567	22.0	15.6	2,709	13.2	2.5
75,229	100.0	16.4	20,571	100.0	4.5

TABLE 53--Continued

Dedicated, State-Owned Lands, 1950			Area Increase in State Ownership 1938-1950
Acres	Per Cent of Total	Per Cent of Total Land Type	Acres
1,146	0.6	6.0	411
1,416	0.8	5.5	-219
837	0.5	6.6	655
3,399	1.9	5.9	847
346	0.2	4.5	-4
16,565	9.4	41.5	3,116
5,637	3.2	24.9	4,052
626	0.4	22.6	626
3,062	1.7	13.4	2,109
9,855	5.6	31.0	4,170
6,693	3.8	37.5	2,608
42,784	24.3	29.4	16,677
83	0.1	1.4	30
10,931	6.2	37.4	4,465
23,122	13.1	45.8	8,694
3,476	2.0	46.5	1,611
561	0.3	15.7	222
28,013	15.9	53.0	6,436
66,196	37.6	44.2	21,458
963	0.5	15.0	798
13,247	7.5	47.1	4,685
14,733	8.4	85.0	2,593
2,131	1.2	50.4	1,300
32,824	18.6	64.9	11,224
63,798	36.2	60.1	20,600
176,177	100.0	38.6	59,582

State lands.[1] Considering all Cheboygan County lands, 12.5 per cent are in this class.

Twenty-four per cent of the State-owned lands are in Class II compared with 32 per cent of the County lands. Land-type Classes I and II combined, which include most lands in farms, contain approximately 45 per cent of all County lands but only about 26 per cent of the State-owned lands. Therefore, 19 per cent more of the State lands than of County lands are of the poorer land quality found in Classes III and IV.

Work Projects and Personnel

In July, 1951, there were 24 persons employed in Cheboygan County by the Michigan Department of Conservation with an annual payroll of about $50,000 (see Table 82). The work performed by these employees includes forest management, fire detection and control, fish management, park management, and law enforcement. The Department of Conservation is represented in the County by the following divisions: (1) Field Administration, (2) Fish and Fisheries, (3) Forestry, and (4) Parks and Recreation.

The Game Division does extensive work in the County, such as making inventories of game species and habitats and improving habitats, but none of its employees are stationed in the County. A recent project is the creation of two

---

[1]For definitions of Schoenmann's land types according to the combination of soil types which they embrace, see Table 83.

flooded areas to produce additional waterfowl habitat. The Division of Fish and Fisheries operates a trout-rearing station at Wolverine, Michigan, which supplies fish for planting in the northeastern part of the Lower Peninsula.

Trends in State Ownership

The greatest change in the area of State-owned lands after 1928 in Cheboygan County occurred in 1939 when an accumulation of five years of delinquency was released by the termination of the tax moratorium (see Figure 12). The area under State control increased from 118,314 acres in 1938 to 195,283 acres in 1940. Prior to this time, the year of highest State ownership was 1934. In the early thirties delinquency had been increasing during the economic depression. From 1934 to 1939 the moratorium on property taxes precluded reversion so that the State disposed of land in these years by sale and exchange and received none through tax delinquency. Therefore, the area owned by the State gradually decreased until 1939.

There was a steady decline in the State-owned acreage after 1940 through sales and because reversion decreased to zero in 1947. The low mark after 1940 was the year 1948, when there were 173,864 acres in State ownership. Since that time the acreage increased to 178,023 acres in 1952 through purchases and gifts and through exchanges with individuals and the federal government. Most of the area acquired has

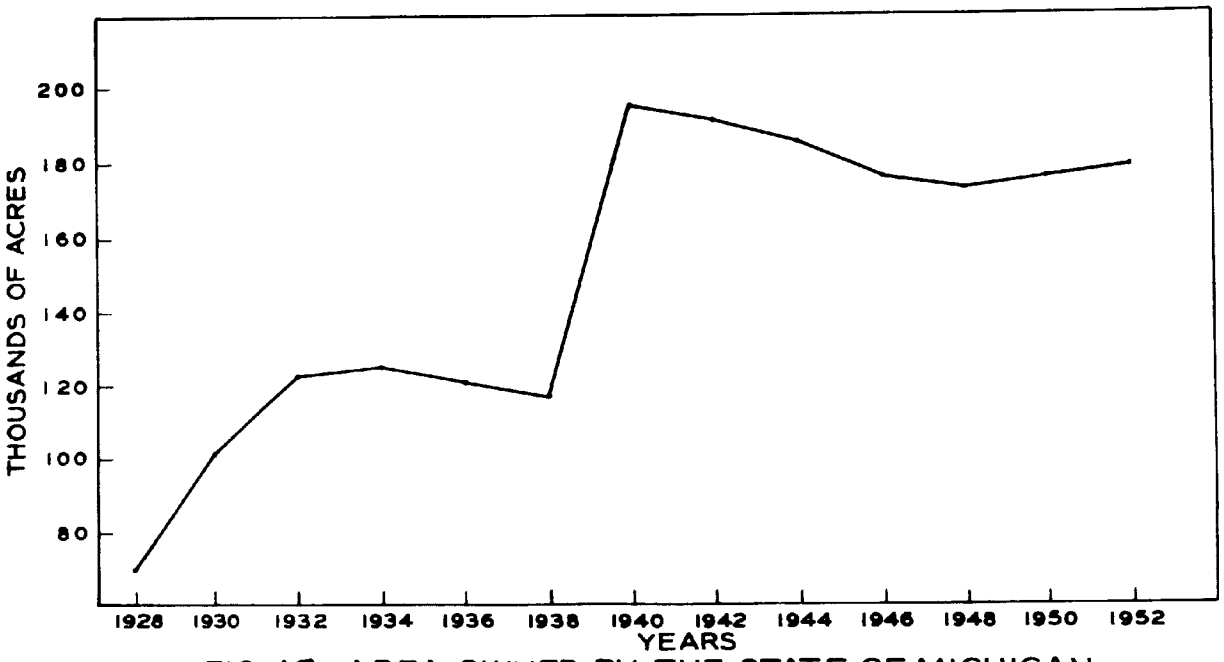


FIG. 12 AREA OWNED BY THE STATE OF MICHIGAN IN CHEBOYGAN COUNTY, 1928-1952

been incorporated into State forests in an effort to block in administrative units.

Table 53 presents a classification of all Cheboygan County lands by Schoenmann's land types and land type classes. To indicate changes in State ownership from 1938 to 1950 defined by land quality, the State holdings in these two years are listed according to land types and classes. The gross changes were brought about by the acquisition of 75,229 acres of land which reverted in 1939 and by the disposal of 20,571 acres sold to private owners from 1936 to 1947.

In relating how area in State ownership changed according to land quality from 1938 to 1950, the changes will be described by land-type classes. Class I includes loams and the better sandy loams and comprises 12.5 per cent, or 57,462 acres, of all Cheboygan County lands. In 1938 the State owned 4.4 per cent of Class I lands, or 2,552 acres. In 1939, 9.6 per cent of this class was deeded to the State through tax delinquency, leaving 86 per cent of Class I in private ownership.

From 1936 to 1947, 6.7 per cent of all Class I lands (3,829 acres in State ownership) were sold to private owners so that, along with additional disposals in 1948 and 1949, only 5.9 per cent remained under State control in 1950, a net accretion of 1.5 per cent from 1938. This left 94.1 per cent of Class I lands in private ownership in 1950. The 3,399 acres in Class I held by the State in 1950 are in small scattered patches in State forests.

Class II land types include primarily sandy loams, some loamy sands, and a few peats and sands. Almost 32 per cent of the County lands fall in this class. In 1938 the State owned 17.9 per cent, or 26,107 acres, of Class II. In 1939, 18.7 per cent of the Class II lands reverted to State ownership leaving 67.4 per cent in private holdings. Then from 1936 to 1947 the Department of Conservation sold 8,098 acres in this class to individuals. By 1950 the balance in State ownership in Class II was 42,784 acres, or 29.4 per

cent of the total. This represented an increase of 16,677 acres in the period 1938-1950, substantially more than the 847-acre increase in Class I. Therefore, of the total 59,582 acres added to State ownership in the 12-year period, only 29.4 per cent were lands in Classes I and II. This is in keeping with the Conservation Department's policy of returning the better lands to private ownership.

Land-type Classes III and IV will be discussed jointly. They include generally infertile soils, such as the poorer loamy sands, sands, peats, and mucks. In 1938 the State owned 87,936 acres in these two classes which comprised 75.4 per cent of its total holdings and 55.8 per cent of all lands in these classes. In 1939, tax reversion added 42,560 acres in Classes III and IV to State ownership, or 56.5 per cent of all lands which reverted through tax delinquency. This left 52.7 per cent of Class III and 33.6 per cent of Class IV in private ownership. However, from 1936 to 1947 the State sold 8,552 acres to private owners in these two classes leaving it a balance of 129,994 acres. This left a net increase of 42,058 acres in Classes III and IV from 1938 to 1950, which was 72 per cent of the total accretion. The State now owns 44.2 per cent of Class III and 60.1 per cent of Class IV lands.

The area in State ownership is expected to remain fairly static in the foreseeable future. The slight increase through purchase and exchange may continue sporadically but will be of little consequence. Since the present policy of

the Conservation Department precludes selling large areas of State land and since sales of scattered 40-acre parcels dwindled to less than 200 acres in 1952 (see Table 67), disposals by sale will probably be of minor importance. Pending a major downward trend of the economic cycle, State ownership in Cheboygan County will remain stable.

State and Private Ownership Balance

The basic consideration in determining the proper balance between State and private ownership is whether the lands in question can contribute more to the general welfare in private or in public ownership (Ely and Wehrwein, 1940). This in turn depends upon the stability of private ownership in times of economic recession. Although an accurate balance cannot be made here because the entire County was not surveyed for land use according to land quality, the principles are clear.

In the present prosperous times there is little or no reversion to State ownership through tax delinquency in the County. This means broadly that production on private lands returns enough income under present prices to pay taxes and provide some recompense to the operator. However, some owners are producing income at the expense of the soil resource; that is, they are accepting a present income in preference to a delayed future one more in keeping with good management. This is in effect a reduction of assets in terms of fertility, and on low-quality soils this means lower and lower production. Aldo Leopold (1934) has said:

> Whenever a private landowner so uses his land as to injure the public interest, the public will eventually pay the bill, either by buying him out or by donating repairs or both. . . . Abuse is no longer a question of depleting a capital asset, but of actually creating a cash liability against the taxpayer.

The least productive lands are the ones which fail first to produce an income in the event of economic recession. When the local farmer or pulpwood logger no longer can afford to pay taxes, he may first try to sell his property. If there is no demand for hunting land and no large timber operators are interested in buying forest property, the land may be sold for taxes by the County. Ultimately it may revert to State ownership.

Ownership Concepts

Public ownership.--After the State has managed the land for a number of years and the timber has attained merchantable size, pulp and paper companies or local loggers may urge that the land be sold to them. One of two concepts of ownership (public or private) would be adopted at this stage. The first would retain the land in State ownership on the theory that since the public has paid in lieu taxes and built up an equity in the land, the income from the sale of forest products should go to the State and not to a private individual or company.

The public generally has accepted the dedication of large areas of State lands as forests because the State pays

in lieu taxes to local government, provides trained management, hires local labor, sells stumpage to local operators, and provides raw materials for local industry. Many persons appreciate the fact that State forests are open to hunting, fishing, and camping. Need for large areas of recreational land constitutes an additional argument in favor of State ownership.

Receipts from stumpage sales at present help to defray the cost of in lieu taxes and administration. In the future, State forest lands should produce enough to pay their way or perhaps show a profit. If some lands are too poor to return a profit in forest production, they may provide recreational and esthetic values for the public. Certainly the State is better able financially to hold non-productive lands than most small private owners.

One of the disadvantages of State ownership is, as of the present, lack of intensive management. On most State forests one forester and perhaps an assistant are responsible for as much as 150,000 acres. Until the present State forest inventory was undertaken, in many instances timber buyers have taken the initiative in indicating the location and volume of stumpage they wanted to buy. With the aid of new inventory information, State foresters can be more aggressive in promoting timber sales.

At present large pulp and paper firms do not buy stumpage from State forests because Conservation Department

policy does not provide for sales large enough to interest them. These firms often buy from local jobbers who purchase relatively small units of stumpage from the State. Since many State forest stands are attaining merchantability for pulpwood, the Department will have to modify its policy in order to sell larger volumes before the stands deteriorate through attacks by insects and disease. Public ownership and management of natural resources are not generally as efficient as private operation where a profit must be made. In the past and for a number of years to come part of the expenses of State ownership must be borne by the taxpayers of the State.

Private ownership.--The second concept favors selling State lands to private owners, especially to large companies which have longevity of existence and can give some assurance that they will hold the land indefinitely for timber production. Such companies would pay taxes in support of local government and provide employment, which would aid in stabilizing the economy of the County. This approach takes for granted that the company would manage the land to protect the site and thereby maintain yield. Of course, private ownership requires land of commercial quality in order to make a profit.

Private ownership is commensurate with free enterprise in the United States. However, one purpose of public ownership is to spread the cost of holding submarginal lands

to all taxpayers. There is always the possibility that land in private ownership will revert through tax delinquency, perhaps because the soil loses fertility through too intensive use.

The large amount of reversion brought on by the depression of the thirties influenced County residents generally to accept State ownership readily (Andrews and Bromley, 1941). The township land-use planning committees in many instances were generous in recommending large areas for continued State ownership. However, since the beginning of World War II, there has been a good market for land, although there has been no concerted local demand on the part of individuals for the State to sell dedicated land in Cheboygan County. There have been no demands made by pulp and paper companies for the Department of Conservation to sell State forest land in the County, although in other counties pressure in this direction is very strong, according to Department officials.[1] The present policy of the Department does not provide for the sale of dedicated State lands to private ownership. However, large commercial forestland owners are urging that this policy be modified.

Some lands now in private ownership doubtless could be managed more closely in accord with conservation principles if they were publicly owned. However, there is no provision

---

[1]The reason is that there are no large, active, wood-using companies in the County or near by and that there are no large blocks of commercial forest land held by the State.

by which the State can acquire land directly and specifically for the purpose of instituting conservation measures.

If private use were regulated by the County through zoning, some improvement in land-use practices could be effected. Zoning has been effective in other counties in Michigan and Wisconsin. Cheboygan County, however, has voted it down in two referenda. Although the adjustment of land use to land capability is slowly being attained, zoning would help to accomplish the objective more directly in those areas where patterns of land use are changing rapidly, as in the farm-forest fringe (Renne, 1947). Cheboygan County has considerable area of farm-forest fringe.

Private need for public lands is felt most acutely in prosperous times when the margin of profit is at a high level. At least a half dozen instances were encountered in the field in Cheboygan County where private owners wanted to buy State land to increase farm holdings. State lands bearing timber of merchantable size would find a ready private market.

Economic Factors

Stability of ownership is compounded of a number of factors. In gross terms the margin of profit determines whether the private owner can pay taxes and make a satisfactory living. For agriculture in Cheboygan County the small size of farms, the long distance to markets, the short growing season, and the generally infertile soils have made private ownership tenuous.

Since the laws in the State of Michigan provide for reversion of lands to State control when taxes cannot be paid, this discussion must consider the conditions under which taxes might be delinquent. Delinquency and probable reversion will occur in serious proportions only if there is a widespread economic depression. While this occurrence appears improbable because of modern safeguards, the classes of land susceptible to reversion must be considered.

Lands Susceptible to Tax Delinquency

Lands held speculatively.--Two categories of lands are likely to bear delinquent taxes in the event of another depression. The first includes lands held speculatively or for timber production where the merchantable timber is removed and the land is left idle. This type of ownership had the highest reversion rate in 1939. At that time 30 per cent of the land held for timber production and 40 per cent of the "wild" lands, or those held for speculation, reverted to State ownership.

There is about two-fifths as much speculative ownership in the County at present as in 1938. Certainly there is no abandoned land. Of more than 50,000 acres of such land deeded to the State in 1939 in Cheboygan County, most of it has been dedicated to permanent use as State forest land. There is still, however, an estimated 20,000 acres held for sale by private owners with the profit motive.[1] However,

[1]Lands held for timber production by small private owners who are not planning for sustained yield, are low in market value after the timber has been removed. At that time they may be sold in prosperous times or perhaps abandoned in periods of economic recession.

these lands would not revert in nearly so large a proportion as in the past in the event of an economic depression.

Infertile farm and forest lands.--A second category of lands especially subject to reversion in time of depression is comprised of those parcels of low quality where the owner is solely dependent on them for his livelihood. This excludes those lands held for recreation. Using Schoenmann's land-type classes to indicate fertility for agriculture, Class II had the highest reversion rate in 1939 when 36.1 per cent of the lands deeded to the State were in this class. Class III lands were next in volume of reversion with 34.5 per cent, and Class IV was third with 22.0 per cent (see Table 53). Of the 27,140 acres which reverted in Class II, 18,706 acres had been held in speculation and 6,056 acres had belonged to farms. Half the reverted farm lands were in Class II and one-third were in Class III. There was a higher percentage of farms on Class II lands than on Class III lands. Since much of the farm land in Class II was marginal for agriculture, it is logical that more farm land reverted in Class II. More than three-fourths of the 9,261 acres of reverted lands held for timber were in Classes III and IV. Only 2,100 acres of recreation lands reverted in 1939.

The State of Michigan now owns 44 per cent of Class III lands and 60 per cent of those in Class IV in Cheboygan County (see Table 53). This reduces substantially the area of poor land subject to delinquency and subsequent

reversion. Approximately 43,000 acres, or 29.4 per cent, of Class II lands were State-owned in 1950, whereas about 85,000 acres are in private agricultural use in this land class which embraces soils not too well suited to farming. However, the prosperity of recent times has increased the income from such lands. Also the average area per farm has increased from 117 acres in 1940 to 146 acres in 1950. This approach to more economic farm units allows farm lands to be used less intensively and provides the operator with a higher income. Therefore, in the event of another depression this gradual adjustment in acreage per farm should decrease the probability of large-scale reversion of farm lands to public ownership.

A considerable area of poor lands, such as those found in land-type Classes III and IV, are now held for hunting or for a combination of hunting and timber use by private owners. Hunting lands are generally owned by persons with above-average incomes and are infrequently delinquent in tax payments. In 1939 only 2.5 per cent of all lands held for hunting and fishing reverted.[1] In the event of another depression it is reasonable to expect a low rate of reversion of lands in this use, although paradoxically the luxury expenses are the first to be retracted in depressions.

The decision for State or private ownership should be made for each parcel of land or land area. In general

[1] In the 1930's sportmen's clubs held much of the hunting and fishing lands and were well able to pay taxes.

the State should hold those lands on which the private owner cannot make a living so that tax reversion will be minimal during depressions. Lands of commercial quality and practical size should be sold to individuals and companies where they are not needed for public recreation and are appropriately located for private use.

Judging from the low level of tax delinquency at present and the low percentage of commercial lands held by the State, the balance between public and private ownership is satisfactory in Cheboygan County.

PRIVATE RURAL LANDS FORMERLY STATE-OWNED

During the depression of the 1930's many thousands of acres of lands in Cheboygan County reverted to State ownership through tax delinquency, but only a few thousands were sold by the State. This situation was reversed rather sharply after 1940 when delinquency decreased markedly and demand for lands became much greater. This section presents the results of a special study of 20,571 acres of lands sold by the State to private owners from 1936 to 1947.[1]

By 1940 the Department of Conservation was embarked on a program of examining tax-reverted lands in the field and classifying them according to their best uses in State and private ownership. The Department's policy of selling only lands approved for private ownership has helped to resolve the ownership pattern in Cheboygan County on a more scientific basis than had ever been attempted. This period of selling has brought about an equilibrium between State and private ownership under present economic conditions.

This section describes what has happened to the tax-reverted lands sold to private owners. Other description

---

[1]The study was made under the guidance of Professor W. F. Ramsdell, School of Natural Resources, University of Michigan. Mr. Fred P. Struhsaker, Secretary of the Michigan Department of Conservation, and Mr. Charles E. Millar, Chief of the Lands Division, Michigan Department of Conservation, helped outline the study.

points out their distribution, quality, cover, accessibility, and improvements. A specific objective of the study is to evaluate the effectiveness of the land disposal policy of the Michigan Department of Conservation. Therefore, the success of the applicants in obtaining these lands at auction is analyzed and the correlation between actual uses and uses acceptable to the Department is presented.

