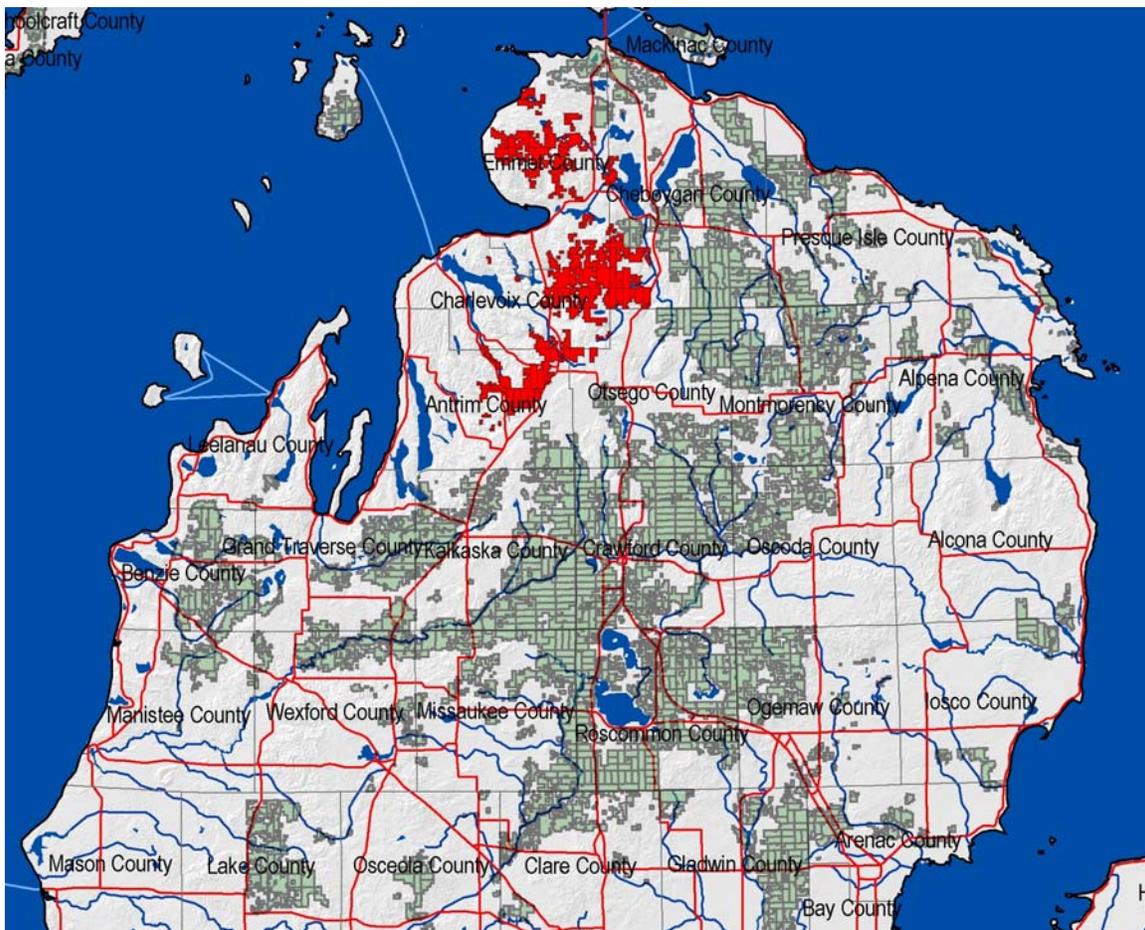


## West Shore Hardwoods Management Area (MA) Preliminary DRAFT Example 8-3-07

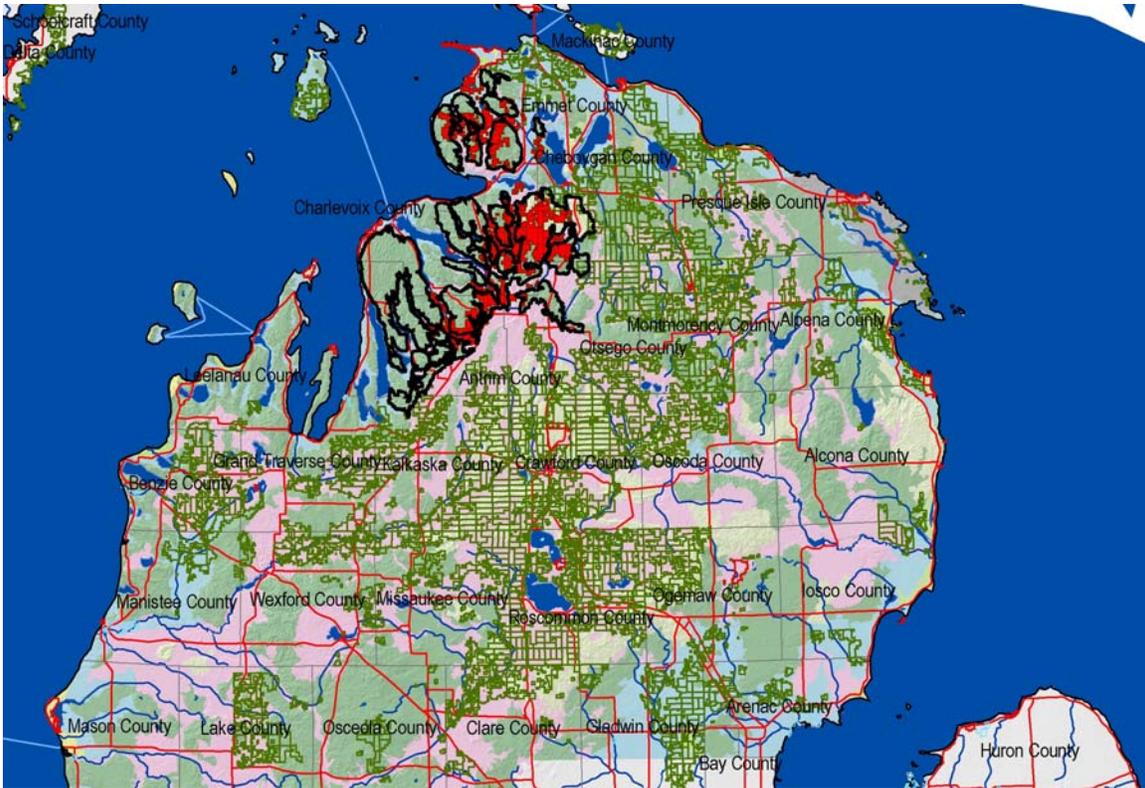
The following provides an example of how Management Areas will be conceptually applied in the Northern Lower Peninsula Regional State Forest Management Plan to provide direction to field level decisions regarding cover type management – in this case the discussion centers on one of several cover types (red pine) that occur with the West Shore Hardwoods Management Area.

### ***West Shore Hardwoods Descriptive Narrative***

The West Shore Hardwoods Management Area (Figure 1) in the northwestern Lower Peninsula includes DNR State Forest lands in areas locally known as the Jordan Valley, Chandler Hills, and the Emmet County Hardwoods. Lands in these areas are characterized by steep moraines and drumlins inter-laced with cedar-dominated wetlands (Figure 2).



**Figure 1-** Location of draft example of the West Shore Hardwoods Management Area (Red) in relation other MDNR State Forest lands (green) NLP Eco-region, Michigan.



**Figure 2.** The West Shore Hardwood Management Area (red) in relation to Quaternary Geology (moraine, drumlin, and kamic features outlined in black) and other MDNR state forest lands (green outline) NLP Eco-Region, Michigan.

