I.   OVERVIEW OF FORESTED AREAS

A.   Size and Location of Forested Areas in Michigan

Of the 36 million acres of land in Michigan, 19.3 million are forested, and 18.6 million acres are classified as timberland, land suitable for production of timber crops and not administratively withdrawn from timber production (USFS, 2002). By some measures, Michigan forest cover has been increasing, and the 1993 acreage represented a 7% increase since 1980. However, much of the new forest cover occurs on inactive farmland and does not support sustainable timber harvests or full ecosystem functions.

Forests are primarily located in the northern 2/3 of the State (**Map 1**), and the total area of forest is the fifth largest among all states. The percentage of forest cover varies dramatically from south to north (**Map 2**) reflecting the influence of agriculture in the more productive soils and climate of the southern Lower Peninsula, as compared to the northern Lower and Upper Peninsula.
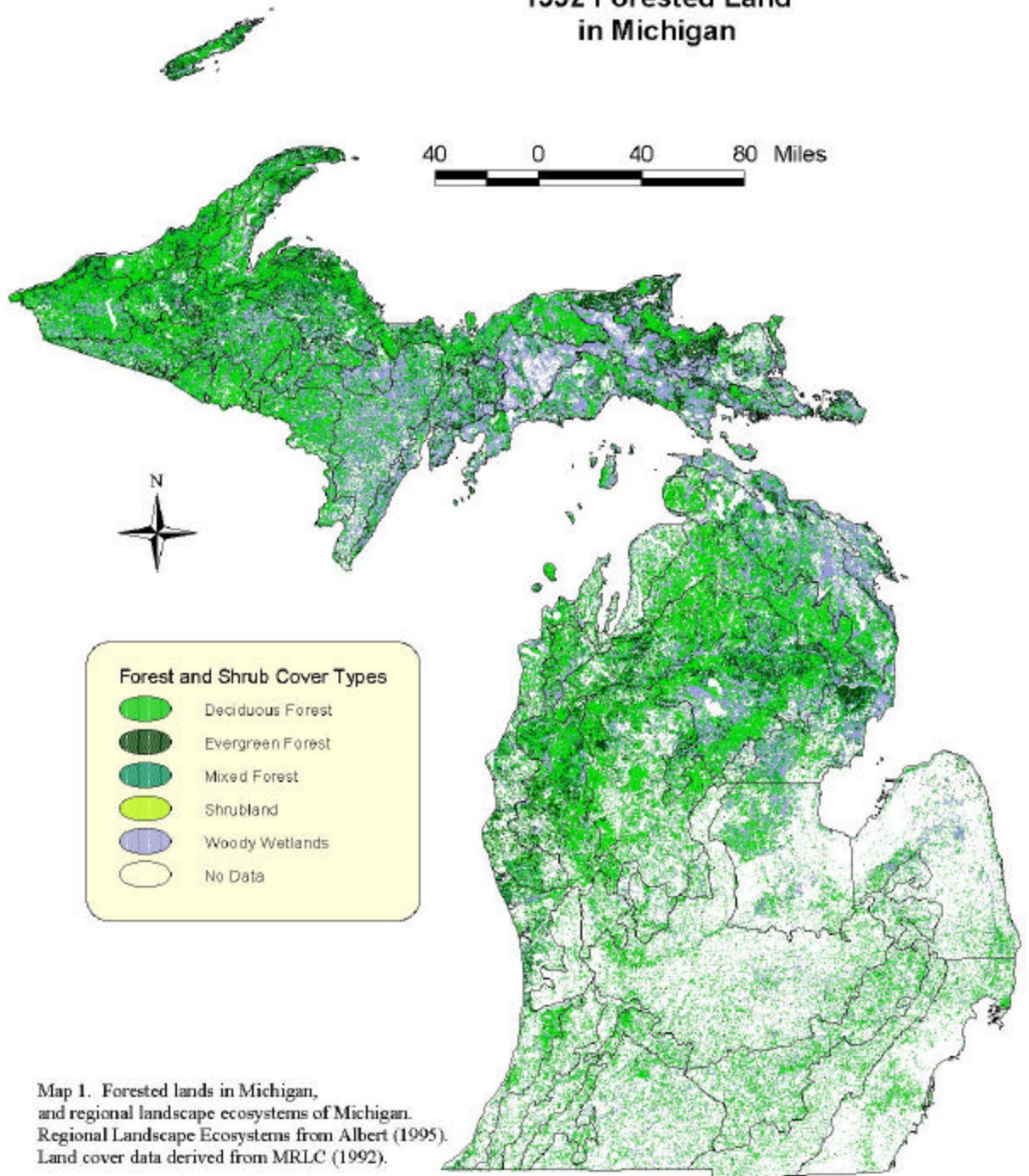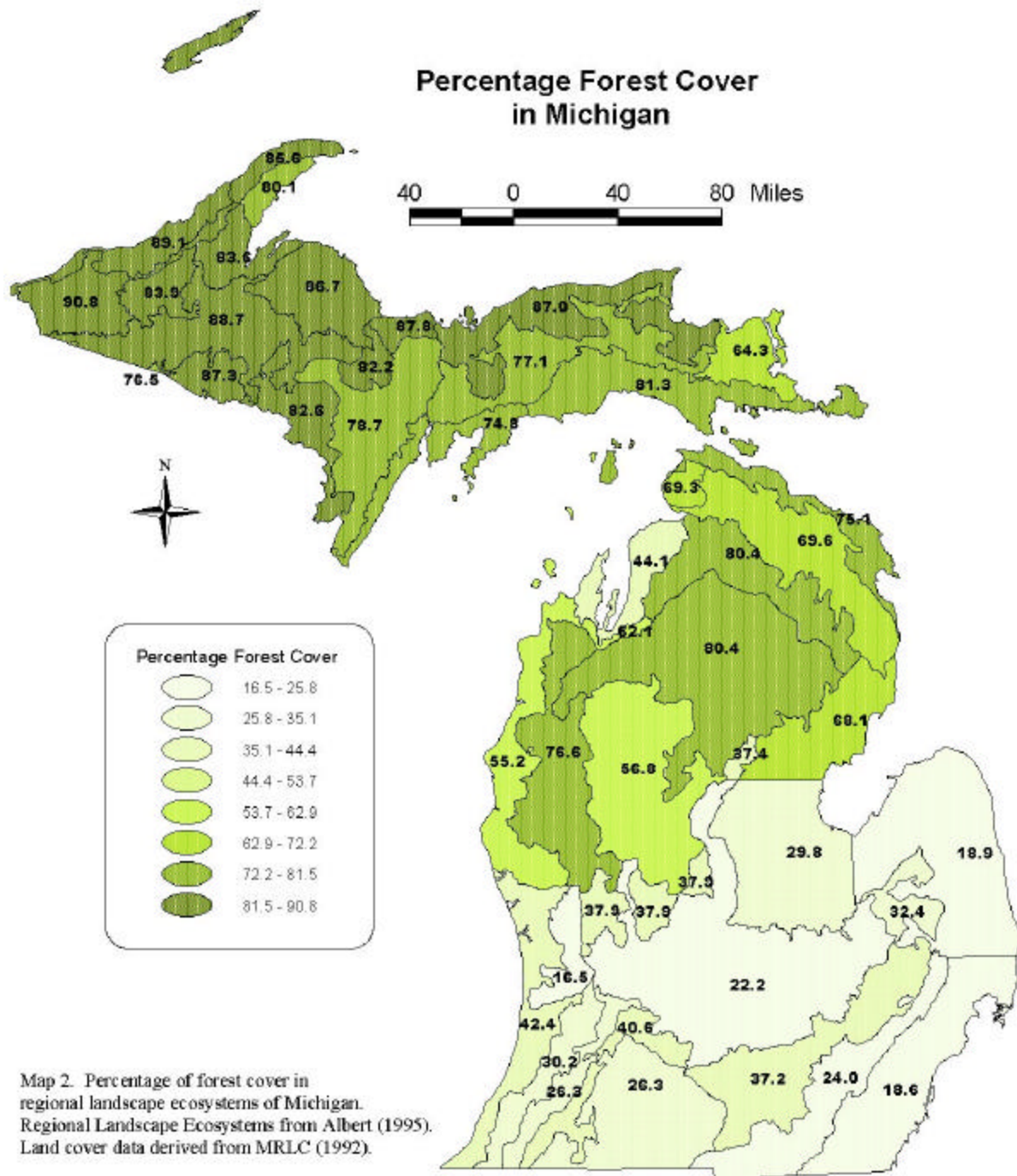
B.   Cultural Heritage and Social Value