Land Disposal Policy of the Michigan Department of Conservation

After the State acquired a large tax-reverted acreage in 1939, the Department of Conservation embarked on a program of classifying its lands to determine whether individual parcels should be retained in public ownership or sold back to private owners. The general policy of the Department was to retain in public ownership only those tax-reverted lands for which there was no private use, or which appeared to be needed by the general public for hunting, fishing, and other conservation and recreational uses.

Local opinion has aided in making decisions as to what lands to retain in public ownership. Since 1940 the County Land-Use Planning Committees under the direction of the county agricultural agents have cooperated with the Department of Conservation in classifying the lands in public ownership. These committees have prepared land-use maps of their counties which present the best local opinions as to the capabilities of the lands and the uses recommended for

them. The Department constantly refers to these recommendations in the administration and disposal of State lands. They have been extremely valuable in defining the limits of new conservation project areas and in extending or retracting the boundaries of such areas already established.

The recommendations of the land-use planning committees include two major classes of lands according to ownership:

A. Lands to be retained in public ownership and dedicated to public use.
   (1) State or national forests, game areas or parks.
   (2) County forests or parks.
   (3) Township forests or parks.
   (4) School forests.
   (5) Municipal forests or parks.
   (6) Airports, dumpgrounds, etc.
   (7) Grazing under state permit.
   (8) Other public uses.

B. Lands to be made available for private use.
   (1) Farming.
   (2) Grazing.
   (3) Private forestry.
   (4) Private hunting and fishing.
   (5) Commercial resort and recreational use.
   (6) Other private use.

It is a general policy of the Department of Conservation to retain possession of all lands having water frontage. Such lands are sold only when investigation reveals that certain parcels are too small or are so situated that they are not adapted for public use. Where there is a surplus of public frontage on lakes and streams, the less desirable sections are sold. Stream-bordered lands that are suitable and needed for agriculture may be sold to private owners.

In these instances the State reserves an easement along the streams for public fishing, stream improvement, and other rights incident thereto.

In making a decision as to the disposition of lands in State ownership (that is, whether a given parcel should be returned to private ownership, dedicated to public use, or perhaps reserved for future exchange), a number of questions are discussed by the Conservation Commission which makes decisions on disposal. The broader questions posed are these:

1. Is the land suitable and needed for public conservation purposes? Is it needed for forest, game, or fish production, or for recreational area?
2. Does the land have agricultural value? Agricultural use is generally given priority over public use.
3. If sold, what is the probability that it will remain in private ownership? This question has decreased in importance the last 10 years.
4. What is the balance between public ownership and private holdings? In some counties public ownership is so extensive that it is deemed wise to sell to private owners lands which otherwise might be dedicated to public use.
5. What is the balance between public and private

need? For instance, in deer hunting country public ownership is desirable, yet private recreational needs must be considered.

6. Is the tract isolated with respect to State project areas? What is the nature and ownership of surrounding lands?
7. Is the land needed by the State in order to give road or hunting access to a larger tract that would otherwise be isolated?
8. What is the local opinion concerning the future use of the land? Sometimes local interests are opposed to state interests and an exchange of ideas must take place to resolve the matter. Since the Department of Conservation exists to serve the people, it must be considerate of local need, yet it must also perform its duty in working toward conservation goals. Often local people can give good guidance to the Department. The county land-use planning committees have been an appropriate medium for communicating opinions between the Department of Conservation and the people.

Since most of the lands offered for sale by the Department have now been sold, a modified disposal policy has been adopted. Henceforth all lands inside project area boundaries will be retained unless they are traded with the

federal government or private individuals in order to block in respective holdings advantageously for administrative purposes. Lands lying outside the boundaries of project areas are sold unless they have water frontage valuable for public use.

Procedure for Acquisition by Private Owners

In order to buy State land not listed for sale, an individual must file an application with the Lands Division of the Department of Conservation on a standard form. Above all he must indicate what use he intends to make of the property. If this use is approved by the Conservation Commission for the land in question, the application is accepted and a land examiner inspects and appraises the land.

All lands approved for sale must be offered at public auction after being properly advertised. Such advertisements, setting forth the time and place of the auction, must appear at least 10 days prior to the date of the auction in a leading newspaper published in the county where the lands are located. Descriptions of the lands approved for sale are mailed to all persons who request copies, to all applicants, to the county treasurer, and to all field offices of the Department of Conservation.

Auctions usually are held at a county seat several times a year or whenever an adequate list of salable lands has accumulated to warrant an auction for one county or a group of counties. Lands are sold to the highest bidder for

not less than a previously appraised price. In the past this price has been approximately one-fourth of the last assessed valuation on the county tax records plus the value of any timber on the land. The applicant(s) must bid on the lands in competition with other bidders.

The full amount of the bid price must be paid at the time of the auction. The successful bidder is given a purchase certificate which provides that within 30 days subsequent to the auction any former owner of an interest in the land at the time the land was offered at the county treasurer's tax sale may redeem the property by filing the required application and paying to the Lands Division the amount of the successful bid. In the event the property is redeemed, the original bidder will be refunded the amount of his bid upon the surrender of his purchase certificate. If the property is not redeemed in the 30-day period, a State deed will be issued to the successful bidder in exchange for the purchase certificate.[1]

Former owners applying to redeem their lands from the high bidder must file their applications on specific forms within 30 days after the sale. The full amount of the high bid must accompany the application. On the expiration of the redemption period, a deed will be awarded to the applicant holding the greatest financial interest.

---

[1]Volume of sales by years is listed in Tables 57 and 67.

Descriptions not sold at the auction are listed by counties, and copies of the lists are distributed without charge upon request. Any of these lands may be purchased by the first person remitting the amount of the sale price to the Lands Division (Mich. Dept. Conserv., 1949c).

To help farmers and others obtain State-owned parcels of land adjacent to their holdings, the Department of Conservation has an exchange policy whereby the land owner can purchase a privately-owned parcel of equal value suitable for incorporation into a State project area and exchange it for his parcel of interest. This action is dependent on the Department's approval of the private owner's intended use of the land and on whether such land is available and suitable for private ownership. The Department also advises the land owner in his selection of a parcel to give to the State in exchange. However, relatively few individuals take advantage of this opportunity and more often try to obtain the parcel of interest at the auction.

Individuals may apply for lands within State forests or project areas. However, the Department of Conservation handles such transactions, if approved, only on an exchange basis.[1] Usually such an exchange is one of accommodation to the private owner, where the land he wants is adjacent to his holding and the intended use approved by the Department.

---

[1]See section on exchanges in the chapter, State-Owned Rural Lands.

Under the authority of Act 280, Public Acts of 1909, the Conservation Commission has adopted the policy of reserving all mineral rights, including sand and gravel in commercial deposits, rights of ingress and egress over lands along water courses, and aboriginal antiquities (Act 173, Public Acts of 1929, as amended) when disposing of State lands. Two classes of mineral rights are distinguished: (1) land in which the State owns the fee, or both surface and minerals, and (2) lands in which it owns minerals only. The latter class of ownership was instituted by an act of 1909 which stipulated that mineral rights shall be reserved on lands sold and that such rights may be leased. In 1917 an amendment was legislated which authorized the selling of sand, gravel, limestone, and other non-metallic minerals. Then in 1929 an amendment provided for the sale of all mineral rights. The Conservation Commission, however, has adopted a policy of leasing mineral rights on a royalty basis. Such rights are sold at public auction to the highest bidder (Mich. Dept. Conserv., 1949c).

Ownership History and Area Sold by Periods

In 1947 when the research for this section was planned, the officials of the Department of Conservation wanted information for as large an area of lands sold in Cheboygan County as possible. Accordingly, it was agreed that lands sold from January 1, 1936, to January 1, 1947,

should be included in the study. Prior to 1936, there were very low volumes of annual sales.

During this 11-year period the State of Michigan (through the Lands Division of the Department of Conservation) sold 20,571 acres of land to private owners in Cheboygan County.[1] These lands had come into State ownership largely by means of the reversion procedure for tax-delinquent lands as set forth in the general property tax law, Act 206, Public Acts of 1893.

Prior to sale some of the lands had been in continuous State ownership from as long ago as 1904 (see Table 54). In 1939 almost 12,000 acres, or 58 per cent of the 20,571 acres sold back to private owners, were deeded to the State through tax delinquency. Another 23.9 per cent of the lands reverted to State ownership in the years 1928 and 1931. Table 54 shows that 57.7 per cent of the lands were in State ownership for 1 to 6 years, 93.9 per cent for 1 to 18 years, while 6.1 per cent were State-owned for 18 to 42 years.

Ninety per cent of the 20,571 acres were purchased from the State of Michigan after January 1, 1941. Since 75,229 acres were deeded to the State in 1939 in Cheboygan County and not more than about 18,700 acres have been sold

---

[1] This acreage was purchased by 298 persons and included 529 legal descriptions ranging in area from a very few as small as 8 acres to some as large as 44 acres. There were some 20-acre parcels, some "short" forties as small as 26 acres, and "long" forties up to 44 acres.

TABLE 54

AREAS SOLD BY STATE BY YEAR OF DEED TO STATE AND THE NUMBER OF YEARS IN STATE OWNERSHIP

Year of Deed to State	Acres	Per Cent	Years in State Ownership at Time of Sale	Acres	Per Cent
1904	445	2.2	0-3	5,421	26.3
1910	150	0.7	4-6	6,467	31.4
1916	37	0.2	7-9	2,255	11.0
1919	406	2.0	10-12	1,554	7.5
1924	260	1.3	13-15	2,094	10.2
1926	1,068	5.2	16-18	1,537	7.5
1928	2,647	12.9	19-21	530	2.6
1931	2,253	11.0	22-24	80	0.4
1939	11,952	58.0	25-27	77	0.4
1940	421	2.0	28-30	40	0.2
1941	490	2.4	31-33	40	0.2
1942	360	1.7	34-36	150	0.7
1943	42	0.2	37-39	123	0.6
1944	40	0.2	40-42	203	1.0
Total	20,571	100.0		20,571	100.0

since that time, it can be assumed that the balance has been predominantly dedicated to permanent public ownership and use. The Conservation Department's listing of lands available for immediate purchase in Cheboygan County in April, 1949, presented only 270 acres. On the list for 1948 only 60 acres were for sale. About 2,760 acres were sold in the County from July 1, 1947, to July 1, 1950, subsequent to the sale of lands included in this study (see Table 67).

Method of Study

The legal descriptions for the properties studied were obtained from the records of the Lands Division, Michigan Department of Conservation, in 1947. All properties sold from January 1, 1936, to January 1, 1947, in Cheboygan County were included in the study. For each description the following information was copied from the abstract books: the name of the purchaser, the acreage, the date of the State deed, and the purchase price. From the tax rolls of Cheboygan County the assessed valuations and taxes for the years 1937, 1945, and 1948 were recorded. Delinquent taxes for 1945 and 1948 were noted.

Each description was recorded on a separate field sheet on which information collected in the field was set down. Each parcel of land was located in the field during the summer of 1947 with the aid of cover-type maps made by the Michigan Land Economic Survey in 1932. Where no boundary markers were visible, properties were located by cover types.

All roads and trails bordering or crossing a description were traversed in order to examine the area. If the owner or tenant could be interviewed, information was obtained concerning the use of the property. If the owner was not available, neighbors, township officials, or realtors often furnished valuable information. Important data recorded for each parcel included any change of ownership, description of the timber stand, improvements on the land, long-term use, status of occupancy, and distance to the nearest road. In the summer of 1949 these factors were again checked in the field, especially the use factor. A determined effort was made to get information about lands owned by non-residents.

Results of Sale

Success of Applicants

The success of applicants in buying their property of interest at the auction is a measure of the success of the policy of the Michigan Department of Conservation for selling land to private owners. Theoretically, the applicant should be able to buy the land which he wants. However, according to law, if the Department approves his intended use by putting his property of interest on the auction block, then he must bid in competition with other applicants and non-applicants.

The results of the sale of 20,571 acres of land by the State of Michigan from January 1, 1936, to January 1, 1947, show that the persons who applied for lands in order

to get them put on sale were not adequately rewarded.[1] Only 127 applicants, or 29.6 per cent of all buyers, were highest bidders at the auctions and therefore successful in buying the parcels of land for which they applied. However, not all applicants could have purchased their desired lands because two or more persons applied for the same descriptions in some instances. Since there were 298 buyers and 529 parcels, many buyers purchased more than one parcel. Fifty parcels were sold without applications. These were put on sale after a classification of all State lands by the county land-use planning committees resulted in decisions by the Conservation Commission to return certain lands to private ownership.

The study shows that the applicants were parties who needed the land in most instances--at least they were interested enough to apply to get certain parcels of land put up for sale. Some of the non-applicants, who purchased land by outbidding applicants, were speculators. However, it is certain that some applicants had ulterior motives in mind when they designated on their applications uses which they knew would be acceptable to the Department of Conservation and would ensure that the parcels of interest would be put up for auction.

---

[1]All lands sold by the Department of Conservation are first put on auction. If certain lands are not bid on, they may be purchased for the minimum price immediately after the auction or later over the counter at the office of the Lands Division.

There are several reasons why all applicants were not successful. First, some did not attend the auction for various reasons. Secondly, in many instances there was more than one applicant for a given parcel. Thirdly, many applicants were outbid.

Purchase Prices

The minimum price established for each parcel of land to be sold at auction is generally set at one-fourth the last assessed valuation plus the stumpage value of timber. During the biennium 1945-46 there was peak attendance at the land auctions and competitive bidding was considerably greater than before or during the war years. Much interest has been shown in properties located in or near resort areas which are suitable for recreational use. Properties with merchantable wood have also been the object of keen competitive bidding.

During the biennium of 1945-1946 the average price per acre of lands sold in all counties was $3.31 or 57 cents higher than the previous biennium. In the biennium 1947-1948 the average sale price per acre rose to $4.85. This rise can be attributed to the demand for land and to rising incomes. In the years 1949-1950 the average sale price for all counties decreased to $4.30, but during the biennium 1951-1952 it rose markedly to $7.74 per acre, when 33,500 acres were sold as compared with 79,000 during the previous biennium. The high demand for land and the smaller area of

land available for sale in a period of high economic prosperity is the reason for the present high land prices.

From 1936 to 1947 in Cheboygan County the selling prices of 40-acre parcels ranged from $37.50 to $800.00 (see Table 55). The lowest price was paid for a parcel of land that is being held for timber and hunting uses while the highest price was given for a 40-acre parcel within one-quarter mile of the west shore of Mullett Lake and will be developed for one or more summer residences. Table 55 presents the selling prices classified by $25.00 increment groups.

Almost half of the lands sold for prices ranging between $76.00 and $100.00 per forty.. Table 56 sets forth the statistics on the purchase prices according to land use. The average price per acre for all lands sold was $3.05.

The highest purchase price per acre was given for the land used for summer residences. However, the figure of $5.84 is abnormally high because of the influence of one sale of 40 acres for $800.00. If this unusually high price were excluded in this use classification, the average purchase price per acre would have been $3.09, about the same as that for pasture. Land purchased for summer residence purposes had no improvements in the way of buildings and was not located on any of the large resort lakes.

The use, "Rural Residence," is second in importance according to price per acre with a figure of $3.80. Three

TABLE 55

SALE PRICE RANGE FOR STATE LANDS PURCHASED IN CHEBOYGAN COUNTY, 1936-1947*

Price Range	Number of Parcels	Acreage	Per Cent of Total Acreage
$ 26-50	8	307	1.5
51-75	30	1,157	5.6
76-100	264	10,132	49.5
101-125	77	3,018	14.7
126-150	31	1,107	5.4
151-175	45	1,791	8.7
176-200	30	1,112	5.4
201-225	6	231	1.1
226-250	10	355	1.7
251-275	6	246	1.2
276-300	7	269	1.3
301-325	8	307	1.5
326-350	1	40	0.2
351 up	7	239	1.2
Total	529	20,571	100.0

*The price of all parcels was computed on the basis of the price for 40 acres, since some parcels were more and some less than 40 acres in area due to original survey errors and the fact that some descriptions included in the study were 10 to 20 acres in size.

of the 14 parcels in this use had houses present which increased the sale prices.

The average purchase price per acre of $3.38 for lands used for "Timber" is fairly high in comparison with other uses because the State sets a minimum price that includes the value of the stumpage. The price is a

TABLE 56

AVERAGE PURCHASE PRICE PER ACRE FOR ALL USES OF LANDS SOLD IN CHEBOYGAN COUNTY, 1936-1947

Use	Acres	Total Purchase Price	Average Purchase Price Per Acre
Pasture	5,183.5	$15,920	$3.08
Timber	4,459.7	15,043	3.38
Speculation	3,286.6	9,044	2.75
Woodlot	2,122.0	5,919	2.80
Hunting	2,015.8	6,370	3.16
Unknown	1,021.0	2,510	2.63
Summer Residence	900.1	3,457	3.84
Crops	823.7	1,333	3.05
Orchard	407.3	1,074	2.64
Rural Residence	351.7	2,685	3.80
Total	20,571.4	$63,355	3.05

reflection of the high demand for land with timber and of keen competitive bidding. Most of the lands classified under timber intent have had timber removed from them. Only four applications for land were approved by the Department of Conservation where the intended use was for timber harvesting only. A much greater number was accepted for farm woodlot use.

Lands used for hunting sold for a price higher than would be expected, judging from the quality of the land. This price reflects a demand which is only slightly greater than the demand for lands for other uses. The parcels used for "Pasture" and "Crops" sold for prices that were above

average for all lands. Those acreages where the use classifications include "Farm Woodlot," "Speculation," "Orchard," and "Unknown" brought prices below the average of $3.05 per acre.

Land buying reached a peak in the County in 1943, although it continued at a rather high level with the second highest acreage sold in 1946 (see Table 57). However, the decrease in acreage bought annually subsequent to 1943 does not indicate a decrease in demand for land but a diminution in the State land available for sale in Cheboygan County.

The general though inconsistent trend upward in the average sale price per acre from $1.57 in 1936 to $4.23 in 1946 for Cheboygan County indicates an increased demand for land resulting in more competitive bidding at the auctions. However, the decreased value of the dollar is also partially responsible for this trend in higher sale prices and is reflected in the increased minimum prices set by the Department of Conservation. Certainly the increase does not indicate a higher quality of land available for sale.

Description

Distribution

The 20,571 acres considered in this study are distributed in 21 of the 25 civil townships in Cheboygan County (see Fig. 13). Two townships lying in the eastern half of the County in the southern tier, the east half of Nunda,

TABLE 57

AVERAGE SELLING PRICE PER ACRE AND ACREAGE SOLD ACCORDING TO YEAR OF SALE IN CHEBOYGAN COUNTY

Year	Number of Parcels	Area, Acres	Per Cent of Total Area	Total Price	Average Price Per Acre
1936	7	249.4	1.2	$ 390	$1.57
1937	17	616.8	3.0	1,195	1.94
1938	8	318.6	1.5	595	1.87
1939	17	699.2	3.4	1,634	2.34
1940	5	180.0	0.9	280	1.56
1941	49	1,921.0	9.4	5,666	2.95
1942	80	3,096.5	15.0	9,235	2.97
1943	123	4,814.2	23.4	13,409	2.78
1944	65	2,532.2	12.3	7,782	3.06
1945	76	2,977.0	14.5	9,720	3.25
1946	82	3,166.5	15.4	13,449	4.23
Total	529	20,571.4	100.0	$63,355	$3.05

T. 34 N.,R. 1W, and Maple Grove, T. 34N.,R. 1E, contain none of the lands sold back to private owners. Benton-Grant Township, T. 37N., R. 1W., has none of this land within its boundaries. More than half of its area is dedicated to a part of the Black Lake State Forest. The only other township in which there is none of the former State land is T. 38N., R. 1W., in which the City of Cheboygan lies.

