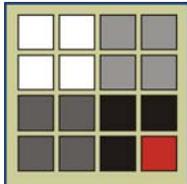


# **Social and Economic Assessment for Michigan's State Forests**

**Prepared for: Michigan Department of Natural Resources  
Forest, Mineral, and Fire Management Division**

**Lansing, Michigan**

**September 5, 2006**



**Prepared by:  
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## Preface

Public Act 125 of 2004, Section 52505, requires the Michigan Department of Natural Resources (MiDNR) to seek and maintain third-party sustainable forestry certification. Forest certification requires that MiDNR forest management plans take into consideration social and economic parameters that affect future forest management operations. Currently, the MiDNR is preparing a statewide forest management plan, and each of three eco-teams are drafting ecoregional management plans. The social and economic information provided in this report will be used to assess current social and economic conditions and to develop future management directions within each of the plans.

The report focuses primarily on three ecoregions: the Western Upper Peninsula, Eastern Upper Peninsula, and Northern Lower Peninsula as defined by the MIDNR along county boundaries. It covers social and economic conditions within these ecoregions in aggregate and on a county-level basis. As a result data for the areas in and around Michigan state forests are highlighted.

The “Social and Economic Assessment for the Michigan National Forests” (July 25, 2003), by Larry Leefers, Karen Potter-Witter, and Maureen McDonough from Michigan State University, provides a general model for this report.

The assessment report is based on secondary data. No primary data collection was done. MiDNR personnel provided unpublished data from MiDNR records. The report presents analyses of existing data and discusses relationships and trends in the variables of interest, and contains some projections based on existing literature.

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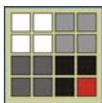
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## Chapter 8. Assessment Summary

### Chapter 1. Introduction

- The Michigan DNR is preparing a statewide forest management plan, and management plans for sub-state ecoregions, starting with the Western Upper Peninsula (WUP), Eastern Upper Peninsula (EUP), and Northern Lower Peninsula (NLP). This report information on social and economic conditions and trends is intended to support development of future management directions for these plans.
- The geographic scope of this report includes three ecoregions. Because most social and economic data are available by political subdivisions, ecoregions are defined as groups of counties for the purpose of this report. Actual ecoregional boundaries do not follow county boundaries and in some cases, MiDNR Forest Management Units also cut across county boundaries.
- Michigan state forests comprise almost 4 million acres and cover 12.5 percent of the land area of the State. State forests represent almost 87 percent of all land in DNR ownership with parks and game areas making up the rest. State forests make up 13.5 percent of the Western UP, 30.9 percent of the Eastern UP, and 19.9 percent of the NLP.
- This report provides information in the following major areas:
  - Demographic patterns and trends (Chapter 2)
  - Relationships with communities (Chapter 3)
  - Economic vitality and dependence (Chapter 4)
  - Natural resources production and economic contributions (Chapter 5)
  - Outdoor recreation (Chapter 6)
  - Other forest uses and values (Chapter 7)

### Chapter 2. Demographic Patterns and Trends in Michigan

- The three northern Michigan ecoregions account for 12.2 percent of the State population according to the 2000 Census.
- In recent decades, population growth has occurred in the NLP, but the Eastern UP and Western UP have been relatively stagnant in terms of population growth.
- The Western UP lost population slightly from 1990 to 2000. All counties in the Eastern UP grew in population from 1990 to 2000, increasing a total of 8 thousand people. The NLP grew by 129 thousand people in that period. Double-digit percentage population growth was most notable in the NLP.
- Population density is low in the study area and ranged from 14 to 46 persons per square mile in the three northern Michigan ecoregions in 2000. Statewide, the population density averaged 175 per square mile.
- Analysis of population within 120 miles of the centroid of state forests in 2000 shows that there were 967 thousand people for Western UP state forests, 574 thousand for Eastern UP forests, and 2.94 million for NLP state forests.
- Most northern Michigan counties are classified as “recreation counties”, which is related partially to net migration into the area.
- Natural change (births – deaths) was negative in the WUP during the 1990 to 1999 period. This contributed to the overall WUP population decline.
- The NLP had significant growth during the 1990’s due to positive natural change and immigration.
- The percentage of males and females in Michigan and the ecoregions is approximately equal. The exception is higher percentages of males in the EUP in recent decades; this is partially attributable to correctional facilities located there.

- The counties in the NLP generally have lower percentages of minorities than those counties in other regions. American Indians are concentrated in the UP and Black – African Americans are concentrated in the Southern Lower Peninsula (SLP).
- For most educational metrics, northern Michigan ecoregions and counties fall below average performance for the state. Counties with strong links to universities fare better than others.
- Seasonal homes are concentrated in northern Michigan, in comparison with the more densely populated southern region of the State.