Michigan's cultural heritage could be said, without exaggeration, to have been built using Michigan's forests. From the historic logging camps in the Upper Peninsula to the establishment of timber shipping communities like Port Huron, the people of Michigan have depended on forests for recreation, jobs, and their very survival since well before statehood. Indeed, long before European settlement and industrialization, the area's forests provided a foundation for the rich Native American culture found across the Great Lakes region.

Michigan's forests and their proximity to the Great Lakes played a key role in Michigan's history over the last two centuries. When the earliest European immigrants came to Michigan in the 1660's, the land was mostly covered by forests. That began to change rapidly after the 1825 opening of the Erie Canal, which provided a direct link with the eastern states. The first influx of new settlers to Michigan came to farm, and as farming replaced fur trading as the dominant economic activity, the forests in the southern part of the state were cleared to make way for agriculture.

In the years after the Civil War, a major timber industry took root in Michigan as increasing industrialization and national expansion fueled demand for timber products. By 1869, Michigan was producing more lumber than any other state (Michigan Historical Center). The ready availability of jobs in Michigan timber camps, difficult though they were, gave rise to further immigration. By the end of the nineteenth century, continued growth in demand and technological advances like the Big Wheel (invented in Michigan by Silas Overpack of Manistee as an alternative to transporting timber on sleds) led to further increases in timber production.

1992 Forested Land
in Michigan

40   0   40   80   Miles

N

Forest and Shrub Cover Types

- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrubland
- Woody Wetlands
- No Data

Map 1. Forested lands in Michigan,
and regional landscape ecosystems of Michigan.
Regional Landscape Ecosystems from Albert (1995).
Land cover data derived from MRLC (1992).

Percentage Forest Cover in Michigan

40   0   40   80   Miles

85.6
80.1
89.1
83.6
83.9
86.7
90.8
88.7
87.0
87.8
76.5   87.3   82.2   77.1   64.3
82.6   78.7   74.8   81.3

N

Percentage Forest Cover

16.5 - 25.8
25.8 - 35.1
35.1 - 44.4
44.4 - 53.7
53.7 - 62.9
62.9 - 72.2
72.2 - 81.5
81.5 - 90.8

69.3
75.1
44.1   80.4   69.6
62.1
80.4
69.1
55.2   76.6   56.8   37.4
29.8   18.9
37.9   32.4
37.9   37.9
16.5   22.2
42.4   40.6
30.2
26.3   26.3   37.2   24.0   18.6

Map 2. Percentage of forest cover in
regional landscape ecosystems of Michigan.
Regional Landscape Ecosystems from Albert (1995).
Land cover data derived from MRLC (1992).

The early timber companies, however, had little interest in continuing to own or manage large tracts of land after the land had been logged, and often simply abandoned the land after cutting or sold parcels to families for farming. Many of the newly established farms were doomed to failure because the land was not suitable for farming. Land that had been cut was no longer protected from erosion, and the remaining debris occasionally caught fire and caused widespread damage across the State.

The Nineteenth Century push for timber helped give rise to the Twentieth Century conservation movement in Michigan. Efforts like the work of the Depression-era Civilian Conservation Corps (CCC) helped assure reforestation of many areas of the State now forested. Even in places where forests are no longer present, traces of forest history remain. Towns, parks, lakes and rivers across Michigan have been named after timber camps or families formerly associated with the timber industry; And much of the public land now owned by the State of Michigan is tax delinquent land that was either abandoned by early timber companies or by families who failed at attempts to farm it.

From the creation of "plank roads" used to ease travel before the rise of the automobile, to the use of forest products in the early automobile manufacturing process, Michigan's forests have touched virtually all walks of life and contributed to much of the State's history. Today, forest-based industries, recreation and tourism continue to support hundreds of thousands of jobs that sustain working families across Michigan, whether in cities or small towns (see **Section III. B.** below for further information on economic benefit.).

In addition to providing livelihoods, Michigan's remaining forests and abundant freshwater lakes and streams draw thousands of outdoor enthusiasts interested in hunting, fishing, snowmobiling, or just catching a glimpse of a bear, rare bird or plant. Michigan residents and visitors alike thrive on hiking, biking, camping and hunting in the Michigan forests. Michigan's forests are, and always have been, central to the State's way-of-life.

C.   Physical Make-up of Michigan Forests

Due to its past glacial activity, geology, climate and geographical position relative to the Great Lakes, Michigan contains southern broadleaf forests, needleleaf boreal forests and a variety of mixed forest types in between. The variety of forest communities in Michigan reflects the diversity of weather conditions, geology, topographic features, soil types, and hydrologic conditions throughout the State. Because of the interactions of these factors and their effects on vegetation, one can think of Michigan as a mosaic of different *landscape ecosystems.*

Landscape ecosystems are units of land that can be identified and mapped at broad (regional) and fine (local) scales, providing a useful framework for understanding forest communities and their characteristic structure, composition, successional patterns, potential interactions, and the importance they hold for rare and common wildlife species.

Landscape ecosystems also provide a context for understanding human uses of forests such as timber production, recreation, conservation, aesthetic enjoyment, food gathering, and other uses. When considering the nature and value of the forests in Michigan and the need for a program such as Forest Legacy, it is helpful to be able to break the State up into operational components. Counties are familiar units of the State and have been used by other states in their Assessments of Need, but landscape ecosystems are a more ecologically meaningful system of units, and the ecological characteristics and human uses of forests are better understood through such a system.