Land Quality

The quality of the lands sold to private owners by the State is defined by classifying them according to

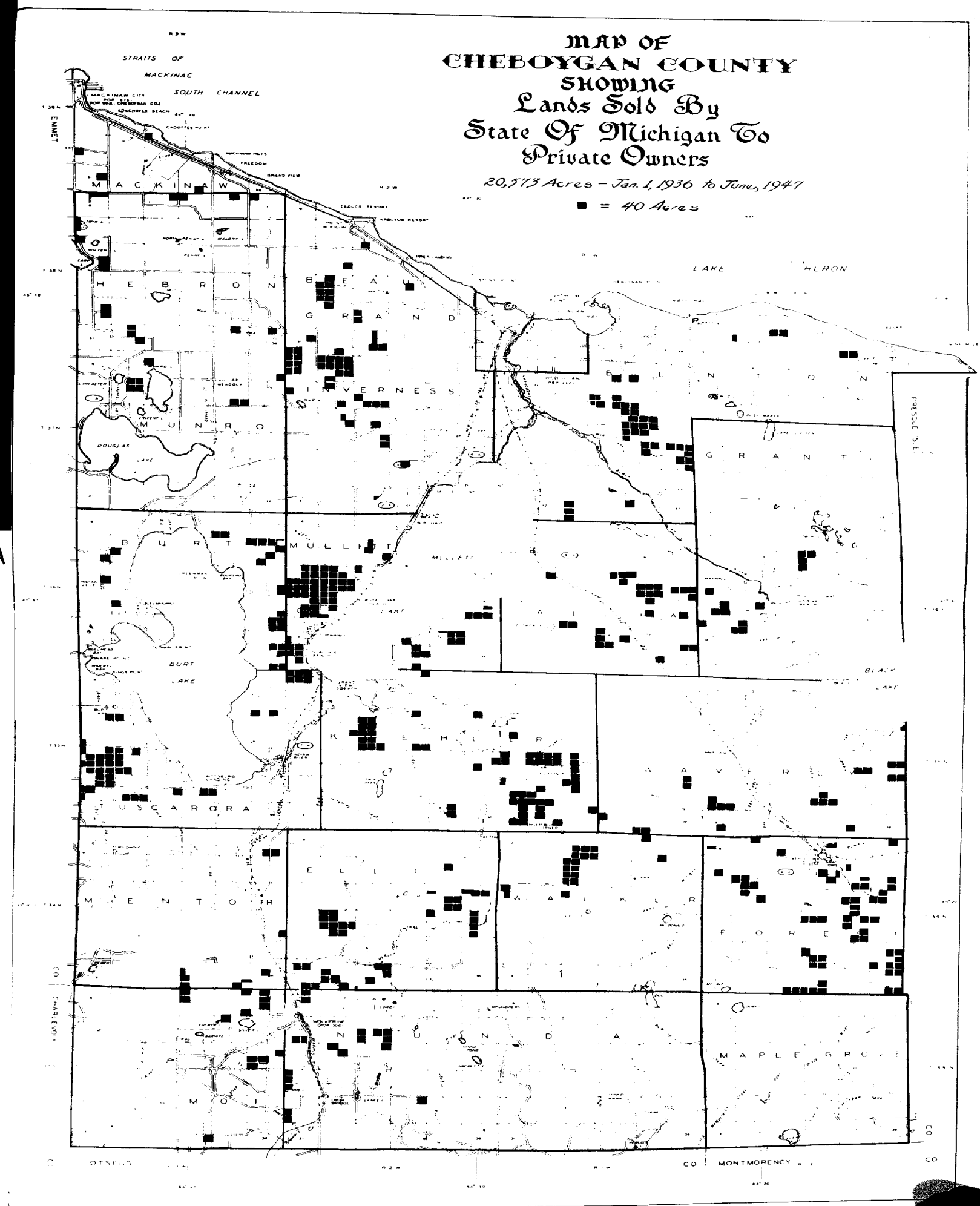


Fig. 13.--Lands Sold by the State to Private Owners

Schoenmann's land types.[1] Table 53 presents a tabulation denoting the quality of these lands.

The area of land sold in Class I, the best agricultural land, comprises 3,829 acres or 18.6 per cent of all lands sold, or 6.7 per cent of all lands in Class I in the County. This is more acreage than the State now owns in Class I land types. Class II has almost 40 per cent of the lands sold, the largest area in any of the four land-type classes. Therefore, more than 58 per cent of these lands are in the two best land types. This fact substantiates in part the effectiveness of the policy of the Michigan Department of Conservation in selling to private owners those lands that will pay their way.

Class III with 5,901 acres has the second largest acreage, 60 per cent of which are used by the purchasers for timber production, pasture, and hunting. Class IV has the smallest area which amounts to 13 per cent of the total, or 2,709 acres.

Cover

Cover was typed by broad classes in 1949, two years after the last lands included in this study were purchased in order that the owners who bought in 1946 would have had ample time to get their properties into use. Lands with

---

[1] Refer to Table 83 for definitions of land types.

forest cover comprised almost 64 per cent, or 13,022 acres, of the 20,571 acres surveyed (see Table 58). These properties are used for timber production, farm woodlots, pasture, and hunting, while in some instances the motive for purchase was speculation.

On the 9,085 acres of forested parcels uncut since purchase, the timber is not generally merchantable because of small sizes. The aspen type is predominant and sprout growth of maple, birch, and oak along with the swamp-coniferous type are of secondary importance according to area. The 2,533 acres which had been lightly or partially cut since purchase had carried merchantable aspen, spruce, balsam, and in a few instances red pine. Christmas trees and boughs were not the least of the forest products harvested. Much of this acreage is in farm woodlots.

About 7 per cent of the total area sold was cut for merchantable timber. This area of 1,404 acres was classified as "timber" use. Only one of the owners interviewed was planning for sustained yield. Such properties brought the highest prices at the auction, with the exception of lands purchased for summer homes or rural residences. However, in too many instances the objective of the buyer was to cut and market the timber and then sell the land.

The lands with a cover of grass, brush, and scattered trees, or clumps of trees, are used mostly for pasture and in some measure for hunting. This type of cover

TABLE 58

ACREAGE IN BROAD COVER TYPES*

Type of Cover	Acres	Per Cent
Forest (total)	13,022	63.3
Uncut	9,085	44.2
Lightly or partially cut	2,533	12.3
Clear-cut	1,404	6.8
Brush, grass, scattered trees	5,620	27.3
Crops	824	4.0
Grasslands	698	3.4
Orchard	407	2.0
Total	20,571	100.0

*This tabulation presents a classification of lands according to cover type as determined in 1949, at least two years after the last included lands were purchased.

comprises 5,620 acres, or 27.3 per cent, and is second in importance according to area. The 698 acres of grassland are used primarily as pasture, indeed most of it is improved pasture. However, since 5,296 acres sold back to private owners are used for grazing and only 698 acres can be classified as grassland (see Table 63), therefore approximately 86 per cent are wooded or brushy.

Lands used for cultivated crops amount to only 4 per cent according to area. This is somewhat surprising considering the need for tillable land, because 3,921 acres of the lands sold are in Class I land types. Of the 407 acres in orchards, 360 acres have been recently planted by a fruit-growing concern.

Accessibility

Accessibility by maintained roads, whether they be graded, graveled, or paved, is of importance in any type of land use. Perhaps hunters and other recreationists are the only persons who would not consider a maintained road to their property a prime necessity. In this instance it might detract from their recreational values, since they ordinarily want isolation to some extent. Otherwise a private road or trail is almost a necessity.

The parcels of land sold by the State to private owners are classified in Table 59 according to their proximity to a maintained road. Almost 43 per cent are located adjacent to roads. This fact suggests that these lands were not formerly classed with the inaccessible "wild lands" which reverted to the State in large numbers in 1939.

About 32 per cent of the parcels were one-fourth of a mile from a road or separated from a road by a "forty." The remaining 25 per cent are predominantly one-half mile from a road, although some are as far as one and one-half miles.

TABLE 59

ACCESSIBILITY BY ROADS OF 20,571 ACRES SOLD BY THE STATE TO PRIVATE OWNERS

Distance to Nearest Maintained Road[a]	Number of Parcels[b]	Per Cent of Total Parcels	Acres
On roads	227	42.8	8,629
¼ mile	168	31.8	6,457
½ mile	84	15.9	3,333
¾ mile	27	5.1	1,235
1 mile	12	2.3	477
1-1½ miles	11	2.1	440
Totals	529	100.0	20,571

[a]Most properties not located on maintained roads were accessible by trails. All parcels were classified by the shortest distance from any boundary line to the nearest road on cardinal directions.

[b]A parcel here means a piece of land 40 acres or less purchased as a unit description.

The average distance to a maintained road is .26 miles. Generally, the Department of Conservation does not consider accessibility to roads of prime importance in putting lands up for sale. In the field survey no comments were heard concerning lack of roads, probably because most parcels are accessible by at least a trail.

Fencing

Table 60 shows that almost 22 per cent of the parcels purchased from the State were fenced before acquisition. This indicates that these 4,458 acres belonged to farms which reverted wholly or in part to State ownership through tax delinquency. Doubtless this land was used formerly for pasture and cropland.

Forty-two parcels comprising 1,648 acres have been fenced subsequent to purchase. Along with the areas already fenced, they total 6,106 acres, more than the 5,296 acres now used for pasture. However, 1,534 acres have been fenced specifically for hunting, and these, along with the area in pasture use, amount to more area than is now entirely fenced. Stock is grazed on some areas without fence.

Buildings and Occupancy

About 15 per cent of the 529 parcels investigated had buildings present at the time of the field survey. Table 61 shows that 34 farm residence units were present before acquisition, 25 of which were occupied. Nineteen residences, including 8 farm homes and 11 non-farm rural residences, have been erected since the lands were purchased. Also 12 summer residences and 13 hunting cabins have been constructed.

The summer residences and rural non-farm residences are not in scenic locations, for the most part. Both types are modest in size and construction. The non-farm rural

TABLE 60

NUMBER OF PARCELS FENCED

Condition of Fencing	Number of Parcels	Per Cent of All Parcels	Acreage
Fenced before acquisition	115	21.8	4,458
Fenced since acquisition	42	7.9	1,648
Partially fenced since acquisition	18	3.4	698
Not fenced	354	66.9	13,767
Totals	529	100.0	20,571

residents are predominantly people of the older age groups seeking to live modestly on 20 to 40 acres in semi-retirement. Several of these couples left the cities after the rather grueling years of work in war plants. Some no doubt have incomes from pensions, such as one retired Detroit policeman, and some are probably receiving old-age pensions.

Residence of Owners

A classification of the residence of purchasers of State lands in Cheboygan County gives an insight into the trend of the ownership pattern. Ownership residence is a key to land use to a limited extent.

TABLE 61

NUMBER OF PARCELS WITH BUILDINGS
AND STATUS OF OCCUPANCY

Classification of Buildings	Number of Parcels (or Building Units)	Per Cent of Total Parcels	Acreage
Farm buildings present before acquisition	34	6.4	1,342
Occupied	25	4.7	959
Vacant	9	1.7	383
Residences erected since acquisition	19	3.6	666
Farm residences	8	1.5	314
Rural residences	11	2.1	352
Hunting cabins	13	2.5	523
Summer residences	12	2.1	356
Without buildings	451	85.4	17,684
Totals	529	100.0	20,571

Almost 64 per cent of the 20,571 acres of State land were purchased by 182 residents of the County (see Table 62). Of this area (13,122 acres), 12 per cent is held by 41 owners residing on the land. Approximately 16 per cent of the resident-owned acreage is "adjacent" or contiguous to the holdings of 52 owners. Fourteen per cent is located up to three miles from 31 owners' original holdings, or

TABLE 62

AREA OF STATE LAND SOLD TO PRIVATE OWNERS
CLASSIFIED ACCORDING TO RESIDENCE

	Acreage	Per Cent of Total Acreage	Number of Owners	Per Cent of Total Owners	Acreage Per Owner
County					
On the land	2,488	12.1	41	13.8	60.7
Adjacent	3,268	15.9	52	17.4	62.9
Nearby (0-3 miles)	2,853	13.9	31	10.4	92.0
Other	4,513	21.9	58	19.4	77.8
Sub-total	13,122	63.8	182	61.0	72.2
Out-of-county					
Adjacent county	480	2.3	15	5.1	32.0
Down-state	3,404	16.5	52	17.4	65.5
Detroit	2,509	12.2	23	7.8	109.0
Upper Peninsula	40	0.2	1	0.3	40.0
Sub-total	6,433	31.2	91	30.6	70.7
Out-of-state	201	1.0	5	1.7	40.2
Unknown	815	4.0	20	6.7	40.6
Totals	20,571	100.0	298	100.0	69.0

"nearby"--the distance factor being an assumed maximum distance which a farmer might negotiate in order to till land or to pasture stock.

The largest single category of resident ownership according to area is that acreage acquired by 58 persons residing in the County more than three miles from the parcel or parcels purchased. This group bought almost 22 per cent of the total acreage purchased by County residents.

Thirty-one per cent of the State land area sold was bought by 91 out-of-county Michigan residents. Of this number, 52 persons living "down-state" in counties in the Lower Peninsula not adjacent to Cheboygan County, excluding Detroit, own 16.5 per cent of this land. Twenty-three Detroiters own 12 per cent or, on the average, 109.0 acres per person. This is the highest acreage of State land acquired per owner.

Five buyers reside in other states. The residence of another 20 is unknown. The fact that almost one-third of all the owners are non-residents of the County emphasizes the trend toward absentee ownership.

Reaction of Private Owners to the Sale Policy of the Michigan Department of Conservation

It is perhaps the nature of man to complain more vociferously about his wants than to declaim about his acquisitions. Accordingly, some complaints were heard in Cheboygan County concerning the policy of the Michigan Department of Conservation in selling land. The most common one was that the auction procedure did not always allow the applicant to obtain the desired property because he often was not able financially to outbid other parties who were sometimes "land buyers."

Several farmers were disgruntled because the Department would not sell properties adjacent to their farm units for pasture because those descriptions had stream frontage. In one instance the local claim was that the stream was intermittent and therefore not valuable for recreation.

Numerous buyers of State land dislike the Department's policy of withholding mineral rights to the lands sold. They felt that gravel or oil rights might be leased by the State on their holdings and that access roads and traffic across their property would interfere with their own operations. However, no instances of such situations were encountered in the field.

In all, relatively few criticisms or favorable comments were evoked in the field. Generally, it is believed that buyers of State lands have no justifiable complaints and actually are pleased with the values received.

Use

Classification of Lands by Use

A classification of the uses of lands acquired from the State indicates to some extent the trend in land use in the County and how much of the land is apt to remain in private ownership without reversion. The uses for which there is the greatest demand for land in order of importance according to area are pasture, timber, speculation, woodlot, and hunting. All these, with the exception of speculation, lend stability to ownership in these prosperous times.

Table 63 gives the land-use classification for the 20,571 acres of land sold by the State to private owners from January 1, 1936, to January 1, 1947.

Pasture use.--Table 63 reveals that approximately 26 per cent of the land purchased from the State are used for pasture, the largest single use. Milk cows, beef cattle, horses, and a few sheep are grazed in Cheboygan County (see Fig. 14). Several owners of extensive properties raise large herds of beef cattle. One owner in Afton has purchased 400 acres from the State in the past 10 years on which he has pastured as many as 500 beef cattle. Two retail dairymen have bought State land for pasture. The one owning the more extensive holdings has purchased 600 acres from the State since 1930.

TABLE 63

LANDS SOLD TO PRIVATE OWNERS BY THE STATE CLASSIFIED ACCORDING TO USE

Use	Acres	Per Cent of Total
Pasture	5,296	25.7
Timber	3,829	18.6
Speculation	3,098	15.1
Hunting	2,250	10.9
Unknown	1,950	9.5
Woodlot	1,937	9.4
Summer Residence	746	3.6
Crops	633	3.1
Rural Residence	425	2.1
Orchard	407	2.0
Totals	20,571	100.0

Milk production in Cheboygan County, total acreage in pasture, and number of stock pastured all decreased in 1950.[1] Therefore, the demand for pasture indicates a trend toward providing a larger area per head of stock and perhaps retiring old pasture to other uses such as farm woodlot.

---

[1]See Tables 31, 75, and 79.



Fig. 14.--Land purchased from the State and used for pasture (T.34N., R. 1W., Sec. 9, Nw$\frac{1}{4}$ of Sw$\frac{1}{4}$). The owner of this property purchased 320 acres and fenced 240 acres on which he pastures beef cattle and milk cows. One 40-acre parcel is planted to field crops and truck garden crops. Another is to be planted with pine seedlings for the production of Christmas trees.

Timber use.--The use of land for growing timber is second in importance. Almost 19 per cent of the lands, or 3,829 acres, are in this use which includes the growing of pulpwood, saw logs, posts, Christmas trees, and miscellaneous forest products. Other special products include cedar boughs for holiday wreaths and cabin logs. Land used for growing timber is distinguished from that used for farm woodlots by the fact that the products from woodlots are not sold but are used by the owner.



Fig. 15.--A load of hardwood logs on the way to the mill. The logs were cut from the stand in the background (T. 34N., R.2W., Sec. 14, Ne¼ of Se¼). The 120-acre property was purchased from the State for $480 in 1942, but it was resold twice. The third owner sold the timber to a jobber who planned to cut 100,000 board feet.

Little timber of saw-log size is available in the County. Fig. 15 showing a truckload of logs on the way to the mill gives some idea of the size of timber being cut at present. Along with the Norway pine and hardwood logs cut for lumber in scattered areas, pulpwood, fuelwood, and cabin logs make up the bulk of the cutting in the County (see Fig. 16).

Lands held for timber intent vary from clear-cut areas to a few with promising stands. There is very

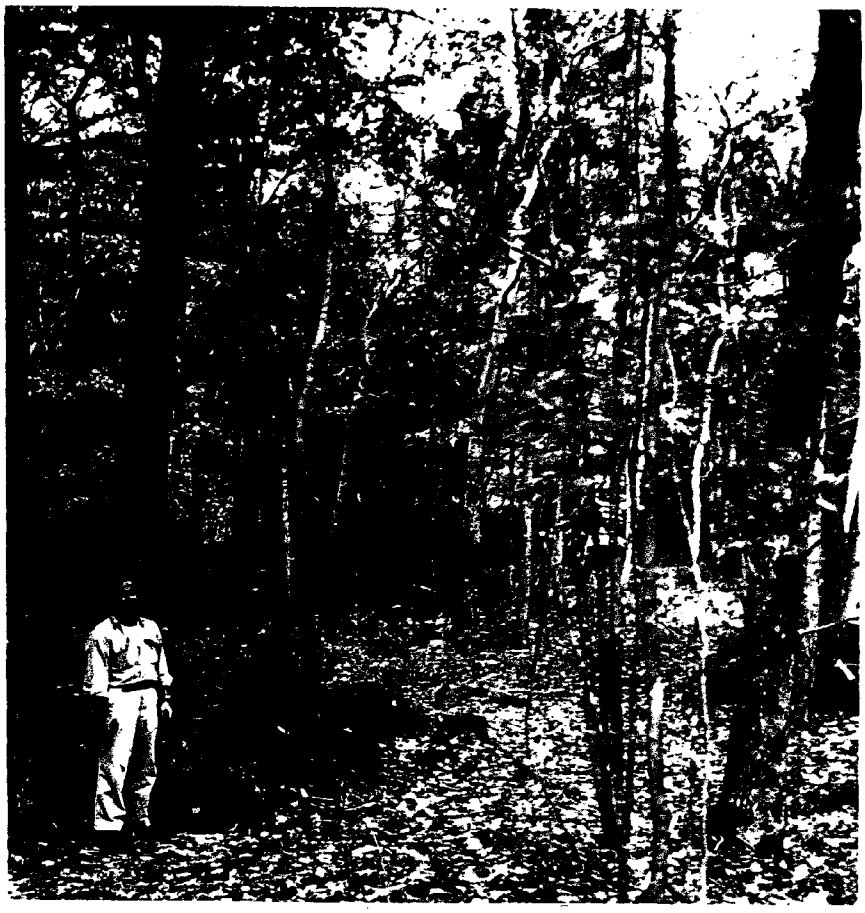


Fig. 16.--Mixed pine and hardwood stand with slash (T.35N., R.3W., Sec. 12, Nw¼ of Sw¼). White pines 8 inches and over were logged and sawed by a portable mill set up nearby.

little merchantable timber on the lands surveyed. Some properties held for timber use are not adapted for growing merchantable timber at present because the soil is too poor.

Speculation.--The ownerships classified as "speculative" are those where the owner is holding the land for sale with the intention of realizing a profit. These include 3,098 acres, or 15 per cent of the total acreage studied. Of course the owner seldom admitted openly that he was

speculating in land. In some instances neighbors or realtors divulged the speculative interests of such owners. Lands purchased by realty firms were classified in this use. Properties which were for sale after the owner had removed marketable timber were largely placed in this category. Fifteen properties used in this manner were observed in the field. The fact that some properties had been resold one or more times indicated speculative interests.

The large acreage of land that has been resold since its purchase from the State is strong evidence that speculation is quite extensive. One hundred twenty-two parcels, or 23 per cent, of the 529 parcels sold by the State have been resold at least once. By 1949 11 parcels had changed hands two or more times.

In three townships near the Village of Wolverine, three local land buyers purchased a total of 14 parcels totaling 550 acres. One of these individuals was a local political official, another a retailer. All 14 parcels were sold within two years after purchase.