### **Chapter 3. MI DNR Relationships with Communities**

- The MiDNR and other natural resource agencies interact with communities to understand issues of mutual interest and to implement programs for management of natural resources. The interactions of natural resource agencies and communities is a widespread phenomenon (McDonough et al. 1999, Leefers et al. 2003).
- Communities of interest can be classified as place-based or affiliation-based, and they may be statewide and/or specific to certain ecoregions. (Leefers et al. 2003).
- Statewide communities include international organizations, federal agencies, Tribes, multi-state organizations, other state agencies, universities, statewide recreation and other user groups, conservation and environmental groups, and non-governmental organizations.
- Local communities specific to ecoregions include counties, local units of government, local chambers of commerce and regional/local groups similar to those existing at the state level. In addition, there are local permanent residents and seasonal residents.
- Natural resource features affect why people live in an area and visit it. People enjoy the peace, quiet and tranquility of northern Michigan, the opportunity to be close to nature, and scenic beauty (Kakoyannis et al. 1999).
- In the WUP, researchers found that there was widespread recognition of the contributions public forests made to the quality of life in their communities (Carr and Halvorsen 2001).
- Relationships that the MiDNR has with other organizations and people in communities near state forests are important for sharing agency and publics' concerns regarding forest management, creating public support for the forest management, and providing resources for forest management activities.
- The U.S. and Michigan governments have unique legal and political relationships with Indian tribes. Tribes are independent sovereign nations, and there are 12 federally recognized Tribes in Michigan. State forests collaborate with Tribes in the management of state forest lands.
- Public participation occurs at three primary administrative levels: at the State or Division level, at the Ecoregional or District Level, and at the Forest Management Unit Level (Forest Certification Work Instruction 1.5, 2005). In addition, there is substantial public participation in a wide variety of MiDNR programmatic and project work. Michigan's state forests have extensive relationships with diverse partners across the state.
- State forests exist in a political and social environment of national, state and local land use policies. Some of these policies do not directly influence state forest management, but they drive management decisions on adjacent and nearby lands.
- Historically, Michigan had numerous statutes related to natural resource management. In 1994, these disparate statutes were combined into the Natural Resources and Environmental Protection Act (P.A. 451)

### **Chapter 4. Economic Vitality and Natural Resource Dependence**

- Approximately 12% of all industrial establishments in Michigan were in the WUP, EUP and NLP in 2005.
- Over \$1.2 billion in wages were paid by the Forestry and Logging, Wood Products Manufacturing, and Paper Manufacturing sectors in 2005.

- The Local Government sector was the largest employer in the WUP, EUP and NLP in 2005.
- Seasonality is a distinct unemployment feature of northern Michigan. Relatively high unemployment rates in the winter and spring are followed by relatively low rates during the summer and early fall.
- Forest-related economic activities of primary interest include timber harvesting, wood products manufacturing, recreation and tourism, and minerals extraction.
- Most forest products employees are in the SLP, and are associated with secondary manufacturing. Logging operations are concentrated in northern Michigan where wood raw materials dominate the landscape.
- Grand Traverse, Mackinac and Emmet counties had the highest tourism-related spending in northern Michigan in 2000.
- Mining establishments are largely concentrated in the SLP and NLP, but there is a proposal for a large new nickel and copper mine in the UP near Marquette.
- The number of MiDNR employees declined over the 1995-2005 period.
- The largest loss of MiDNR employees was in the NLP, especially in Roscommon and Crawford counties.
- There has also been a significant switch from full-time to part-time or seasonal employees.
- Median household income in 2000 was lowest in the WUP and highest in the SLP. Most of the lowest income counties were located in northern Michigan.