D.   Michigan's Landscape Ecosystems

The regional landscape ecosystems of Michigan have been identified, classified, and mapped (Albert et al. 1986, Albert 1995), and these ecosystems form the framework for some of this Assessment of Need (**Map 3**). In brief, the State can be divided into four ecological sections, which can then be subdivided into various subsections and sub-subsections, each a finer level of the classification representing more subtle distinctions in climate, geology, and general vegetation communities. Characteristics of each of these landscape ecosystems have been described in detail (Albert et al. 1986, Albert 1995), and the U.S. Forest Service has summarized the characteristics (1995).

The Michigan Natural Features Inventory (MNFI) (1986) has described the forested communities that occur in Michigan (**Table 1**). This classification is also useful at the state level for describing broad patterns of vegetation. Each of these broad communities includes a good deal of variability, depending on local variation in climate, geology, topography, and soils, and at the local level many more forest communities can be identified, some of them rare (see below).

Table 1. Forest Communities in Michigan (Chapman 1986)

Wetland Forest
Poor conifer swamp
Rich conifer swamp
Relict conifer swamp
Hardwood-conifer swamp
Southern swamp
Southern floodplain forest

Forest/marsh
Wooded dune and swale complex

Upland Forest
Mesic southern forest (southern hardwood forest)
Dry-mesic southern forest (oak-hardwood forest)
Dry southern forest (oak forest)
Mesic northern forest (northern hardwood forest & hemlock-hardwood forest)
Dry-mesic northern forest (pine-hardwood forest)
Dry northern forest (pine forest)
Boreal forest

Regional Landscape Ecosystems of Michigan

Regional
Landscape Ecosystems

VI. Southern Lower Michigan
VI.1. Washtenaw
VI.1.1. Maumee Lake Plain
VI.1.2. Ann Arbor Moraines
VI.1.3. Jackson Interlobate
VI.2. Kalamazoo Interlobate
VI.2.1. Battle Creek Outwash Plain
VI.2.2. Cassopolis Ice-Contact Ridges
VI.3. Allegan
VI.3.1. Berrien Springs
VI.3.2. Southern Lake Michigan Lake Plain
VI.3.3. Jamestown
VI.4. Ionia
VI.4.1. Lansing
VI.4.2. Greenville
VI.5. Huron
VI.5.1. Sandusky Lake Plain
VI.5.2. Lum Interlobate
VI.6. Saginaw Bay Lake Plain
VII. Northern Lacustrine-Influenced Lower Michigan
VII.1. Arenac
VII.1.1. Standish
VII.1.2. Wiggins Lake
VII.2. Highplains
VII.2.1. Cadillac
VII.2.2. Grayling Outwash Plain
VII.2.3. Vanderbilt Moraines
VII.3. Newaygo Outwash Plain
VII.4. Manistee
VII.5. Leelanau and Grand Traverse Peninsula
VII.5.1. Williamsburg
VII.5.2. Traverse City
VII.6. Presque Isle
VII.6.1. Onaway
VII.6.2. Stutsmanville
VII.6.3. Cheboygan

VIII. Northern Lacustrine-Influenced Uper Michigan and Wisconsin
VIII.1. Niagaran Escarpment and Lake Plain
VIII.1.1. St. Ignace
VIII.1.2. Rudyard
VIII.1.3. Escanaba/Door Peninsula
VIII.2. Luce
VIII.2.1. Seney Sand Lake Plain
VIII.2.2. Grand Marais Sandy End Moraine and Outwash
VIII.3. Dickinson
VIII.3.1. Northern Lake Michigan (Hermanville) Till Plain
VIII.3.2. Gwinn
VIII.3.3. Deerton
IX. Northern Continental Michigan, Wisconsin, and Minnesota
IX.1. Spread Eagle-Dunbar Barrens
IX.2. Michigamme Highland
IX.3. Upper Wisconsin/Michigan Moraines
IX.3.1. Brule and Paint Rivers
IX.3.2. Winegar Moraine
IX.5. Lac Veaux Desert Outwash Plain
IX.6. Bergland
IX.6.1. Gogebic-Penokee Iron Range
IX.6.2. Ewen
IX.6.3. Baraga
IX.7. Keweenaw
IX.7.1. Gay
IX.7.2. Calumet
IX.7.3. Isle Royale
IX.8. Lake Superior Lake Plain

Map 3. Regional Landscape Ecosystems of Michigan from Albert (1995).