Most of the complaints concerning the auction type of land sale came from the Wolverine locality. Seven farmers in this area applied for land but were outbid at the auctions. However, they subsequently purchased the desired lands from the speculators at figures higher than the prices paid at the auction.

One outstanding example of land speculation is offered by the Michigan Tax Title Service Bureau, a realty company of Detroit, Michigan. Since 1941 this company has purchased from the State 35 legal descriptions in Cheboygan County totaling 1,370 acres. Approximately one-fourth of this acreage had been resold to private owners by 1949. The name of the company is designed to lead people to believe they are dealing with a State agency. Advertisements of this company appear in the Detroit newspapers to interest city people in buying recreation land in the northern portion of the State.

Of the 35 descriptions purchased by this realty company, 23 were still listed as State land on the County tax rolls in 1947, although 1 was purchased in 1942, 4 in 1943, 4 in 1944, and 14 in 1945 and 1946. Of the 12 descriptions assessed on the tax rolls, 2 in the company's name showed delinquent taxes for 1945, and 4 showed new owners of whom 2 were delinquent for 1945 taxes.

According to reports of several local people, this company sends to the land auctions an agent who contacts the clerk when the bidding is over and purchases all lands not bid on. Thus lands are acquired at the minimum sale price. In one instance, this company paid the State $120 for a 40-acre parcel, sub-divided it into 10-acre lots, and advertised them for sale at $500 each (see Fig. 17). Quite often this



Fig. 17.--Aspen stand on 40 acres of land purchased by Michigan Tax Title Service Bureau from the State in 1939 for $80 (T.36N., R.2W., Sec. 17, SW¼ of SE¼). This property lies one-half mile west of Mullett Lake. It was being offered in 10-acre parcels for $500 each.

agency sells land on a payment plan whereby it reclaims title on the first default of payment.

The Tax Title company intends to escape paying local taxes if possible. The local assessors contact the company's Detroit office by letter in an effort to collect taxes, but the manager usually claims that the land has been sold and refuses to divulge the name of the buyer.[1] The local people

[1]Sales are supposed to be recorded with the register of deeds, but evidently the realty company attempts to postpone tax payments as long as possible.

are quite familiar with the operations of this realty company and generally resent its buying State land. It seldom inspects its lands nor does it make improvements of any kind. Consequently trespass is common.

Two outstanding transactions made by the Tax Title Service Bureau were the sale of two 40-acre parcels along Route No. 27 near Mullett Lake. These two properties were purchased from the State in 1942 for $160 and $200 respectively. They were sold in 1946 and 1947 to parties from Detroit and Flint for $1,100 and $1,200 respectively. These buyers had worked in the auto plants during the war and were anxious to leave the cities. Each built cottages on the properties and regained the purchase price by selling frontage on the highway at as much as $1,500 for 500 feet. One party built four modern tourist cabins from timber cut from the property and has offered these for sale with five acres of land for $17,500 (see Fig. 18). Each of the owners has approximately 30 acres of land remaining on which he intends to build a home.

One doctor from Detroit purchased 300 acres of State land in 8 parcels, one in each of 8 townships. His objective is doubtless speculative in nature. Another speculator, a local township official, purchased 270 acres of State land near Wolverine and resold all of it to farmers and hunters.

Hunting use.--Almost 11 per cent of the lands surveyed, or 2,250 acres, are used for hunting. This use is



Fig. 18.--Modern three-room tourist cabins on Route No. 27 near Mullett Lake. The Michigan Tax Title Service Bureau bought the 40-acre parcel shown above from the State for $200 in 1942. It was sold for $1,200 to a retired Detroit machinist who constructed four cabins from timber cut on the property. The cabins and 10 acres of land were offered for $17,500 when a new section of U.S. No. 27 by-passed the property.

increasing in importance on an area basis as a primary use. Hunters often build a cabin on their property and use it as a base for their hunting activities (see Fig. 19). Some buyers of hunting land in the County live in the cities in the southern part of the State. A few business and professional men in the City of Cheboygan have also purchased land for hunting purposes. In general, hunting land is of rather low quality and supports fair to poor, immature timber or brush.



Fig. 19.--Hunting cabin on abandoned farmland (T. 36N., R. 3W., Sec. 18, Ne¼ of Ne¼). Property was purchased from the State by a local farmer for $120 and resold to a Detroit policeman at a profit.

A wealthy business executive purchased 120 acres from the State and an equal acreage from private owners which he intends to use as a hunting reserve. He has fenced and posted the area and plans to build a hunting lodge. The local people resented being excluded from land on which they had always been free to hunt; therefore, one local family purchased all the available State land in the vicinity, approximately 650 acres, to prevent further encroachment by outsiders on local hunting land (see Fig. 20). The family will manage the land for timber production in order to make the venture financially sound.



Fig. 20.--Abandoned farmland used for hunting (T. 35N., R. 3W., Sec. 30, $NW\frac{1}{4}$ of $SW\frac{1}{4}$). This property was purchased from the State by a local resident for hunting. His ulterior motive was to prevent a non-resident, who acquired a large hunting area nearby, from buying it and excluding local people.

Woodlot use.--Woodlots are forested lands from which the owner takes wood for his own use. Of the 1,937 acres in this use, over 750 acres, or 39 per cent, are pastured. Although the pasturing of woodlots is a poor practice from the standpoint of forestry, the demand for pasture in the County makes this combined use quite common (see Fig. 21). Over 900 acres, or 42 per cent, are used exclusively for farm woodlots from which are cut firewood, fence posts, and wood for other uses on the farm. Approximately 480 acres, or 23 per cent of the total area in woodlots, are classified as non-farm woodlots from which rural residents obtain fuelwood and occasionally a few logs for lumber.

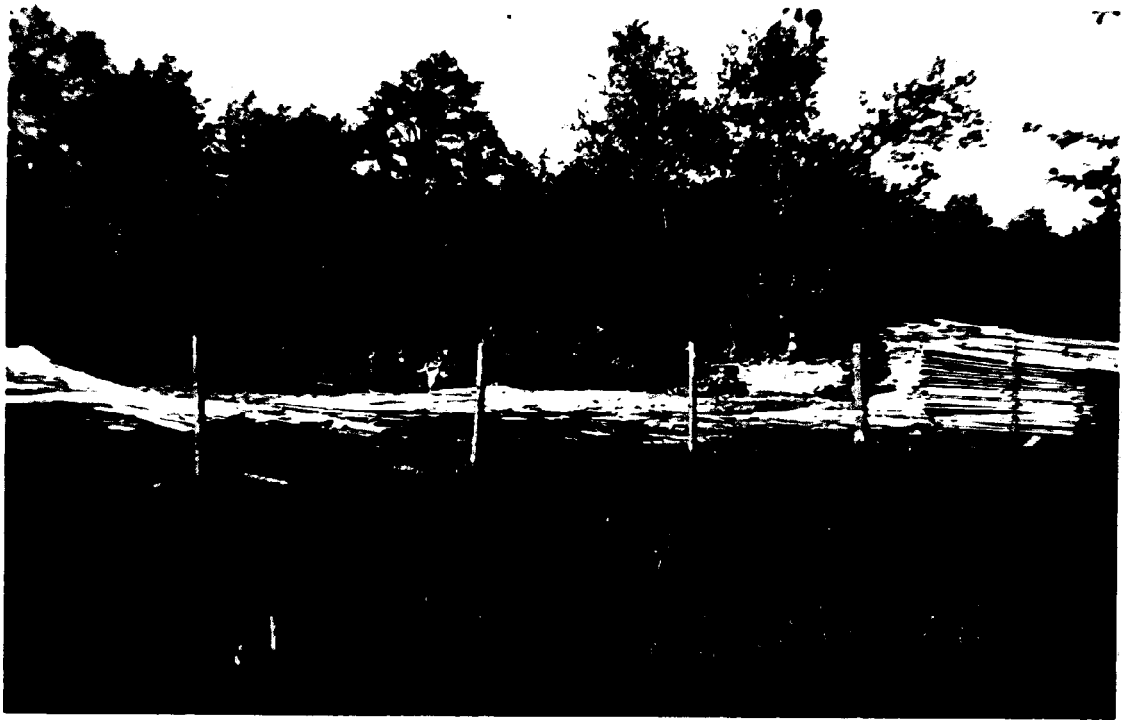


Fig. 21.--Grazed farm woodlot (cows left center) (T. 37N., R. 2W., Sec. 16, NW¼ of SE¼). Owner hired portable mill operator to cut lumber for a new barn.

Crop land.--Only 633 acres, or 4.0 per cent of the land studied, are used for growing crops. Since 3,921 acres of lands in Class I land types were sold to private owners, it is somewhat surprising that more area is not devoted to crop production. Some cropland has only recently been cleared of trees and brush. The principal crops include hay and small grain in the field-crop class and potatoes and other vegetables in the truck-garden class (see Fig. 22).

Rural residences.--The rural residence classification includes those properties on which the occupant lives all year and from which he does not make his living (see Fig. 23).



Fig. 22.--Land purchased from the State used for crops (T. 34N., R. 1E., Sec. 22, Ne¼ of Nw¼). Small field of corn in foreground, hayfield in background.



Fig. 23.--Rural residence built on land purchased from the State (T. 36N., R. 1W., Sec. 17, Ne¼ of Ne¼). Located on Michigan Route No. 33 east of Mullett Lake.

There are 425 acres in this use. Eleven rural homes have been built, usually close to small trading centers. Most rural residents earn a living in the locality. Several are retired people of modest means.

Orchards.--Late frosts have discouraged most fruit-growers in the County except along the lower Black River. There were 407 acres purchased for this use in the locality. One company is well established about four miles southeast of the City of Cheboygan on the Black River and appears to be successful in growing fruit (see Fig. 24). This concern, which is owned by Detroit people, has purchased 320 acres of State land since 1939 and has erected a fruit and juice-processing plant. Several species of fruit trees are being planted by the company at present. Its orchards are given some protection from late frosts by the moderating influence of the nearby Black River. The Cheboygan Apple Growers Association also purchased 80 acres in this area.

Summer residences.--Twelve summer residences have been built on land totaling 746 acres purchased from the State. These are usually located near lakes or streams, or near small trading centers. The State rarely has lakeshore property for sale in Cheboygan County. A few summer cottages have been built to take advantage of scenic views (see Fig. 25). Two buyers of State land have built summer cottages to be sold with a small plot of ground.



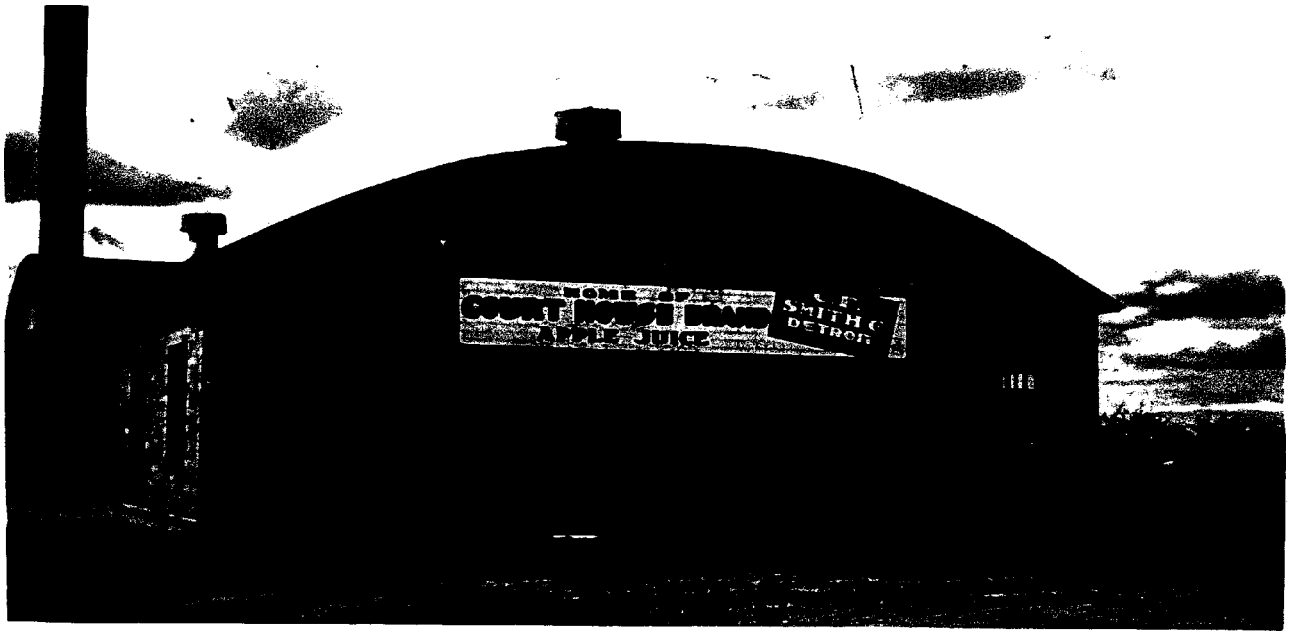


Fig. 24.--(Above) Young orchard on land purchased from the State (T. 37N., R. 1W., Sec. 10, Ne¼ of Sw¼). Abandoned farmland in right background also bought from the State.

(Below) Processing plant which produces apple juice for a Detroit grocery company. The company owns 600 acres, 360 of which were purchased from the State since 1941.

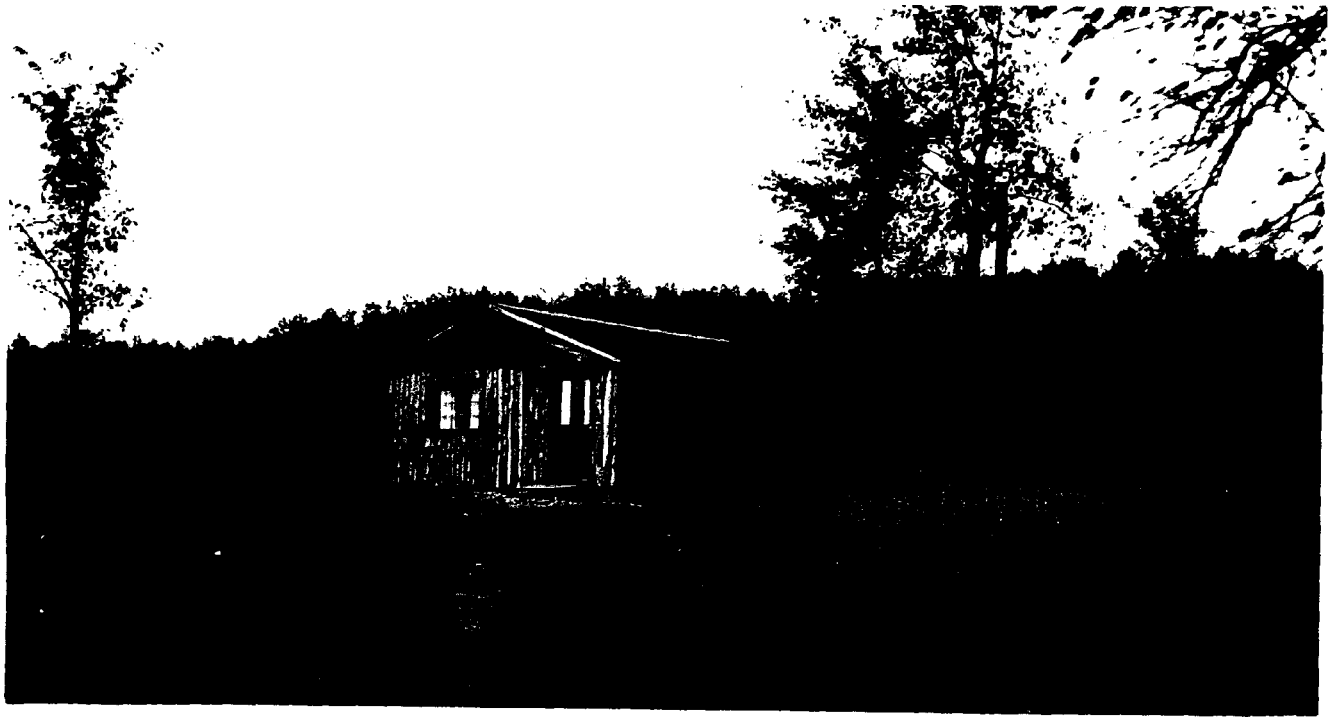


Fig. 25.--Summer cottage on former State land (T. 34N., R. 3W., Sec. 24, Se¼ of Se¼), overlooking the Sturgeon River valley. The 40-acre parcel was purchased for $80.

Unknown classification.--Use could not be determined for 1,950 acres. Lands were placed in this classification when their use could not be ascertained from observation or from interviewing local people. The owners or tenants could not be contacted for an interview. Many of these owners are non-residents of the County.

Correlation of Land Uses Designated on Applications and Actual Uses

When persons desiring to purchase State land make application for it, they must record the use they intend to make of the land. Of the 20,571 acres of land included in

this study, only 4,715 acres, or 22.9 per cent, are in ownerships for which the applicants' intended uses are known.[1] Of the latter acreage, 1,978 acres, or 42 per cent, are in present uses which conform with the intended uses filed by the applicant.

Forty-three parcels of the 51 which have conforming uses are held for pasturing livestock. Of the 70 properties with non-conforming uses, only 10 have more intensive uses, 37 less intensive uses, while 23 have intended and present uses of equal intensity.

This analysis provides some indication of the effectiveness of the policy of the Department of Conservation in attempting to guide the use of lands sold to private owners. Although the control is quite indirect, nevertheless it is worth while and should not be relaxed.

Area of State Land Added to Farms

A total of 7,827 acres of State land was purchased by farmers in Cheboygan County from 1936 to 1947 and added to 108 existing farm units. The largest acreage purchased by

---

[1] There are a number of reasons why more properties did not have intended uses recorded. First of all, the Department of Conservation, after a complete classification of State lands, put up for sale without application those lands deemed suitable for private ownership. There were no intended uses listed for these.

Another group of lands where the recorded intended use is not valid for comparison with present use is where another party than the applicant purchased the property. Also where the applicant purchased the land at the auction but sold it before the survey was made, the comparison of intended and actual uses is invalid.

one farm owner was 653 acres, the smallest area was 20 acres, and the average was 72.5 acres. The largest farm unit to acquire land comprised 2,780 acres and the smallest unit was one established on the 35 acres purchased from the State.

Table 64 presents a classification of the number of farms in each farm acreage class by percentage classes. Eight farms of 40 acres each were totally constituted of State land. The 160-acre class had 16 farms which added State land, the highest number of all classes. Generally, 73 farms comprising 200 acres or less, or 67.6 per cent of the farms concerned, purchased 3,593 acres or almost 46 per cent of the area sold by the State to farmers.

Land Use by Non-resident Owners

From Table 65 it is seen that one-third of the 6,433 acres owned by non-residents of Cheboygan County is held speculatively. However, approximately 1,500 acres of this are owned by one Detroit real estate agency, one Detroit physician, and a widow.

Speculation can be identified with various co-existent land-use objectives. Although its basic purpose is to realize a profit from the buying and selling of land, it is combined with several sub-dominant purposes in some instances, especially where the owner is an individual to whom land ownership is merely a side interest. For instance, one owner may hold a piece of rural property merely for the satisfaction of owning it; however, he would sell if he were offered an amount which would bring him a profit.