## Chapter 5. Natural Resources Production

- Michigan timberland increased from 17.4 million acres in 1980 to 18.7 million acres in 2004. Michigan ranks sixth in the nation in the amount of timberland.
- The State as a whole is 53 percent forested. The Western UP is 87% forest; the Eastern UP is 83% forest, and the NLP is 67% forest according to the most recent forest inventory (FIA) conducted by the USDA-Forest Service.
- The WUP has 898 thousand acres of state-owned forest land; the EUP has 998 thousand acres of forest land; and the NLP has 1.93 million acres of forest land. Collectively, state ownership makes up 24% of all forest land in the three northern ecoregions.
- Statewide, the most common softwood forest types on MiDNR timberland are northern cedar, jack pine, and red pine. Maple-beech-birch, aspen, and oak-hickory are the most common hardwood forest types on MiDNR timberland.
- The state forests contain about 19% of Michigan's total growing stock timber volume with 5.1 billion cubic feet on MiDNR timberlands. Sixty-two percent of the volume on MiDNR timberlands is in four forest types – maple-beech-birch (29.6%), aspen (11.6%), oak-hickory (11.3%), and red pine (10.1%)
- Net annual timber growth on DNR lands is 163.5 million cubic feet, more than 2 million cords annually, based on USDA-FS inventory data for the 2000 to 2004 measurement period. Average annual removals from MiDNR timberlands are estimated by FIA at 58.4 million cubic feet, roughly 730,000 cords.
- Total pulpwood production in Michigan was 2.66 million cords in 2004, the most recent year for which data are available. About one-quarter of this production came from state forests. Production in the WUP was 1.2 million cords; the EUP was 420 thousand cords, and the NLP was 909 thousand cords from all lands. Pulpwood production for 2004 from MiDNR lands was about 5% of the state total in the WUP, 4% in the EUP, and 12% in the NLP.
- Michigan produces more than one billion board feet of high-value sawlogs annually (based on 1998 FIA data). Two-thirds of all sawlog production comes from four species groups: hard and soft maple, red oak, and red pine. Sawlog production on DNR lands is about 61 million board feet and dominated by red pine, oak, aspen, and maple.
- Timber sales from state forest lands in the three ecoregions generated \$30.7 million in 2004 and \$44.8 million in 2005. Sawlogs comprised about 15% of total timber volume sold in 2005, but generated 43% of total timber revenue.

- Average timber prices for DNR sales have risen consistently and faster than inflation over time. Average prices for all timber products averaged \$43.08 per cord in 2004 and \$55.51 per cord in 2005. Prices varied greatly, depending on product and species. Pulpwood prices ranged from \$8 to \$55 per cord in 2005. Sawlog prices ranged from \$14 to \$852 per MBF. Jack and red pine generated the highest prices for pulpwood. Sugar maple and red pine generated the highest prices for sawlogs.
- Although prices for some products showed considerable variability over time, red and jack pine pulpwood, sugar and red maple and red pine sawlogs showed very strong and sustained real price increases from 1986 to 2005.
- The State owns mineral rights, including oil and gas, on over 6 million acres of land, some of which is on state forests. About 25% of the 13,722 oil and gas wells in the State are located on state-owned land in the Lower Peninsula. About 31% of the oil and gas wells in the NLP are on state-owned lands. There is no oil and gas production in the Upper Peninsula.
- About 6.9 million barrels of oil are produced annually in the State, and 191 billion cubic feet of natural gas were produced in Michigan from all land ownerships in 2005. Production for both oil and gas has declined over time. For the production history covering the last 16 years, oil production peaked at 14.3 million barrels in 1990 and gas production peaked at 291 billion cubic feet in 1997.
- Mining is a very important land use in Michigan with mineral occurrences located throughout the state. There are 850 producing mineral occurrences in the State with more than 80% of these being sand and gravel operations. Mining operations for metallic minerals such as iron, copper and other metals are primarily concentrated in the Western UP with numerous undeveloped mineral occurrences. Information on mining operations on MiDNR lands was limited.
- Michigan has abundant water resources and each of the three ecoregions is drained by many watersheds. The WUP contains parts or all of 19 watersheds; the EUP has 12 watersheds; and the NLP has 17 watersheds. The top five watersheds drain 48% of the WUP, 78% of the EUP, and 59% of the NLP ecoregion.
- Water use in Michigan is about 1 billion gallons per day. About 93% of the water supply comes from surface waters (particularly the Great Lakes) and about 7% from ground water sources.
- Public water supplies serve 72% of the State's population but public water supplies reach a lower proportion of the residents in the three northern Michigan ecoregions. In the Western UP, 68% of the population are served by public water supplies. Fifty-one percent of the people in the EUP have access to public water supplies and only 33% have public water in the NLP.
- Average water consumption was slightly more than 1,000 gallons per day in Michigan. This rate includes all water uses divided by the resident population and varies considerably across the state, depending on industrial uses. Per capita consumption is much higher in some counties bordering the Great Lakes, especially those with high water-use industries such as thermoelectric power generation.
- The number of captive privately-owned cervid farms has increased dramatically from the late 1980s to the present. In 2004 there were 740 facilities that raise deer and elk in captivity. Eighty-seven percent of these were active operations. These facilities are actively inspected by the Michigan Department of Agriculture to assure animal safety and protect wildlife in surrounding areas.

## **Chapter 6. Outdoor Recreation Uses and Values**

- The State and federal lands account for over 21% of Michigan lands. The State of Michigan has the largest landholdings including state forests, state park and recreation areas, state wildlife refuges, and state game areas. Federal lands consist of national forests, national lakeshores, a national park, and national wildlife refuges.
- Forest, Mineral and Fire Management and Wildlife Divisions of the Michigan Department of Natural Resources manage the state forests, the largest dedicated state forest system in the United States.
- At the federal level, the USDA Forest Service manages national forests, the USDI Park Service manages national parks and lakeshores, and the USDI Fish and Wildlife Service manages national wildlife refuges.
- Commercial forest lands covering over 2.2 million acres allow access for fishing and hunting.