TABLE 64

NUMBER OF FARMS PER FARM ACREAGE CLASS ACCORDING TO THE PER CENT OF TOTAL FARM AREA PURCHASED FROM THE STATE OF MICHIGAN

Farm Acreage Classes (Acres)	Class Mode (Acres)	Percentage Classes										Total Number of Farms
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	
		Number of Farms										
30-49	40	...	...	...	...	...	...	...	...	1	9	10
50-69		...	...	...	...	...	...	...	...	...	1	1
70-89	80	...	...	...	...	2	8	...	...	...	5	15
90-109		...	...	...	...	1	...	...	...	...	...	1
110-129	120	...	1	...	9	...	...	3	1	...	...	14
130-149		...	...	1	1	...	...	...	...	...	...	2
150-169	160	...	...	6	...	1	9	...	...	...	1	17
170-189		...	...	...	1	...	...	...	...	...	...	1
190-229	200	...	2	7	2	...	...	...	1	...	...	12
230-269	240	1	3	...	3	1	...	...	...	...	...	8
270-309	280	...	4	1	...	2	...	...	...	...	...	7
310-499	320	1	1	3	...	2	...	...	...	...	1	8
500-999		1	1	2	2	...	...	...	1	...	...	7
1000-1499		...	1	1	...	...	...	...	...	...	...	2
1500 -		3	...	...	...	...	...	...	...	...	...	3
Totals		6	13	21	18	9	17	3	3	1	17	108

TABLE 65

OUT-OF-COUNTY OWNERSHIP CLASSIFIED ACCORDING TO LAND USE

Land Use	Acres	Per Cent of Total Out-of-County Ownership	Per Cent of All Lands Sold by the State
Speculation	2,140	33.3	65.2
Hunting	1,060	16.5	52.7
Timber	893	13.9	20.0
Summer Residence	585	9.1	65.0
Unknown	540	7.4	52.8
Pasture	405	6.3	7.8
Orchard	350	5.4	86.0
Woodlot	320	5.0	15.1
Rural Residence	80	1.2	22.8
Crop	60	0.9	7.3
Totals	6,433	100.0	31.2

The satisfaction of possessing rural land is sometimes stronger in city-dwellers because they are accustomed to paying several thousand dollars for a home-sized lot and find they can buy 40 acres of rural land for several hundred dollars. While holding the deed to the property, the owner may use it for hunting, sell timber from it, or

perhaps rent it for pasture. He might, as in several instances encountered in the field, build a summer cottage or rural residence on the land, perhaps cut some of the timber for use in building, and then sell all but five or ten acres on which the improvements are located.[1]

Contrary to what might be expected, almost as much State land was purchased by local residents of Cheboygan County as by non-residents for hunting as a basic use. Non-residents own 20 per cent of the lands used for growing timber. Sixty-five per cent of the area used for summer residences is owned by non-residents, while only 7.8 per cent of the pastured lands belong to this group. Other uses are so small in area that they are unimportant.

Taxation

Comparison with Past Values

Comparable tax and valuation figures were available for 8,378 acres for the years 1937 and 1945. In this period there was a 16 per cent drop in valuation and a 14 per cent decrease in taxes. This was made feasible by increased

---

[1] Numerous other combination uses involving various forms and degrees of speculation could be cited. This situation makes the classification of land use difficult and to some extent arbitrary. Decisions have to be made whether to classify according to the present short-term use or the ultimate long-term objective. In most instances the long-term plan of the owner was used as the basis for classification. However, it is acknowledged that the owner might have intentionally misrepresented his future plans where he thought they might not be acceptable to the interviewer.

grants-in-aid from the State and by higher collections. For 1937 the average valuation per acre for the 8,378 acres was $6.00, while for 1945 it was $5.20. The tax was 8.7 cents per acre in 1937 and 7.7 cents in 1945. This is a favorable trend for County taxpayers but unfavorable for those taxpayers who help support the County through State grants-in-aid.

Table 66 compares valuations and taxes per acre for the years 1937, 1945, and 1948 according to land use. It is apparent that valuations for lands in all uses decreased from 1937 to 1945 but rose again in 1948 to about the 1937 level. Taxes per acre, on the other hand, decreased substantially by 1945 and dropped again by 1949, indicating that the tax rate for 1949 was considerably lowered. The average rates were 14.6 mills in 1937, 14.9 in 1945, and 8.9 mills in 1948.

Orchards had the lowest tax for all three years, namely, about 4.4 cents per acre for each year. Croplands were taxed heaviest in 1937, rural residences in 1945, and summer residences in 1949. The tax on lands used for pasture dropped from 9.0 cents per acre in 1937 to 5.3 cents in 1949. There was a decrease in the tax on timber lands from 7.7 cents in 1937 to 4.7 cents in 1949. Certainly the taxes are not burdensome in these prosperous times and are not causing reversion to State ownership.

TABLE 66

COMPARATIVE VALUATIONS AND TAXES FOR 1937, 1945, AND 1948
ON LANDS SOLD TO PRIVATE OWNERS BY THE STATE OF MICHIGAN
FROM 1936 TO 1947 ACCORDING TO LAND USE*

Use	1937		1945		1948	
	Average Valuation per Acre	Average Tax per Acre	Average Valuation per Acre	Average Tax per Acre	Average Valuation per Acre	Average Tax per Acre
Pasture	$5.84	$ .090	$5.10	$ .073	$5.89	$ .053
Timber	5.24	.077	4.19	.064	5.14	.047
Speculation	5.34	.080	3.81	.060	5.80	.052
Woodlot	5.67	.085	4.54	.068	5.30	.048
Hunting	5.35	.073	4.46	.068	4.92	.044
Unknown	6.13	.083	5.08	.074	6.88	.062
Summer residence	5.18	.079	4.80	.075	11.60	.114
Crops	7.53	.114	5.40	.087	7.01	.063
Orchard	4.22	.045	2.94	.044	4.90	.044
Rural residence	6.80	.096	7.25	.103	12.55	.113
Grand average	$5.76	$ .084	$4.63	$ .069	$5.82	$ .052

*Figures for 1937 and 1945 are not based on 20,571 acres since some lands were in public ownership during these years. Averages for 1937 are based on a total area of 13,423 acres and for 1945 on 13,621 acres.

In 1945 almost 30 per cent, or 4,061 acres, of the 13,807 acres assessed in that year had taxes delinquent for at least one year.[1] These taxes made up 38 per cent of the total assessed taxes on the 13,807 acres. More than 6,000 acres of the 20,571 acres studied carried 1948 taxes delinquent for one year. This perhaps is a result of procrastination or inefficient collection rather than inability to pay, since such delinquency is much more widespread in some townships than in others. Since there is little activity in buying tax-sale certificates and hardly any reversion, delinquency is not too important.

Unassessed Lands

Of the 20,571 acres returned to private ownership, 550 acres, or 2.7 per cent, were not recorded on the County tax records for taxing purposes in 1948, almost two years after the last transfer of title to the lands considered. One parcel not taxed had been purchased in 1939. This neglect deprives the County of needed tax money and can be attributed to laxity on the part of certain township assessors.

Area Purchased from the State, 1947-1952

Subsequent to 1946, the last year of purchase of the 20,571 acres intensively studied in Cheboygan County, there has been a total of 2,760 acres bought by private owners from the State at an average price of $4.92 per acre (see Table 67).

---

[1] In 1945 approximately two-thirds of the lands studied were in private ownership.

TABLE 67

ACREAGE TRANSFERRED TO OTHER OWNERSHIP IN CHEBOYGAN COUNTY BY THE STATE OF MICHIGAN 1947-1952

Biennia	Acres Sold	Price Per Acre	Acres Disposed of by Exchange*
1947-1948	1,791	$4.85	385
1949-1950	783	4.30	31
1951-1952	186	7.74	448
Totals	2,760	$4.92	864

*Acres exchanged with the federal government and individuals.

Since only 120 acres of tax-reverted lands were deeded to the State during this period, there is indication that the State is still classifying and selling lands to private ownership in order to resolve the balance of ownership according to the present land policy.

Private owners have applied to the Department of Conservation to get most of these lands put on auction. However, the Department agrees to sell only if the land is not desirable for public use and is needed by the applicant for a justifiable use.

In the previous six years 18,507 acres were disposed of by sale to private owners. Therefore a diminution of

sales to 2,760 acres in the last six years points out a substantially decreased supply of lands available for sale. Certainly with the present sustained prosperity the demand for land has not decreased.

Use Areas Classified by Land Types

The most discerning insight into the character of the lands sold to private owners may be had by classifying them by use and land types. Table 68 presents this tabulation. Land type Class I embraces loams and the better sandy loams primarily; Class II generally includes sandy loams and some loamy sands; and Classes III and IV are comprised largely of sands, peats, and mucks.

More lands sold back to private owners are devoted to pasture than to any other use. Of the 5,296 acres in this use, 79 per cent are in land type Classes I and II which include nearly all the agricultural soils of the County. These soils generally are capable of supporting at least moderate pasture use.

Forty-five per cent of the lands held for timber are found in Classes I and II. Almost 42 per cent are in Class III, which is primarily suited only for forestry and recreation. Farm woodlots are on somewhat better soils. More than 56 per cent are on Class I and II land types. Although the poorest land types should be devoted to growing trees, good forest growth takes place on the better soils.

TABLE 68

USL AREAS CLASSIFIED BY LAND TYPES*

Land Types	Pasture	Timber	Specula-tion	Hunting	Unknown	Wood Lot	Summer Residence	Farm Crops	Rural Residence	Orchard
Class I										
Ri	648	43	0	0	218	147	0	42	20	0
Af	1,422	444	0	87	171	112	102	96	0	0
Du	60	96	59	0	0	42	14	6	0	0
Sub-total	2,130	583	59	87	389	301	116	144	20	0
%	40.3	15.2	1.9	3.9	20.0	15.6	15.6	22.8	4.7	0
Class II										
Co	100	61	2	0	32	27	0	20	8	0
Oh	769	91	265	482	337	110	68	81	5	0
Ma	286	214	0	40	112	118	0	45	5	0
Sw	0	0	0	0	0	0	0	0	0	0
Al	264	284	302	0	178	140	67	13	50	0
Or	321	252	961	276	113	225	36	55	92	71
Gr	313	240	157	90	104	172	0	65	0	13
Sub-total	2,053	1,142	1,687	888	876	792	171	279	160	84
%	38.8	29.9	54.5	39.5	44.9	40.9	22.9	44.0	37.6	20.6

*See Table 83 for composition of land types by soil types.

TABLE 66--Continued

Land Types	Pasture	Timber	Specula-tion	Hunting	Unknown	Wood Lot	Summer Residence	Farm Crops	Rural Residence	Orchard
Class III										
Ls	0	0	46	0	0	0	24	0	2	0
La	158	284	135	317	59	118	8	7	0	59
Ms	490	923	66	118	167	296	5	54	16	5
Br	49	27	0	28	13	6	21	0	0	0
Ir	0	0	0	0	0	10	20	0	0	0
Wi	387	370	243	478	241	136	254	149	89	23
Sub-total	1,084	1,604	490	941	480	566	332	210	107	87
%	20.5	41.9	15.8	41.8	24.6	29.2	44.5	33.2	25.2	21.4
Class IV										
Ss	0	0	0	0	0	0	0	0	40	0
Os	0	188	288	28	40	60	57	0	98	0
Do	0	0	0	49	0	36	0	0	0	0
Di	0	28	14	0	5	34	31	0	0	0
Kb	29	285	560	257	160	148	39	0	0	236
Sub-total	29	500	862	334	205	278	127	0	138	236
%	0.5	13.0	27.8	14.8	10.5	14.3	17.0	0	32.5	58.0
Total	5,296	3,829	3,098	2,250	1,950	1,937	746	633	425	407

Lands held for speculation have the lowest percentage in Class I of all uses. Fifty-four per cent are found in Class II, however. Lands used for hunting have 57 per cent of their total area in land type Classes III and IV, while almost 40 per cent are in Class II.

Sixty-six per cent of the 633 acres devoted to farm crops are in Classes I and II, while 33 per cent are in Class III. Although Class III land types do not generally embrace soils of agricultural quality, there are small areas of sandy loam in several types. For instance, Mud Lake Swamp land type, in which there are 54 acres devoted to growing crops, is 6 per cent Munuscong sandy loam and 6 per cent Granby loamy sand. In Wildwood type, where 149 acres are used for growing crops, 21 per cent are comprised of Emmet sandy loam, a soil with fair fertility for agriculture. If climatically adapted crops are grown on these relatively small areas with moderate fertility, they have a chance to mature satisfactorily. This same weakness of the land type classification holds conversely for Classes I and II, in which there are small, localized areas of non-productive soils.

The Success of the Land Disposal Policy of the Michigan Department of Conservation[1]

The success of the land disposal policy can be gauged on the bases of the number of successful applicants, the

[1]This discussion presupposes an effective and well-balanced policy of the Department of Conservation evolved through years of experience. This section merely interprets the results of this policy that were evident in Cheboygan County.

appropriateness of use in private ownership, that is whether the use is suited to the land capability, and most importantly, whether the land is likely to be retained permanently and well managed in private ownership. The first two bases are merely stages or steps which help to indicate the probability that land can be permanently kept in private ownership, or they may be looked upon as successful or unsuccessful attainments toward the accomplishment of the ultimate objective--continuous and profitable private ownership.

First, the Department of Conservation is interested in whether the applicant(s) whose intended use(s) was approved by the Department was high bidder at the auction. There is no legal means at present of coercing the applicant-buyer, or the buyer, to use the land in an approved, conservative manner. In our democratic system we would rather see conservation practices adopted at the option of the land operator.

The fact that the first owner who bought from the State institutes an approved use is no guarantee that he will continue that use or not adopt a more conservative use. Neither is it a guarantee that a subsequent owner will not use the land carelessly. It is also possible that a second owner will institute an appropriate use. Since 23 per cent of the lands sold back to private owners have been resold at least once, there is opportunity for subsequent owners to use the land harshly or conservatively according to their discretion.

Even though the operator initiates an approved use, he may overtax the ability of the land to produce, whether it be used for growing crops, timber, or grass. Unwise use would ultimately degrade the soil to a point where it could no longer produce a satisfactory income after taxes, especially during a period of economic recession. If the land ultimately reverts to State ownership, then the objective of the Department of Conservation has not been completely attained.

The best estimate of the total area of lands likely to remain in private ownership may be obtained by considering the present uses according to the land types supporting them. Table 68 presents a classification with this arrangement.

The possibility of a severe economic depression and its effects will not be considered in this estimate because government can now take steps to prevent serious recession. However, it would be very impractical to disregard economic conditions because their effect on land use is direct. Prosperity is presently at an abnormally high level, but a moderate recession to a peace-time "normalcy," or to a low period of the economic cycle, can be expected in the future. There has been no reversion in Cheboygan County since World War II, but a period of lesser prosperity doubtless would bring about some tax delinquency. The following estimate considers this possibility.[1]

---

[1] Other factors make this estimate quite arbitrary. For instance, a 40-acre parcel may have half its area in good soil and half in poor soil for a given agricultural use. In classifying the land by land types, the "forty" might be

In arriving at an area figure for all lands likely to remain in private ownership in the uses classified, a process of elimination is employed, whereby lands not qualified for a given use because of poor soils are subtracted from the total.

Lands used for pasture in Classes III and IV (1,113 acres) are generally too infertile to support farm grazing and will be deducted. The sandy soils in these land types generally do not have sufficient moisture or fertility for continuous use throughout the summer. Many will not support a grass cover. The organic soils are somewhat more useful for pasture but are subject to flooding and most support tree growth or open bog plants.

For timber intent, Class III and IV lands are variably suited for satisfactory forest growth. Lupton muck, Rifle peat, and Edwards muck will support tree growth, but other mucks and peats will not. The dry sands of the uplands and plains have numerous openings without forest cover. Forest holdings in private ownership are small in size and

---

subdivided by a type line. For classification purposes it is not treated as a unit, while in practical use it doubtless will retain its unity. It is possible that the productivity of the better half will make the unit desirable enough to the owner to be permanently retained in private ownership. Likewise an entire parcel of poor land might be part of a large productive farm. In this instance the owner might hold the parcel indefinitely because it serves some accessory use, such as hunting, although it was classified according to its primary use perhaps as pasture or woodlot. Therefore the estimate of the total area of lands likely to remain in private ownership tends to be necessarily somewhat theoretical rather than entirely realistic, although the most logical approach had been made.

few owners practice good forest management. Most timber properties are held for one cut of timber. This combination of factors tends to make ownerships in this use tenuous after cutting. However, with the present high plane of prosperity, cut-over lands are doubtless sold for other uses, such as hunting.

Although speculation per se is not an acceptable intent, it serves indirectly to get lands into non-resident ownership for hunting and summer residence uses. Since about two-thirds of the lands which reverted in 1939 were classed as speculative, lands in this use at present must be in unstable ownership in part. Therefore, the 1,352 acres in Classes III and IV will be subtracted as poor risks.

Hunting does not depend on soil quality to an appreciable extent. All lands in this use are considered safe in private ownership. Those descriptions for which the use is unknown are treated in the same manner as those held for speculation. It is surmised that many of these are held in speculation. The areas in farm crops in Classes III and IV are deducted because of probable marginal fertility, but all lands used for summer and rural residences and orchards are given full areal credit.

In summary, this estimate totals 3,260 acres which are in uses on land types considered marginal under present economic conditions and perhaps submarginal in the event of moderate recession. It is very possible that continued

demand for recreation in the County will absorb some of the poorer lands and preclude the process of reversion to State ownership. In the present period there will be exchanges and sales among private owners in greater volume than with the State. However, if reversion does take place, doubtless some of the infertile parcels involved will be blocked into project areas and dedicated to public use.

Eighty-four per cent of the 20,571 acres sold to private owners, or 17,311 acres, are qualified to remain continuously in private use, barring too intensive use, a change to an inappropriate use with respect to soil capability, or a severe depression. This is a conservative estimate in the present high-level prosperity because there has been no reversion essentially since 1946. It is safe to predict that in the foreseeable future there will not be another period of large-scale reversion such as took place in 1939.

SUMMARY AND CONCLUSIONS

1. Cheboygan County lies in the glaciated, cut-over region of Northern Michigan which has been a problem area during the past 30 years because of low forest volumes, generally infertile soils and a short growing season for agriculture, and relatively long distance to markets. The land forms of the County include moraines, outwash plains, and till plains. The northern part is a lowland made up of old lake plains while the southern two-thirds is rolling to hilly. The three large inland lakes, many miles of trout streams, and the Straits of Mackinac on the north give the County valuable water resources for recreation. The cool climate in summer and the "north country" environment are favorable for the tourist trade.

2. The majority of the soil types of the County are infertile for an intensive type of agriculture. Only 7.4 per cent of the soils by area are classified as suitable for cultivation. Another 31.9 per cent are less well suited to farming because of variable inherent fertility, poor drainage, unsuitable relief, or excessive stoniness. Approximately two-thirds of these soils are used for agriculture, primarily pasture, and the remainder for growing trees. The other 60.7 per cent of the land area is capable of supporting tree growth only, although much of it is not commercial forest land.

3. Approximately 70 per cent of the County is forested with second-growth stands. The aspen type comprises 45 per cent by area, mixed hardwoods 30 per cent, swamp conifers 15 per cent, and jack, red, and white pine types 10 per cent. In 1938, 43 per cent of the stands were well stocked, 29 per cent had medium stocking, and 28 per cent were poorly stocked. All stands are relatively young and volumes per acre are low.

4. The whitetail deer is the most important game animal to the County economically. It draws numerous downstate hunters to the area in November when local trade is declining. Sport fishing ranks first in summer recreation as a tourist attraction. The County has no economically important minerals. Geological structure precludes the possibility of oil deposits.

5. The first settlers who came to the County in 1844 were lumbermen. These were followed shortly by farmers. When the County was organized politically in 1855, there was a population of about 300. The number increased rapidly during the white pine lumbering era, but the peak was not reached until 1910 (considering the census years), 14 years after the high mark of white pine lumber production. Following the removal of the white pine timber and the closing of the large mills around 1900, the lumbering of the hardwoods and agriculture helped sustain the population. This was the period of the greatest number of farms in the County. After 1920

most of the valuable hardwoods had been logged and agriculture was in a state of depression. Some families who had settled on poor soils moved to urban areas. The population then declined to a low mark of 11,502 in 1930. Before 1940, however, an increase took place because of the movement of persons back to farms during the general economic depression of the 1930's. Since that time the number of residents has been more stable than at any other period. From 1947 to 1950 there was a net increase of 124, or a gain of one per cent.

In Cheboygan County the age groups between 20 and 50 years, the most productive age groups, have low percentages of the total population when compared with the younger and older groups. When age groups of Cheboygan County are compared with those of Wayne County on a percentage basis for 1950, it is found that the urban County has relatively high percentages in the productive age groups. The reason is that many persons in the 20-50 age groups in northern counties migrate to the cities to work. This leaves high percentages of children and old folks in the County who contribute to the high social-aid costs.

The northern half of the County has approximately 70 per cent of the total population. The City of Cheboygan, the only urban area, is in the northern part and has about 41 per cent of all residents. Also, the more fertile soils in the northern portion have attracted a greater number of farmers.

The populations of the townships in Cheboygan County in census years have followed the trend of the County generally. However, when four rural townships are classified according to the most extensive type of land use in each, it is found that the one with the best agricultural soils has the largest population and gained slightly from 1940 to 1950. The township primarily dedicated to growing forests lost population, and the one where recreation is dominant gained substantially. These facts emphasize the increasing importance of recreation in the County.

The excess of births over deaths will not increase the population because the productive age groups will migrate to urban areas. As the timber on State forests reaches merchantable size in greater volume, rural job opportunities will increase, at least for seasonal and part-time work. This would not increase the population but would help to stabilize it.

No major change in population is foreseen in the County. The rural-farm segment will remain static or rise slightly in the event of economic recession. The rural-nonfarm group may continue to show an increase. The urban population will not decline but will probably rise slowly with increased tourist traffic and the construction boom which will come with the building of the Straits of Mackinac bridge.

6. The economy before 1900 developed around the white pine lumbering industry. In the peak year of production,

1896, 16 mills sawed roughly 200 million board feet of lumber. About one-fifth of this volume came from logs rafted from Canada and part from logs from the Upper Peninsula. Ninety per cent of all manufactured products were made from wood, and the residents of the City of Cheboygan either helped manufacture lumber or provided services to those who did.

The lumber industry declined sharply after 1896 with the removal of the white pine timber. It was replaced in the economy to some extent by the lumbering of hardwoods and by agriculture. However, by the 1930's large acreages of tax-reverted lands and high unemployment were mute testimony to the fact that nothing had been found to supplant wholly and permanently the white pine lumber industry.

Manufacturing operations in Cheboygan County since World War II include small metal-fabricating plants, a paper mill, sawmills, secondary wood-using industries, and a garment factory. The metal-fabricating plants produce tools and parts for the automotive and other industries in southeastern Michigan. The largest wood-using plant in the County is the paper mill, which employs about 175 persons in times of full production. It has changed ownership several times in the past decade with consequent periods of shut-down. There were seven small secondary wood-using plants in the County in 1935 and 1949. They employed in 1949 an average total of about 60 persons and produced rustic furniture, novelties, wood turnings, fishnet floats, greenhouse flats, and fish boxes. The

greater stability in the number of small wood-using industries compared to the metal-fabricating plants is due primarily to the fact that they are near the source of raw material and in a market area providing a sustained demand.

Cheboygan County has a relatively small force of skilled and semi-skilled labor which prefers to live and work for a relatively low wage there rather than in large industrial cities. Free rent and bonuses have been offered to attract manufacturers. These conditions make the County an advantageous location for small fabricating firms. The primary disadvantages include the long distances to bring in raw materials and to ship products to market. The lack of natural gas for heating and processing deters some industries from moving into the County.

Since 1949, when unemployment in Cheboygan County was critical, concerted local action has tried to induce new firms to locate there and to get higher production in the operating plants. This effort resulted in getting two new firms into production which employed 140 persons. However, one of these is moving out already to be nearer its market, although a new firm is taking its place. This is an example of the turnover of industrial firms in the County.

Manufacturing employs at present about 120 part-time farm operators who live within a radius of approximately 25 miles of the City of Cheboygan. When these men are unemployed, they turn their full attention to farm work. They

may cut pulpwood in the winter and put in more crops in the summer. Therefore, manufacturing in the County has an indirect effect on land use.

7. Transportation facilities in the County include two federal highways and one State highway. U.S. Route No. 27 carries the heaviest traffic load and connects Cheboygan County toward the south with Lansing and other large urban areas. Two truck freight lines serve the County, one from Grand Rapids and one from Detroit. There are two railroads, the Detroit and Mackinaw and the Michigan Central. They transport freight primarily.

8. Cheboygan County imports largely consumers' goods which in 1940 comprised about 75 per cent of all outpayments. It exports metal products, sour cream, garments, paper, wood turnings, and novelties. These had a value of about $10,000,000 in 1949. Most of the markets are in Michigan, although paper has supplied both national and Canadian markets.

9. There was a general increase in the number of all types of retail stores in Cheboygan County between 1939 and 1948, with the exception of gasoline stations. Food stores and eating and drinking establishments had the greatest increase. This can be attributed to the larger volume of tourist trade in post-war years. The number of wholesale firms increased from 17 in 1939 to 19 in 1948, and volume of sales was larger by 50 per cent on a comparable basis. Volume of retail sales more than tripled in the same period.

The average annual retail sales in the County from 1947 to 1950 were about $11,000,000. It is carefully estimated that at least $1,500,000 of this was spent by tourists. For the months of July and August retail sales are approximately triple what they are in February.

10. Commercial fishing has declined to insignificance because of the inroads made on the fisheries resource by the lamprey. The U.S. Census listed only 28 persons employed in "commercial fishing and forestry" in 1950. This number should increase slowly in the next decade as commercial fish populations increase under management after control of the lamprey.

11. Of the total labor force of 4,430 in 1951, roughly 33 per cent were employed in agriculture, 37 per cent in trades and services, 10 per cent in manufacturing, 14 per cent were self-employed, and 6 per cent were unemployed. Of these categories, trades and services have the greatest seasonal fluctuation in employment, varying from about 30 per cent of the total labor force in January to 45 per cent in July.

The most severe period of unemployment in the County occurred during the economic depression of the 1930's, when 67 per cent of the population were wholly or partially dependent on some form of public relief. By 1940, almost 24 per cent of the labor force were still unemployed. War production brought eight small firms to the County to produce metal products, and unemployment decreased to 12 per cent. During

the mild recession of 1949, however, the figure rose to 24 per cent and then declined to 6 per cent in 1951 when local effort attracted new firms. The closing of the paper plant in 1952 increased unemployment again. There is some optimism that this plant will reopen under new ownership.

12. Downstate urban areas influence Cheboygan County primarily through the use of the County's recreational resources. Many summer homes around Burt and Mullett Lakes are owned largely by residents of metropolitan areas of southern Michigan. An estimated 15,000 non-residents of the County go there to fish, and about 4,000 down-state deer hunters set up camps there in November. Another 60,000 deer hunters pass through the County and buy gas and meals there. An estimated 257,000 tourist cars pass through Cheboygan County during the tourist season. About 27 per cent of the tourist cars are out-of-state autos, and of these, more than 50 per cent are registered in Ohio. Approximately 40 per cent of Michigan cars bear Wayne County licenses.

13. The local government of Cheboygan County has four levels, which in 1950 had 59 units. There was one unit for approximately 230 persons in the County, whereas the average for the State was one unit for every 600 individuals. The small rural-school districts have been the inefficient units primarily responsible for this unbalance. They are being consolidated more rapidly in recent years. Some township units have also been consolidated where the populations were extremely low.

The County equalized valuation has more than doubled since 1948, while the tax rate has decreased by 2.5 mills to about 6 mills. Collections have averaged about 80 per cent or better since 1947.

The total cost of government in Cheboygan County decreased from $545,900 in 1938 to $357,000 in 1951. Education has the largest per capita cost in the County. In 1951 it amounted to 56 per cent of total costs. However, the $33.65 per capita spent for education was next to the lowest amount among seven selected counties in Michigan.

State aid has increased markedly through the years from 19 per cent of the total cost of County government in 1924 to a high point of almost 64 per cent in 1948. By 1951, however, it had declined on a percentage basis to about 54 per cent. This means that other counties in Michigan, primarily the industrial areas, are at present bearing more than half the cost of local government in Cheboygan County.

Tax delinquency has been a problem in the County from the time the white pine timber was removed until the post-war years. Lands which reverted to the State in the early days were sold to farmers or anyone who would buy them. The Tax Homestead Law helped get large acreages back into private ownership. Delinquency and subsequent reversion were most critical during the economic recession of the 1930's when the State instituted tax moratoria. Delinquencies which accumulated from 1933 to 1938 resulted in the reversion of more than

75,000 acres to State control. With the increased prosperity of war-time, delinquency and reversion tapered off until from 1946 to the present there has been practically none.

14. Agriculture was the largest industry in the County after the white pine lumber industry moved out. An all-time high population was thrown upon the land which lost its virgin fertility rapidly because of attempts to cultivate light soils. In addition, the fires that fed upon the slashings further deteriorated the soils. Volumes per acre of grains, potatoes, and hay declined after 1900. Although they have increased in the past 15 years with the use of fertilizers, they have not surpassed the production per acre on new ground broken before 1900.

The area devoted to agriculture in Cheboygan County increased steadily until 1950, with the exception of a retraction around 1930 when the number of farms and acreage declined because of the agricultural depression of the 1920's. There was a movement back to the land during the general depression of the 1930's so that by 1935 Cheboygan County had its second highest number of farms (1,234) after the high mark in 1910 of 1,499. The number decreased to 855 in 1950. This decline was due in part to a new census definition but also to an actual decrease. Total acreage in farms was highest in 1945, when 30 per cent of the County was dedicated to farming. In 1950 the percentage was 27. The average size of farms has increased consistently since

1935 to a high mark of 146.6 acres in 1950. This trend toward more economic units is favorable and will continue unless there is a movement back to the land in the event of a depression.

From 1945 to 1950, total area in farms decreased 10 per cent to 125,330 acres. In the same period the average acreage in cropland per farm increased from 40.8 acres to 46.0 acres; pasture area changed from 59.9 acres to 67.7 acres; and average area of farm woodlots not pastured increased from 18.9 acres to 26.5 acres.

Almost 40,000 acres, or 31 per cent of all farmland, were classified by the U.S. Census as cropland in 1950. Forty-six per cent of the farmland area is in some form of pasture including 17,300 acres of plowable pasture (or improved pasture), 36,700 acres of wooded pasture, and 3,830 acres of other pasture. Woodland not pastured is 38 per cent of all farm woodland.

Most farmers in the County own their land. Tenancy was highest in 1935 when 10.6 per cent of farm operators were tenants. By 1945 the figure had declined to 2.8 per cent and in 1950 it was 2.6 per cent.

On Onaway loam, one of the most productive soil types in the northern part of the Lower Peninsula, a minimum of about 95 acres of land is needed on the average for a successful farm unit. On Emmet sandy loam, the most extensive soil type in the County and less suitable for agriculture,

150 acres are required on the average to produce a satisfactory living for a medium-sized farm family.

Marketing is a foremost problem of agriculture in the County. There are no cooperatives for marketing farm products, with the exception of the Cheboygan Milk Producers' Association which was accepted for membership in 1948 in the Michigan Milk Producers' Association, a cooperative marketing agency. However, there are only a few farmers who have adequate sanitation facilities for processing whole milk and are eligible to belong to this Association.

Oats, corn, rye, wheat, and barley are the important grains produced according to acreage. More cropland is devoted to hay than to all other crops. Potatoes were a productive crop in 1949 when 1,100 acres produced about 172,000 bushels.

Farms in 1949 produced 336 thousand board feet of sawlogs and veneer logs compared with 67 thousand feet in 1929. About 630 cords of pulpwood were cut in 1949 compared with 239 in 1929. There was greater production of wood during World War II on farm woodlots than at present. The estimated value of forest products produced on farms in 1949 was $27,951.

Dairy products from farms accounted for $424,385, or 36 per cent of the total value of all farm products in 1949. Milk production declined almost 7 per cent between 1945 and 1950. In the same period the volume of whole milk sold more

doubled while the volume of butterfat sold decreased by more than 40 per cent. Livestock and other livestock products were second in importance to dairy products and made up 30 per cent of the total value. Crops accounted for 27 per cent and forest products made up 2 per cent of the total value of all products sold from farms.

The Detroit milk shed has recently expanded northward to Cheboygan County to a limited extent. The regular milk check is the most dependable and largest source of income for many farmers in the County. In order to sell whole milk for the Detroit bottle trade, farmers will have to comply with sanitation regulations prescribed by the Detroit Board of Health. This will limit the production of whole milk in the County because installation of necessary equipment is costly. It is doubtful that this development will bring about a demand for more pasture at the expense of farm woodlands or croplands. Some farmers, however, will change to selling milk in whole form rather than separating and selling cream as most do at present.

The Soil Conservation District was organized in Cheboygan County in 1948. By February, 1953, 170 farm plans had been developed and initiated and another 30 farmers had made application for guidance. The combined number is 29 per cent of the farmers owning 50 acres or more in the County.

There was a 32 per cent decrease in the number of milk cows and a 15 per cent decline in other cattle from

1945 to 1950. With the sharp increase in tractors, the number of horses in the County declined from 1,596 in 1945 to 863 in 1950. The number of hogs remained the same, while sheep decreased by more than 50 per cent to about 500 head. The general decline in numbers of farm stock correlates directly with decrease in number of farms and the 13 per cent decline in pasture acreage from 1945 to 1950.

15. About 72 per cent of Cheboygan County is forested. Fifty-three per cent of the forested lands are in State forests; 18 per cent are in farm woodlots; 16 per cent are in other private timber holdings; and 13 per cent are in recreational use. In 1938, 74 per cent of the 30,000 acres held privately for timber use were in Schoenmann's land type classes III and IV, which are largely infertile for agriculture. Of the 175,000 acres of lands in State forests, approximately 74 per cent lie in Classes III and IV. These low-quality lands are generally very sandy or swampy.

There are no national forests or County forests in Cheboygan County. Most of the planting of trees has been done on State forest lands. A few private owners have made small plantings. The Soil Conservation Service has encouraged tree planting on a small scale on about 40 farms, primarily for Christmas tree production. Some planting has been done on each of four 80-acre high school forests. Approximately 1,200 acres of the 8,850-acre University of Michigan Biological Station Tract have been planted. About

70,000 acres of poorly stocked lands in the County should be planted and many more might well be planted to more desirable species.

The acreage of private timber lands listed under the Commercial Forest Reserve Act has decreased from a high mark of 2,360 acres in 1938 to 960 acres in 1950. Timber lands generally have not been more heavily taxed than other lands. Since the advent of the 15-mill amendment, there has been a gradual decrease in taxes on lands in all types of use except recreation.

The Department of Conservation through its Field Administration Division protects 402,944 acres, or 86.5 per cent of Cheboygan County, from forest fires. This is all the area presently in need of protection. In the period 1949-1951, 65 fires burned 264 acres. Twenty-eight fires were caused by smokers and 26 were started by brush-burning. Records indicate that the average number of fires per year has decreased from 71 in the period 1925 to 1929, to 22 from 1949 to 1952. In the same periods the average area burned per fire declined from 172 acres to 4 acres.

16. The first tourists to visit Cheboygan County probably came from Mackinac Island as early as 1870 to enjoy boating, bathing, and fishing on Mullett and Burt Lakes. By 1880 a summer colony had developed at Topinabee on the west shore of Mullett Lake. Summer homes began to appear by 1910 on Burt and Mullett Lakes near the Michigan Central Railroad

which runs between the two lakes. A few hunting and fishing clubs could be found in the County by 1920. Recreation developed slowly, however, until good roads and high speed autos made the County more readily accessible to tourists. The shorter work week and paid vacations for laborers have increased the number of tourists coming to Cheboygan County. During the summer months fishing and bathing attract more people than other pastimes, although motoring, boating, and camping are high on the list of preferences. Hunting is the most important sport in the fall and winter months.

In 1938 lands devoted primarily to recreation included 8,465 acres in hunting and fishing use, 18,380 acres held for summer residences, and 2,206 acres in public parks and golf clubs, a total of 29,051 acres. By 1950 an estimated 67,000 acres were in recreational use, the largest percentage of these being used for hunting. More than 21,000 acres were fenced for hunting in 1948. The land area used for recreation is destined to increase slowly, and the income from tourist trade in the County will continue to rise slightly as long as the present period of prosperity continues.

More than 10,000 fishing licenses have been sold in the County each year since 1947. About half of these are sold to non-residents of the State. When the number of down-state residents who go to the County to fish is considered, the total number of fishermen becomes at least 15,000. More than 7,000 persons hunt deer in the County, approximately

3,000 of whom are residents of the County. The deer kill has been about 1,790 animals, giving 25 per cent hunter success. This is equal to hunter success in the northern part of the Lower Peninsula but is 15 per cent lower than that in the Upper Peninsula. The deer herd has not suffered from this hunting pressure.

In 1938 there were 292 cabin rental units in Cheboygan County. By 1948 the number of cabin courts was 77 with 639 units. By 1950 only two more courts had been built, indicating a rather stable demand. Receipts for cabin courts in the County in 1948 were $250,000, while hotels, with 404 rental units, received $511,000.

17. Cheboygan County ranks eighth among the counties in Michigan according to area of State-owned land and fifth according to percentage of State-owned land within county boundaries. In 1952, Cheboygan County had 176,694 acres of State land, which was 38.5 per cent of the total County area. Approximately 71 per cent of this area was acquired through tax delinquency and reversion and the remainder by purchase, gift, and exchange. Ninety-nine per cent is included in State forests and is dedicated to the production of timber and wildlife. Other State lands include water frontage holdings for general recreation, lands in parks and public fishing sites, and undedicated lands.

The objectives of management of State forests are to obtain the best growth of timber stands, to provide a

suitable background for recreation, and to help stabilize local economies through hiring local labor and by selling stumpage. Merchantable timber is sold to commercial operators who must follow cutting regulations enforced by district foresters. Cutting in game areas is coordinated with Game Division recommendations for maintaining adequate game habitat. Planting of forest lands is one of the major activities of the Division of Forestry. More than 23,000 acres have been planted on State forest lands in the County since 1927. Mixtures of Norway pine, jack pine, and white pine are planted predominantly.

Burt Lake State Park is the largest of three parks in Cheboygan County. It served about 75,000 persons in 1951. Aloha Park served more than half this number, but is on a less-traveled route. Two types of water frontage owned by the State in Cheboygan County are public fishing sites and public beaches for general recreational use. There are 12 public fishing sites in the County and there is need for more on the large lakes. In 1951 there were about 400 acres of undedicated lands lying outside State project areas held for sale or exchange with individuals or for exchange with the federal government.

The policy of the Department of Conservation is to retain in public ownership only those lands for which there appears to be no economic private use and those which appear to be needed by the general public for hunting, fishing, and

other recreational use. Those lands retained by the State are generally poorer in quality than those in private ownership. Using Schoenmann's land type classes to indicate land quality, it is found that 1.9 per cent of the State ownership is in Class I and 24 per cent in Class II, the two better of the four classes of land types according to fertility. The balance, 74 per cent, is in land type Classes III and IV, which are infertile for agriculture.

The general trend of total area in State ownership in the County has been one of increase, with minor downward trends during the moratorium period, 1933-1938, and during the selling period, 1941-1946. The largest increment occurred in 1939 when 75,229 acres of tax-reverted lands swelled the area of 193,543 acres. The trend since 1950 has been one of slight increase through purchase and exchange.

Lands in State ownership of Class I quality increased from 4.4 per cent of all County lands in 1938 to 5.9 per cent in 1950. The State held 17.9 per cent of Class II lands in 1938 and 29.4 per cent in 1950. Considering Classes III and IV, in 1938 the State owned 29.9 per cent of Class III lands and 40.8 per cent of Class IV. By 1950 these percentages had increased to 44.2 and 60.1 respectively. This has meant an increase of 12.9 per cent in the two better classes and a 33.6 per cent increment in the two poorer classes. The area in State ownership is expected to remain stable pending a serious economic recession or a major change in the sale policy of the Department of Conservation.

The present area in private ownership includes 94.1 per cent of Class I lands, 70.6 per cent of Class II, 55.8 per cent of Class III, and 39.9 per cent of Class IV lands. This balance attests the success of the Conservation Department's policy of selling the better lands and retaining predominantly the poorer lands.

The proper balance between State and private ownership must be determined on the basis of whether given lands can contribute more to the general welfare in public or private ownership. No attempt is made in this thesis to suggest an area balance because the entire County was not surveyed for land use according to quality. Economic recession would cause this balance to shift in favor of State ownership through reversion. Even at the present high level of prosperity many marginal farms are making no attempts to maintain fertility. Lands in such ownerships will be subject to tax delinquency and reversion in the long run unless they are used more conservatively or shifted to timber or recreation uses.

The decision for State or private ownership should be made on the basis of which type of ownership secures the more efficient and desirable utilization of land resources. This should be decided for each parcel of land. Generally, the State should control all lands on which private owners cannot make a satisfactory profit, with the exception of those lands held privately for recreation.

Judging from the lack of tax reversion in the past six years in Cheboygan County and the high percentage of poor lands held by the State, the balance between State and private ownership is satisfactory. However, when present land use is correlated with land capability, it is seen that some adjustment of use is necessary to effect a sound and more permanent balance. Such adjustment should take into account the cyclical nature of the economic forces. The adoption of zoning or other forms of police power to bring about better land use is improbable. Adjustment will come gradually through education and demonstration by public agencies.

18. An intensive study was made of 20,571 acres of land sold by the State from 1936 to 1947. All lands which revert to the State are administered by the Department of Conservation. They are first surveyed in the field and then classified according to whether they should remain in public ownership or be sold. The recommendations of the County Land-Use Planning Committee aid in making this decision. All lands approved for sale must be offered at public auction. Mineral rights are reserved by the State.