- Wilderness and natural areas provide unique opportunities for dispersed recreation and solitude. These areas have restrictive management standards and guidelines with a clear purpose of preserving natural ecological and social values.
- Over 2,000 miles on sixteen rivers or segments of rivers have been designated into Michigan's Natural River System since 1970.
- Motorized trails far exceed non-motorized trail mileage—over 9,300 miles are available for snowmobiles and ATVs/ORVs.
- In 1999, the designated ORV system had 3,107 miles of ORV trails and five major scramble areas where vehicles can use varying terrain in concentrated areas.
- Commercial campsites exceed public sources and account for 46% of the campsites within northern Michigan.
- Camper days, a measure of recreation use, at state forest campgrounds has been relatively stable in the past four years.
- Participation in fishing, hunting, and wildlife watching by Michigan residents declined from 1996 to 2001.
- Overall, though hunter numbers are substantial, the number of paid hunting license holders has declined in recent years. This downward trend is reflected in the number of active firearm deer, small game and waterfowl hunters. The number of turkey hunters and bear hunters has increased significantly in recent years, and the number of furtakers has increased as well.

#### **Chapter 7. Other forest uses and values**

- The MiDNR and USDA-Forest Service held a series of 53 focus group sessions beginning in 1996 to gather information on people's views of Northern Lower Michigan and their visions and concerns regarding public land management. Participants identified the following important characteristics that reflect the multitude of values and uses of the region:
  - Low population, less traffic, and absence of urban characteristics
  - Slower, friendlier lifestyle
  - Small town environment
  - Beauty and solitude of lakes, rivers, and the natural environment
  - Nearness to public lands
  - Clean air, open spaces, the four seasons, and the pristine environment
  - Hunting, fishing, viewing wildlife and other recreational activities
  - Raw materials for manufacturing and good transportation networks
- The State Historic Preservation Office (SHPO) and the Office of the State Archaeologist (OSA) work to identify, record, investigate, interpret and protect historic and archaeological sites.
- The National Historic Preservation Act (NHPA) requires consultation with Tribes and others to identify and manage traditional cultural properties.
- Forests play a significant role in providing non-timber forest products that enhance the livelihoods of many families (Emery 2001).
- Gathering is used by families to bridge gaps in earnings and to supplement household income in times of economic need, such as seasonal unemployment.
- Land and resource allocations for parks, natural rivers, and other purposes reflect many of the values held by Michigan's people.

#### **Data gaps and limitations**

- This assessment covered a broad set of information describing the conditions and trends on Michigan's state forests. In some instances, the scope of the analysis was limited by the time and resources available. However, we also encountered several situations where data limitations affected our analysis.

- Changes in the protocols used for the USDA-Forest Service forest inventory between the 1993 periodic inventory and the annualized inventory (2000 to 2004) limit comparability of these inventory data. In particular, aggregated classification of private ownerships eliminates the ability to separate out these owner groups. Also, shifts in field classification of growing stock trees suggests that the definition of this category of live trees has drifted over time.
- Data on property values and land transactions near state forests was not easily nor consistently accessible. Information on land markets and parcelization is difficult to obtain, but essential for understanding the dynamics of forest and land use change near the public lands. Better information on land subdivision, development trends near public lands and implications for management would be an important socioeconomic information gap to fill.
- Available data on oil and gas revenues from DNR lands were limited. More production and revenue information on this important activity would improve this analysis.
- This study did not analyze wildlife population trends, uses, and values in as much depth as would be possible with more detailed data. We recognize that both game and non-game wildlife reflect important social values for the people of Michigan. Further analysis of values and contributions of wildlife to people and the specific implications for management is needed.
- The state forests are a source of non-market products and services; however, specific data on the extent of these benefits from DNR lands were limited, especially when viewed in comparison with data available on commodities. Also, more in-depth data on the extent and characteristics of recreation activities and users of the state forests is needed. The MiDNR does not systematically collect recreation use and user information across all programs.
- We also found limitations on the extent of sites with historic importance. Although some information is available from the State Historic Preservation Office (SHPO) specific information on the extent of sites on MiDNR lands does not appear to be available.
- Overall, this report presents demographic, natural resource use and other data for MiDNR planning purposes. The implications of conditions and trends for state forest management were beyond the scope of this study and warrant further consideration.

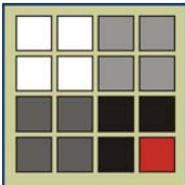
# **Social and Economic Assessment for Michigan's State Forests**

## **APPENDIX**

**Prepared for: Michigan Department of Natural Resources  
Forest, Mineral, and Fire Management Division**

**Lansing, Michigan**

**September 5, 2006**



**Prepared by:  
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