In order to get certain State lands put up for sale, an individual must apply to the Conservation Department and indicate the use he intends to make of the land. If the land is suitable for private ownership and the intended use is acceptable to the Department, the description is placed on sale at the next auction in the area after being properly

advertised. However, in order to aid a land owner in obtaining a suitable description adjacent to his holding, an exchange policy allows him to buy a parcel of equal value elsewhere and trade with the Department on a value basis, where the need justifies such procedure.

The State had obtained some of the 20,571 acres as long ago as 1904, but 50 per cent were deeded to the State in 1939. Ninety per cent were sold after 1940, the year 1943 having the highest acreage sold. Approximately 30 per cent of the applicants were successful in purchasing their parcels of interest at the auction. This is not as high a percentage as the Department of Conservation would like, yet it is worth while.

Almost 50 per cent of the descriptions sold brought between $76.00 and $100.00 on a 40-acre basis. The average price paid per acre was $3.05. Lands sold for timber use brought the relatively high price of $3.34 per acre because the value of the stumpage was included. Those parcels purchased for summer residence and rural residence sites brought the highest prices, $3.84 and $3.80 per acre respectively. Selling prices in general increased from $1.56 per acre in 1940 to $4.23 in 1946. In 1952, State lands brought an average of $7.74 per acre.

The quality of lands sold by the State is indicated by classifying them according to Schoenmann's land type classes. Those lands in Class I comprised 18.6 per cent of all lands sold. There were 40 per cent in Class II, 28.7 per

cent in Class III, and 13 per cent in Class IV.

Sixty-four per cent of the lands sold had forest cover. Of these 13,022 acres, 70 per cent had not been cut; 19 per cent had been partially or lightly cut; and 11 per cent had been heavily cut. Lands with a cover of brush, scattered trees, and openings comprised 27.3 per cent of the lands sold; 4.0 per cent were devoted to farm crops; 3.4 per cent were in grassland; and 2.0 per cent were in orchard use.

Approximately 43 per cent of all parcels sold lie adjacent to maintained roads. Almost 30 per cent are fenced. Thirty-four parcels of the 529 sold had buildings on them at the time of sale; 19 all-year residences were erected after purchase; and 13 hunting cabins and 12 summer residences were built since the parcels were bought. Sixty-four per cent of the acreage is owned by 182 County residents, who were 61 per cent of all owners. Thirty per cent of the buyers live in other counties in the Lower Peninsula, primarily in the larger cities in southeastern Michigan.

Farmers purchased 25.7 per cent of the lands studied for pasture, the largest area in any use. Lands held for timber intent comprise 18.6 per cent, and those purchased in speculation make up 15.1 per cent of the total. Hunting is the dominant use on 10.9 per cent of these lands. Farm woodlots comprise 9.4 per cent, and lands used for summer residences, rural residences, crops, and orchard use amount to 3.6 per cent or less for each use.

The applicants' intended uses recorded on applications are available for 4,715 acres, or 22.9 per cent of all lands sold. Of this acreage, 42 per cent had present uses conforming with intended uses. Only 10 parcels had more intensive uses than those accepted by the Department of Conservation.

Thirty-eight per cent of the lands sold were added to 108 farms in the County. Of 6,433 acres sold to non-residents of the County, 33 per cent were held speculatively; 16.5 per cent were used for hunting; 9.1 per cent were used for summer residences; and the balance (26 per cent) is used for pasture, orchard, woodlot, rural residence, and crops.

Assessed valuations and taxes for the years 1937 and 1945 were available for 8,378 acres of lands sold by the State. During this interval there was a 16 per cent decrease in valuation and a 14 per cent decline in taxes. The average valuation per acre for 1937 was $6.00 while for 1945 it was $5.20. The average tax per acre was $0.087 in 1937 and $0.077 in 1945. By 1948 the average assessed valuation had risen to the 1937 level, but the tax per acre had decreased again. The average tax rates were 14.6 mills in 1937, 14.9 in 1945, and 8.9 mills in 1948.

Taxes are not burdensome at present. However, almost one-third of the acreage sold to private owners had delinquent taxes for one year in 1945 and 1948. This is probably the result of procrastination on the part of the taxpayer or

inefficient collection rather than inability to pay. There is little activity in buying tax-sale certificates and hardly any reversion. Therefore, delinquency is not important. There were 550 acres not recorded on County tax records for taxing purposes in 1948, two years after the last lands were deeded to private owners. This is probably due to laxity on the part of township assessors.

Relatively few State lands are available for private ownership in the County at present. Only 2,760 acres were sold by the State from 1947 to 1952 and 864 acres were disposed of by exchange. This decline in sale volume does not indicate a reduced demand but a diminution of the supply of lands available for sale under present Conservation Department policy.

Few buyers of State lands had justifiable criticism of the Conservation Department's policy of selling land. Some complaints were voiced because applicants were outbid at the auction and therefore did not obtain the parcels of interest. However, the exchange policy of the Department allows consideration of the individual applicant where the need justifies the procedure. A few buyers resented the State's reserving mineral rights. Several prospective buyers complained about the State's policy of not selling land which has water frontage on streams. Nevertheless it is believed that most buyers are well satisfied with the lands purchased from the State.

The prospective stability of lands in private ownership can be judged best by classifying use according to land

quality. It was found that 79 per cent of lands used for pasture are in land type Classes I and II which include the agricultural soils of the County. Forty-five per cent of the lands held for timber are in these two better classes. Only 66 per cent of the lands devoted to farm crops are in Classes I and II. The quality of lands for other uses either is not important or the acreage is not large.

The success of the land disposal policy of the Department of Conservation can be gauged on the bases of (1) the number of successful applicants (who would supposedly institute an approved use), (2) the suitability of the use according to land capability, and (3) the probability that the land can be retained profitably in private ownership.

The best estimate of the total area of lands likely to remain in private ownership may be obtained by considering the present uses according to the quality of lands supporting them. Where the use is too intensive for the land capability, the ownership is considered tenuous and susceptible eventually to delinquency and reversion. Considering that moderate economic recession will take place, a conservative estimate would place 3,260 acres, or 15.8 per cent, in unstable ownership. However, it is possible that some of this acreage might shift to other more conforming uses, perhaps to other ownership, if there is a demand for hunting and forest land. This leaves 84.2 per cent of the lands sold from 1936 to 1947 in stable ownership. Since the

State now owns approximately 51 per cent of the two poorer land classes, a moderate recession would cause relatively little reversion.

19. The economy of Cheboygan County has shifted from one primarily lumbering in 1900 to the present one dependent on agriculture, light industry, and recreation. Agriculture returned $1,177,900 in 1950; in the same year recreation brought in an estimated $2,250,000 spent for consumer goods, lodging, and other services; and manufacturing firms paid $1,268,000 in salaries and wages in 1947. The sale of forest products from all lands does not exceed $75,000 annually at present.

Much land devoted to agriculture is misused. The Soil Conservation Service is helping to promote better land use on 20 per cent of the farms at present. However, much needs to be done to improve land-use practices on other farms, especially on the 20 per cent under 50 acres in size. More farms should adopt dairying and forego raising beef cattle.

The recreation industry could be developed advantageously through more planning and action both in the City of Cheboygan and in the County. More attractions should be provided to entice summer visitors. To draw winter sports enthusiasts, ski hills could be developed along U. S. Highway No. 27 in the rolling southern portion of the County. Generally, the development of historical and scenic areas, more advertising of hunting,

fishing, and other recreational opportunities, and better dissemination locally of information of interest to tourists and sportsmen should be undertaken.

Owners of forest lands should adopt better management practices. However, given an understanding of proper management, they can do only what is economically expedient. Taxes on woodlands should be kept low to encourage private forestry.

The blocking in of large areas of low quality lands for State forests has in effect set up land classification boundaries which prevent encroachment of private uses not suited to soil capability. The in lieu taxes paid the County by the State are adequate compensation for public ownership and use of these lands. When State forests attain merchantable size, sales of timber should be large enough to pay for management, protection, and in lieu taxes, and provide much larger volumes of forest products to sustain local wood-using industries. At such time large private companies might be entrusted again with the ownership of those lands now in State forests which will have attained commercial quality.

Cheboygan County has survived the transition from white pine lumbering to the present with considerable detriment to the land and a loss of 23 per cent of the peak population. There are evidences of gradual adjustment toward better land use, stabilization of the population number, and an improved economy due largely to an increased recreation business.

APPENDIX

TABLE 69

SOILS OF CHEBOYGAN COUNTY CLASSIFIED ACCORDING TO SUITABILITY FOR AGRICULTURE

Soil Types	Area, Acres	Per Cent of Total
Soils well suited to farming		
Onaway loam	12,352	2.6
Onaway stony loam, shallow phase	3,776	.8
Selkirk silt loam	5,696	1.2
Nestor silt loam	832	.2
Nestor stony loam	256	.1
Emmet sandy loam, smooth phase	7,808	1.7
Bohemian very fine, sandy loam	3,520	.8
Subtotal	34,240	7.4
Soils less well suited to farming		
Emmet sandy loam	52,864	11.4
Emmet sandy loam, gravelly phase	16,704	3.6
Detour stony loam	4,032	.9
Alpena cobbly loam	2,304	.5
Roselawn sandy loam	5,056	1.1
Roselawn sandy loam, gravelly phase	192	...
Antrim sandy loam	1,600	.3
Summerville stony loam	1,152	.2
Ogemaw sandy loam	13,888	3.0
Ogemaw sandy loam, gravelly phase	7,936	1.7
Iosco sandy loam	2,176	.5
Brimley very fine, sandy loam	1,664	.4
Munuscong sandy loam	17,344	3.7
Bergland clay loam	8,704	2.2
Ruse fine sandy loam	576	.1
Bruce very fine sandy loam	1,664	.4
Munuscong sandy loam, grvly phase	10,304	
Subtotal	148,160	31.9

TABLE 69--Continued

Soil Types	Area, Acres	Per Cent of Total
Soils and miscellaneous land types generally not suited to farming		
Emmet loamy sand	29,952	6.4
Emmet loamy sand, gravelly phase	12,672	2.7
Porcupine gravelly sandy loam	704	.2
Kalkaska loamy sand	14,208	3.0
Kalkaska gravelly loamy sand	24,192	5.2
Roselawn sand	21,760	4.7
Roselawn sand, gravelly phase	896	.2
Wallace fine sand	1,728	.4
Weare fine sand	512	.1
Rubicon sand	40,896	8.8
Rubicon sand, gravelly phase	4,416	1.0
Grayling sand	9,856	2.1
Saugatuck sand	16,192	3.5
Newton sand	11,520	2.5
Granby sand	11,456	2.5
Griffin sandy loam	192	...
Griffin loam	3,200	.7
Kerston muck	5,568	1.2
Lupton muck	5,632	1.2
Edwards muck	2,176	.5
Rifle peat	50,880	10.9
Spalding peat	2,496	.5
Greenwood peat	2,752	.6
Houghton muck	1,856	.4
Eastport sand	2,176	.5
Eastport sand, gravelly phase	2,176	.5
Marl	256	.1
Coastal beach (Lake beach)	960	.2
Made land	256	.1
Quarries and pits	64	...
Subtotal	281,600	60.7
Grand total	464,000	100.0

TABLE 70

POPULATION OF CHEBOYGAN COUNTY IN CENSUS YEARS*

Year	Total Population
1860	517
1870	2,196
1880	6,524
1890	11,986
1900	15,516
1910	17,872
1920	13,991
1930	11,502
1940	13,644
1950	13,731

*Source: U.S. Bureau of the Census Volumes on Population, 1860-1950.

TABLE 71

POPULATION OF CHEBOYGAN COUNTY BY TOWNSHIPS
1880 - 1950[a]

	1880	1890	1900	1910	1920	1930	1940	1950
Aloha	...	...[b]	...	332	275	276	330	259
Beaugrand	594	332	506	446	360	312	454	541
Benton	793[c]	770	1,063	1,110	803	750	732	787
Burt	340[d]	376	404	557	197	187	236	179
Cheboygan (city)	2,269	6,235	6,489	6,859	5,642	4,923	5,673	5,687
Ellis[g]	...	159	326	341	237	229	302	228
Forest	...	161	622	1,064	525	406	622	605
Grant	773	459	542	462	312	245	377	345
Hebron	...	207	379	394	311	234	313	190
Inverness	1,027	1,153	1,589	1,647	1,317	854	1,055	1,084
Koehler	...	...	...	433	283	263	307	275
Mackinaw[b]	...	475	606	706	641	657	659	686
Maple Grove	...	...	...	...	63	33	10	...
Mentor	...	391	463	425	553	165	198	176
Mullett	...	...	...	...	195	263	273	341
Munro	140	254	418	543	485	346	361	345
Nunda[h]	...	581	967	1,238	716	460	538	517
Tuscarora	588[e]	380	711	650	376	439	570	832
Walker	...	...	...	153	206	100	205	212
Waverly	...	53	115	321	292	220	275	239
Wilmot	...	...	316	290	202	140	154	203
	6,524	11,986	15,516	17,872	13,991	11,502	13,644	13,731

[a]Source: U.S. Bureau of Census. Volumes on population.

[b]Part of Beaugrand Township given to Hebron and Mackinaw Townships in 1881.

[c]Includes Duncan Township which was added to Benton Township.

[d]Includes that part given to Ellis, Forest, and Waverly Townships after 1880.

[e]Includes that part given to Mentor and Nunda Townships after 1880.

[f]Includes that part of Mackinaw City lying in Cheboygan County.

[g]Includes Tower Village.

[h]Includes Village of Wolverine.

TABLE 72

MANUFACTURING STATISTICS, CHEBOYGAN COUNTY, 1889-1947[a]

	1889	1899	1919	1929	1939	1947
Number of establishments	78	96	26	12	8	20
Employees (average for year)	1,282	858	607	225	310	555
Salaries and wages	$440,586	351,520	594,590	226,400	242,000	1,268,000
Value added by manufacturing	...	...	...	...	664,000	3,508,000
Value of Products	$1,645,810	2,082,500	5,095,000	784,680	1,811,000	9,600,000[b]
Index prices of all commodities (1910-1914 = 100)	81	77	202	139	119	200
Salaries and wages in terms of 1910-1914 dollars	$543,933	456,521	294,351	162,876	202,966	634,000
Value of products in 1910-1914 dollars	$2,031,864	2,704,542	2,522,297	564,517	1,522,134	4,800,000

[a]No figures are available for 1909. Source: United States Census of Manufactures, 1890-1949. D. L. Gibson, Socio-Economic Evolution in a Timbered Area in Northern Michigan, Michigan State College Agric. Exp. Sta., Tech. Bull. 193, 1944.

[b]An estimated figure.

TABLE 73

PERCENTAGES OF TOTAL RETAIL SALES FOR 1949 BY MONTHS FOR CHEBOYGAN COUNTY AND THE STATE OF MICHIGAN*

Month	Cheboygan County	State of Michigan
January	4.9	7.0
February	4.8	6.7
March	5.4	7.8
April	6.3	8.8
May	7.8	8.8
June	8.8	8.5
July	13.9	8.4
August	14.3	8.4
September	11.1	8.6
October	8.2	8.9
November	7.2	8.2
December	7.3	9.9
Total	100.0	100.0

*Source: Michigan Department of Revenue.

TABLE 74

A SAMPLING OF TAXATION VALULS BY LAND TYPES 1949*

Land Type	Acres	Total Valuation	Valuation Per Acre	Total Tax	Tax Per Acre
Class I					
Riggsville	120	$ 1,350	$11.25	$21.75	$ .181
Afton	240	1,870	7.80	25.25	.105
Durocher	40	250	6.25	3.75	.094
Subtotal	400	$3,470		$50.75	
Average			$ 8.68		$ .127
Class II					
County Farm	40	$ 200	$ 5.00	$ 2.60	$ .065
Onioville	200	2,012.5	10.05	33.70	.168
Mackinaw	80	550	6.88	9.20	.115
Swedetown Flat	0	0	0	0	0
Alverno	127	925	7.20	13.52	.106
Orchard Bench	235	2,450	10.42	32.95	.140
Grant Ridge	120	1,000	8.33	14.20	.118
Subtotal	802	$7,137		$106.17	
			$ 8.90		$ .132
Class III					
Lakeshore	80	$ 900	$11.25	$ 13.95	$ .174
Laperell	120	875	7.30	12.02	.100
Mud Lake	200	750	3.75	10.85	.054
Black River	30	400	13.32	5.20	.173
Indian River	40	400	10.00	4.35	.109
Wildwood	240	1,706	7.11	23.18	.097
Subtotal	710	$5,031		$ 69.55	
Average			$ 7.09		$ .098
Class IV					
Straits Shore	32	$ 700	$21.90	$ 10.50	$ .328
Osmun Hills	80	337	4.22	4.39	.055
Dog Lake	40	300	7.50	3.90	.097
Dingman Bog	40	200	5.00	3.00	.075
Koehler Benton Plains	160	1,250	7.82	22.10	.138
Subtotal	352	$2,787		$43.89	
Average			$ 7.92		$ .125
Grand Total	2,264	$18,425		$270.36	
Grand Average			$ 8.13		$ .119

*This tabulation was compiled to sample assessed valuation and taxes for lands that have been continuously in private ownership.

TABLE 75

DAIRY PRODUCTS PRODUCED ON FARMS, 1920-1950[a]

Product	Year			
	1930	1940	1945	1950[b]
Milk produced-gals.	2,722,379	2,768,425	3,136,760	2,924,000
Whole milk sold-gals.	145,697	266,674	186,227	422,500
Butterfat sold-lbs.	527,142	516,623	706,259	416,525
Butter produced-lbs.	197,191	130,959	...	37,800
Butter sold-lbs.	77,759	37,259	8,885	...

[a]Source: United States Bureau of the Census volumes on agriculture for census years, 1920 through 1945.

[b]Figures for 1950 estimated from census tabulations because of change in units of measure from other census years.

TABLE 76

GRAIN PRODUCTION ON FARMS IN CENSUS YEARS*

Year	Barley			Buckwheat			Corn		
	Acres	Bushels	Volume per Acre	Acres	Bushels	Volume per Acre	Acres	Bushels	Volume per Acre
1880	19	337	17.7	17	320	18.8	83	3,079	37.1
1890	65	910	14.0	182	3,296	18.1	284	8,694	30.6
1900	163	3,560	21.8	149	1,710	11.5	1,093	28,490	26.1
1910	390	7,869	20.2	205	2,192	10.7	1,793	27,994	32.3
1920	804	8,386	10.4	378	3,784	10.0	1,493	47,058	31.5
1930	1,451	31,296	21.5	187	2,071	11.1	1,525	17,039	11.2
1940	409	8,434	20.3	161	2,381	14.8	2,703	93,920	34.8
1949	1,500	31,500	21.0	81	710	8.8	3,000	93,000	31.0

*Source: All figures for the census years 1880-1940 were taken from volumes on agriculture published by the United States Bureau of the Census. Those for 1949 are given in the Annual Crop and Livestock Summary issued by the United States Department of Agriculture in cooperation with the Michigan Department of Agriculture.

TABLE 76--Continued

Year	Oats			Rye			Wheat		
	Acres	Bushels	Volume per Acre	Acres	Bushels	Volume per Acre	Acres	Bushels	Volume per Acre
1880	859	21,545	25.1	68	966	14.2	941	14,651	15.6
1890	2,751	58,351	21.3	187	2,671	14.3	893	11,278	12.6
1900	3,417	100,570	29.4	420	5,920	14.1	2,372	32,370	13.7
1910	5,527	117,789	21.3	972	11,310	11.6	422	5,306	12.6
1920	5,943	77,307	13.0	2,413	22,753	9.4	1,725	17,818	10.3
1930	3,532	86,407	24.5	424	5,386	12.7	352	5,660	16.1
1940	3,173	80,327	25.4	218	2,936	13.5	500	7,009	14.0
1949	6,000	180,000	30.0	186	2,183	11.7	2,380	43,100	18.1

TABLE 77

PRODUCTION OF HAY, POTATOES, AND MAPLE PRODUCTS

1880-1950*

Year	Hay			Potatoes			Maple Products	
	Acres	Tons	Volume per Acre	Acres	Bushels	Volume per Acre	Sugar Pounds	Syrup Gallons
1880	1,998	2,375	1.2	395	48,149	122	6,324	532
1890	6,505	6,936	1.3	819	87,490	107	3,655	1,936
1900	10,158	12,118	1.2	1,312	140,709	107	0	167
1910	14,532	13,171	0.9	2,221	303,786	137	75	679
1920	22,312	27,146	1.2	2,689	226,391	85	108	889
1930	24,140	25,479	1.1	1,221	102,966	84	17	285
1940	23,894	30,042	1.3	1,891	145,947	77	25	520
1945	26,874	29,065	1.1	1,395	155,602	111	...	...
1949	26,000	27,700	1.1	1,100	172,700	157	...	...

*Source: United States Bureau of the Census volumes on agriculture for census years 1880-1940. The figures for 1949 come from the Annual Crop and Livestock Summary issued by the United States Department of Agriculture in cooperation with the Michigan Department of Agriculture.

TABLE 78

FARM PRODUCTS SOLD, CHEBOYGAN COUNTY
1944, 1949[a]

Type of Product	1944		1949	
	Value	Per Cent	Value	Per Cent
All farm products sold	$1,087,557	100	$1,177,925	100
Livestock and livestock products	770,086	71	837,233	71
Dairy products	429,867	40	424,385	36
Livestock and livestock products other than poultry and dairy products[b]	286,688	26	359,574	30
Poultry and poultry products	55,531	5	53,274	5
All crops sold	280,824	26	312,741	27
Field crops[c]	148,669	14	138,196	12
Fruits	121,976	11	136,837	12
Horticultural specialties[d]	1,545	...	28,710	2
Vegetables	8,634	1	8,998	1
Forest products	36,647	3	27,951	2

[a]Source: United States Bureau of the Census, 1945, 1950.

[b]Livestock and livestock products include the sale of all animals and such products as meat, goats' milk, wool, mohair, pelts, honey, etc.

[c]Field crops comprise corn, small grain, sorghum, legumes, hay, potatoes, clover, grass seeds, sugar beets, etc.

[d]Horticultural specialties include greenhouse and nursery crops such as mushrooms, flowers, vegetable seeds, bulbs, etc.

TABLE 79

LIVESTOCK ON FARMS IN CENSUS YEARS[a]

Year	Horses	Milk Cows[b]	Other Cattle[c]	Sheep	Hogs
1880	402	417	393	343	345
1890	1,016	1,399	1,500	413	1,346
1900	2,193	2,226	3,533	1,871	3,149
1910	3,228	3,368	3,314	2,007	3,071
1920	2,712	3,773	4,488	4,827	2,804
1930	1,890	4,132	4,253	2,380	1,443
1940	1,924	5,093	3,790	1,511	1,762
1945	1,596	5,693	5,818	1,161	1,506
1950[d]	863	5,100	5,600	370	1,600

[a]Figures for all years except 1950 were taken from volumes on agriculture published by the United States Bureau of the Census.

[b]Cows kept for milk production.

[c]Includes beef cattle, bulls, and all non-milk producing stock over 3 months of age.

[d]Figures for 1950 are estimates given by Annual Crop and Livestock Summary issued by United States Department of Agriculture in cooperation with Michigan Department of Agriculture.

TABLE 80

FOREST PRODUCTS PRODUCED ON FARMS, 1929, 1949*

Type of Product	1929	1949
Sawlogs and veneer logs, M.b.f.	67	336
Firewood--cords	9,864	9,088
Pulpwood--cords	239	630
Posts	11,810	19,220
Railroad ties	275	...
Poles and piling	455	100

*Source: United States Census of Agriculture for 1929 and 1949.

TABLE 81

VALUE OF FOREST PRODUCTS PRODUCED ON FARMS, 1869-1944*

Year	Value
1869	$ 4,815
1879	7,975
1899	129,055
1929	20,700
1939	13,869
1944	36,647
1949	27,951

*Source: United States Bureau of the Census.

TABLE 82

EMPLOYEES WORKING IN CHEBOYGAN COUNTY FOR THE CONSERVATION DEPARTMENT*

Position	Number of Employees	Salary Schedule (per month)	Total Salaries
Forester II	1	$280	$280
Fish Culturist I	1	230	230
Fish Culturist A	1	195	195
Fish Culturist B	3	165	495
Manual Worker C	2	150	300
Conservation Officer I	2	230	460
Forest Fire Officer A	2	195	390
Forest Fire Equipment Operator A	1	195	195
Forest Fire Lookout B	4	165	660
Park Manager I	1	230	230
Park Ranger B	2	165	330
Park Ranger C	4	150	600
Total . . .	24		$4,345

*Sources: Field Administration Division, Michigan Department of Conservation, 1951.

TABLE 83

COMPOSITION OF SCHOENMANN'S LAND TYPES BY SOIL TYPES

Land Type	Soil Types Making Up Land Types (Soil Number)	Percent of Each Land Type Made Up of Soil Types	Number of Separate Areas of Each Soil Type
Class I			
Riggsville (19,066 a.) (4.1 %)	Emmet Sandy Loam (26)	67	45
	Onaway Loam (24)	11	4
	Emmet Loamy Sand (29)	7	12
	14 other soils	15	40
Afton (25,669 a.) (5.6%)	Onaway Loam (24)	20	39
	Onaway Stony Loam (24x)	11	31
	Onaway Shallow Stony Loam (34x)	12	34
	Emmet Sandy Loam (26)	11	31
	Ogemaw Sandy Loam (15)	11	50
	Munuscong Sandy Loam (85)	6	30
	20 other soils	29	101
Durocher (12,737 a.) (2.8 %)	Selkirk Silt Loam (13)	36	60
	Bergland Clay Loam (32)	31	56
	Ogemaw Sandy Loam (15)	8	13
	19 other soils	25	50
Class II			
County Farm (7,679 a.) (1.7 %)	Bohemian Very Fine Sandy Loam (57)	36	24
	Bruce Silt Loam (7)	13	6
	Brimley Very Fine Sandy Loam (17)	9	13
	Rifle Peat (20)	8	4
	Munuscong Sandy Loam (85)	6	5
	16 other soils	28	39
Ohioville (39,862 a.) (8.7 %)	Emmet Sandy Loam (26)	62	91
	Emmet Sandy Loam Gravelly (26x)	12	22
	Emmet Loamy Sand (29)	6	24
	20 other soils	20	112

TABLE 83--Continued

Land Type	Soil Types Making Up Land Types (Soil Number)	Per Cent of Each Land Type Made Up of Soil Types	Number of Separate Areas of Each Soil Type
Class II			
Mackinaw (22,627 a.) (4.9 %)	Munuscong Sandy Loam Gravelly (85x)	27	52
	Ogemaw Sandy Loam Gravelly (15x)	19	30
	Detour Stony Loam (25x)	15	32
	Kalkaska Loamy Sand Gravelly (58x)	6	10
	Mancelona Loam Cobbly and Gravelly (54x)	6	8
	20 other soils	31	70
Swedetown Flat (2,771 a.) (0.6 %)	Rifle Peat (20)	9	9
	Bergland clay loam (82)	35	11
	Munuscong sandy loam (85)	15	7
	Munuscong sandy loam, gravelly (85x)	9	7
	Granby loamy sand (89)	18	11
	Eastport sand, gravelly (6x)	6	12
	6 other soils	9	19
Alverno (22,846 a.) (5.0 %)	Emmet sandy loam (26ms) gravelly smooth phase	27	29
	Emmet sandy loam gravelly (26x)	15	22
	Kalkaska loamy sand gravelly (58x)	8	9
	Emmet sandy loam (26)	8	12
	Ogemaw sandy loam (15)	6	11
	Kalkaska loamy sand (58)	6	6
	24 other soils	30	73
Orchard Bench (31,799 a.) (6.9 %)	Kalkaska loamy sand gravelly (58x)	52	72
	Kalkaska loamy sand (58)	24	30
	27 other soils	24	90

TABLE 83--Continued

Land Type	Soil Types Making Up Land Types (Soil Number)	Per Cent of Each Land Type Made Up of Soil Types	Number of Separate Areas of Each Soil Type
Class II			
Grant Ridge (17,837 a.) (3.9 %)	Emmet sandy loam (26)	15	38
	Emmet sandy loam gravelly (26x)	9	26
	Onaway sandy loam (24)	9	17
	Ogemaw sandy loam (15)	12	37
	Munuscong sandy loam (85)	20	73
	Rifle peat (20)	6	18
	17 other soils	29	81
Class III			
Lakeshore (5,870 a.) (1.3 %)	Munuscong sandy loam (85)	23	14
	Munuscong sandy loam gravelly (85x)	6	6
	Granby loamy sand (89)	12	9
	Newton sand (86)	5	4
	Eastport sand (6)	15	15
	19 other soils	39	37
Laperell (29,240 a.) (6.4 %)	Saugatuck sand (36)	26	75
	Saugatuck sand gravelly (36x)	7	20
	Rubicon sand (46)	12	46
	Newton sand (86)	16	48
	Rifle peat (20)	10	28
	23 other soils	29	108
Mud Lake (50,501 a.) (11.0 %)	Rifle peat (20)	62	156
	Lupton muck (30)	8	21
	Granby loamy sand (89)	6	23
	Munuscong sandy loam (85)	6	34
	23 other soils	18	115
Black River (7,467 a.) (1.6 %)	Kerston muck (80)	50	58
	Griffin fine sandy loam (74)	35	31
	Rifle peat (20)	7	14
	6 other soils	8	14

TABLE 83--Continued

Land Type	Soil Types Making Up Land Types (Soil Number)	Percent of Each Land Type Made Up of Soil Types	Number of Separate Areas of Each Soil Type
Class III			
Indian River (3,572 a.) (0.8 %)	Edwards muck (50)	77	19
	Kerston muck (80)	9	4
	Rifle peat (20)	9	3
	4 other soils	5	4
Wildwood (52,934 a.) (11.5 %)	Emmet loamy sand (29)	43	190
	Emmet loamy sand gravelly (29x)	18	61
	Emmet sandy loam (26)	15	51
	Emmet sandy loam gravelly (26x)	6	15
	18 other soils	18	145
Class IV			
Straits Shore (5,744 a.) (1.3 %)	Eastport sand (6)	18	15
	Eastport sand gravelly (6x)	13	9
	Rubicon sand (46)	15	7
	Kalkaska loamy sand (58)	8	2
	Lake Beach (9)	13	17
	Rifle Peat (20)	10	6
	Granby loamy sand (89)	7	15
	8 other soils	16	17
Osmun Hills (28,188 a.) (6.2 %)	Roselawn sandy loam (35)	7	10
	Roselawn sand (16)	62	73
	Rubicon sand (46)	11	41
	16 other soils	20	55
Dog Lake (17,343 a.) (3.8 %)	Rifle peat (20)	21	30
	Munuscong sandy loam (85)	15	37
	Newton sand (86)	8	18
	Ogemaw sandy loam (15)	11	30
	Rubicon sand (46)	12	17
	Emmet sandy loam (26)	6	13
	13 other soils	27	55

TABLE 83--Continued

Land Type	Soil Types Making Up Land Types (Soil Number)	Per Cent of Each Land Type Made Up of Soil Types	Number of Separate Areas of Each Soil Type
Class IV			
Dingman Bog (4,225 a.) (0.9 %)	Spalding peat (60)	44	7
	Greenwood peat (10)	27	6
	Rifle peat (20)	24	7
	30 other soils	5	4
Koehler Benton Plains (50,594 a.) (11.0 %)	Rubicon sand (46)	57	123
	Rubicon sand gravelly (46x)	6	11
	Grayling sand (56)	22	18
	21 other soils	15	102

LITERATURE CITED

1. Alchin, Edmon W. 1948. Annual report of the Cheboygan County agricultural agent. Unpublished. pp. 45-47.

2. American Society of Planning Officials. 1942. A program for the use of tax-abandoned lands. A report sponsored by the Amer. Soc. of Planning Officials. Chicago. pp. 1-34.

3. Andrews, Horace J., and Willard S. Bromley. 1941. Trends in land use in northern Michigan. Washington, D. C.: Charles Lathrop Pack Foundation. pp. 7-31.

4. Auditor General. 1951. Financial report of Michigan county government. Lansing: County Audit Division. 36 pp.

5. Barlowe, Raleigh. 1951. Administration of tax-reverted lands in the Lake States. Mich. State Col. Agr. Expt. Sta. Tech. Bul. 225. Pp. 77.

6. Bartlett, I. H. 1949. Whitetail deer resources. United States and Canada. Lansing: Mich. Dept. Conserv. 16 pp.

7. Beegle, J. A. 1947. Michigan population: composition and change. East Lansing: Mich. State Col. Agr. Expt. Sta. Spec. Bul. 342. 103 pp.

8. Brown, C. J. D. 1944. Michigan streams--their length, distribution, and drainage areas. Mich. Dept. Conserv. Inst. for Fisheries Res. Mich. Conserv. 12 (1943): 7 pp.

9. Chase, Lew Allen. 1922. Rural Michigan. Rural, State, and Province Series. New York: MacMillan Co. pp.41-156.

10. Colburn, William H. 1952. Northern Michigan land matters and the staff land policy committee. A report prepared by this land use specialist, Lands Division, Lansing, Mich.: Mich. Dept. Conserv. 13 pp.

11. Dana, Samuel T. 1918. Forestry and community development. Washington, D. C.: U. S. Dept. Agr. Bul. 638. 35 pp.

12. Davidson, R. D. 1952. Federal and state rural lands, 1950. U. S. Dept. Agr. Cir. 909. Pp. 100.

13. Ely, Richard T., and George S. Wehrwein. 1940. Land economics. New York: MacMillan Co. pp. 112-276.

14. Fontanna, Stanley G. 1949. State forests. Yearbook of Agr. (Trees). Washington, D. C.: U. S. Printing Office. pp. 390-394.

15. Ford, R. S., and F. M. Landers. 1940. Local government in Cheboygan County. Bur. of Govt., Univ. of Mich. Mich. Pam. No. 7. 28 pp.

16. Foster, Z. C., et al. 1939. Soil survey, Cheboygan County, Michigan. Washington, D. C.: U. S. Dept. of Agr., Ser. 1934. 47 pp.

17. Fuller, George N. 1938. Historic Michigan. Natl. Hist. Assoc., Vol. III (Micro.) pp. 91-115.

18. Gibson, D. L. 1944. Socio-economic evolution in a timbered area in northern Michigan. Mich. State Col. Agr. Expt. Sta. Section of Sociology, East Lansing. Tech. Bul. 193. 76 pp.

19. Griggs, Julian. 1940. Incomes derived from game resources in northern Michigan. Unpublished Master's thesis, Univ. of Mich. 12 pp.

20. Hoffer, C. R. 1948. Health and health services for Michigan farm families. Mich. Agr. Expt. Sta., Spec. Bul. 352. Pp. 49.

21. Hoover, Edgar M. 1948. The location of economic activity. New York: McGraw-Hill Book Co., First Edition. 310 pp.

22. Hunter, Woodrow. 1938. A sociological study in Cheboygan County. Unpublished report to the Committee in Charge of Research in Land Utilization and Land Use Planning of the Institute of Public and Social Administration, Univ. of Mich. 4 pp.

23. Johnson, Ida Amanda. 1919. The Michigan fur trade. Lansing, Michigan: Historical Comn. Pp. 16.

24. Leopold, Aldo. 1934. Conservation economics. Journal of Forestry, May. Pp. 542.

25. Leverett, Frank. 1917. Surface geology and agricultural conditions of Michigan. Mich. Geol. and Biol. Survey Pub. No. 25, Geol. Ser. No. 21. 526 pp.

26. Matson, Opal V. 1933. Local relief to dependents. Michigan Inquiry Commission. 70 pp.

27. Michigan Department of Conservation. 1936. Eighth biennial report. Lands Division, State of Mich. pp. 5-36.

28. Michigan Department of Conservation. 1949a. Directory of sawmills located in the northern half of the Lower Peninsula of Michigan. Lansing, Mich.: Forestry Division. 25 pp.

29. Michigan Department of Conservation. 1949b. Directory of wood-using industries. Lansing, Mich.: Forestry Division. (Mimeo.)

30. Michigan Department of Conservation. 1949c. Function, policies, procedures of the Lands Division. Lansing, Mich.: Lands Division. 19 pp.

31. Michigan Department of Conservation. 1950. Fifteenth biennial report. Lands Division, State of Mich. pp. 134-160.

32. Michigan Department of Conservation. 1952a. Northern Michigan land matters and the staff land policy committee. Lansing, Mich.: Lands Division. 13 pp.

33. Michigan Department of Conservation. 1952b. Sixteenth biennial report. Lands Division, State of Mich. pp. 183-224.

34. Michigan State Planning Commission. 1943. State and federal lands in Michigan. Lansing, Mich. 40 pp.

35. Michigan State Planning Commission. 1946. Michigan's major agricultural problems with suggested solutions. A report prepared by the Agricultural Advisory Committee. Lansing, Mich.: Mich. Planning Comn. and Mich. State Col. Agr. Extension Service. 31 pp.

36. Michigan Unemployment Compensation Commission. 1949. The labor market situation in the Cheboygan (County) area. Planning, Research, and Statistics Division. (Mimeo.) 9 pp.

37. Mitchell, J. A., and D. Robson. 1950. Forest fires and fire control in Michigan. Mich. Dept. Conserv. in cooperation with U. S. Dept. Agr., Forest Service. 72 pp.

38. Nelson, Alf. 1940. Forest taxation in Michigan. U. S. Dept. Agr. (Mimeo.)

39. Ramsdell, W. F. 1937a. The primary and secondary wood-using industries of the Lower Peninsula of Michigan. George Willis Pack Forestry Foundation, Univ. of Mich. Pp. 17.

40. Ramsdell, W. F. 1937b. The primary wood-using industry of the Lower Peninsula of Michigan for the year 1935. George Willis Pack Forestry Foundation, Univ. of Mich. Pp. 34.

41. Raper, Charles L. 1932. Land use and transportation. Proceedings of Land Use Symposium. American Assoc. for the Advancement of Science. Syracuse University, Syracuse, New York. 57 pp.

42. Robbins, Roy M. 1951. Our landed heritage. New York: Peter Smith. 450 pp.

43. Robinson, George, and R. A. Sprague. 1873. History of Cheboygan and Mackinaw Counties. Cheboygan, Michigan: Union Job Printing Co. pp. 1-103.

44. Rutherford, William B. 1940. The intent in ownership in Cheboygan County, Michigan. Unpublished Master's thesis, Univ. of Mich.

45. Smith, Richard A. 1914. The occurrence of oil and gas in Michigan. Mich. Geol. and Biol. Survey, Publ. No. 14, Geol. Ser. No. 11. Wynkoop, Hallenbeck, and Crawford Co., State Printers. pp. 211-212.

46. Stace, Arthur W. 1940. What are we going to do with 2,208,975 added acres? Reprinted by Mich. Dept. Conserv. from series of eight articles from Booth Newspapers, Inc. pp. 4-48.

47. Stephenson, J. H. 1933. Michigan elk. American Forests. Vol. 39. pp. 539, 571.

48. Stone, Edward A., and Edgar M. Hoover. 1940. Interregional balance of payments. A report made under the program of land utilization and land use planning of the Institute of Public and Social Administration, Univ. of Mich. 25 pp.

49. Stone, Edward A., and Edgar M. Hoover. 1942. Retail trading areas in Cheboygan County, Michigan. Unpublished report to the Committee in Charge of Research in Land Utilization and Land Use Planning of the Institute of Public and Social Administration, Univ. of Mich. 81 pp.

50. Sturgeon, Edward E. 1941. A study of tax delinquent lands in Cheboygan County, Michigan. Unpublished Master's thesis, Univ. of Mich. 56 pp.

51. Thaden, J. F. 1948. Population change in the rural and urban areas of Michigan since 1940. Reprinted from Mich. Agr. Expt. Sta. Quart. Bul. 31, No. 2. pp. 223-247.

52. Titus, Harold. 1945. The land nobody wanted. Mich. State Col. Expt. Sta. Spec. Bul. 332. 43 pp.

53. Titus, Harold. 1946. Cheboygan's chin is up. The Sat. Eve. Post, July 6. pp. 35-36.

54. U. S. Bureau of the Census. 1860 through 1950 inclusive. Volumes on agriculture. Washington: Government Printing Office.

55. U. S. Bureau of the Census. 1939, 1948. Census of business. Washington: Government Printing Office.

56. U. S. Bureau of the Census. 1947. Census of manufactures. Washington: Government Printing Office.

57. U. S. Bureau of the Census. 1860 through 1950 inclusive. Volumes on population. Washington: Government Printing Office.

58. Whittemore, H. O., and Wendell Taylor. 1938. Studies on the recreational use of land in Cheboygan County. Unpublished report to the Committee in Charge of Research in Land Utilization and Land Use Planning of the Institute of Public and Social Administration, Univ. of Mich. 19 pp.

59. Zon, Raphael, and W. A. Duerr. 1942. Farm forestry in the Lake States. U. S. Dept. Agr. Cir. No. 661. Washington, D. C. pp. 1-34.