Historically, the region was dominated by northern mesic (hemlock-sugar maple-beech) forest on the moraines and rich conifer swamp in the inter-morainal wetlands and along lake shores. Extensive hemlock harvesting occurred in the late 1800s and hardwood, tamarack, and cedar harvests peaked with the advent of narrow-gauge rail systems in the early 1900s. During this period, most upland areas were essentially clear cut. As a result, the subsequent regeneration heavily favored stump-sprouting species such as aspen, birch, oak and soft maple. In addition, the Civilian Conservation Corps, and later the DNR, planted red pine stands in many areas that had experienced poor regeneration as a result of fire-induced top soil degradation and/or chronic frosting.

Present state lands in the region are composed of maturing northern hardwood forest, aspen, and red pine on upland sites, and rich conifer swamp and lowland hardwoods on lowland sites.

### ***MA Selection Criteria used***

#### **Ownership Criteria**

- Large blocks of concentrated SF ownership.
- Multiple compartments: (73) Total of 138,000 acres

- Older existing “management plan” for part of the proposed MA: Jordan Valley.

#### **Social/Economic Criteria**

- Traditional Native American activities.
- High value timber products.

#### **Ecological Criteria**

- Geomorphology: correlates strongly with morainal features.
- Uniform ecological site potential: primarily northern hardwoods and lowland conifer.
- Concentrations of similar cover type.

### ***West Shore Hardwoods Management Area Characterization***

Presently, the cover type distribution on state forest land in the management area is approximately 55% (76,000 acres) northern hardwoods; 14% (20,000) aspen; 12 % (17,000) mixed conifer swamp; cedar, and lowland brush; 7% (9,000) red pine; 4% (6,000) grassland, and 8% (11,000) other.

State lands in the MA represent about 7% of total state lands in the Eco-region. The red pine acreage (9,000) in the MA represents about 5% of the total red pine on MDNR state forest lands in the NLP Eco-region. Conversely, the MA includes nearly 40% of the total northern hardwood acreage in the NLP Eco-region. Of the red pine in the MA, 89% (8,000 acres) is 41-80 years old; 45% (4,067) of this being 41-60 and 44% (3,947) 61-80 years old respectively. Based on a sampling procedure, about 5% (350 acres) occur on sites described as dry-mesic or natural red pine sites, about 85% (5,700 acres) occur on sites described as mesic “hardwood” sites with another 9% (600) occurring on transition sites. The sample of the 61-80 year old red pine age class represents 87% (3,400 of 3,900) of total red pine acreage in that age class in the MA. Of these stands, <1% (<25 acres) occur on dry-mesic sites, 90% (3,100) are on “hardwood” sites with an additional 7% on transition sites. Dry-mesic (natural red pine) sites are limited in the management area, representing only about 5% (7,000) of the total acreage. The current distribution of cover types on these sites is estimated to be about 33% northern hardwoods, 20% aspen, 13% oak, 10% red pine, 7% white pine, 5% grassland, and 12% other.

### ***West Shore Hardwoods Management Area Direction***

This section in the Regional State Forest Management Plan will provide management direction for each MA. Forest Management Unit foresters and biologists will use this direction to guide management decisions that are made during the compartment review process. For the red pine cover type within the West Shore Hardwoods MA management direction is to:

1. Move towards balancing the red pine age classes by accelerating stand replacement harvest in the over-represented age 40 - 80 stands.
2. Maintain stands of red pine already on 350 acres of dry-mesic northern forest sites (Kotar types PArVHa, PArVVb, or mixes including these site classes), through re-planting or natural regeneration following stand replacing final harvest.
3. Increase the overall representation of red pine as a component of the dry-mesic northern forest (Kotar types PArVHa, PArVVb, or mixes including these site classes) by retention and by inter-planting following harvest on up to 900 acres of oak cover type in the MA.
4. Decrease planted red pine acreage occurring on 5,700 acres of mesic sites (Kotar types AFOCa, AFO/AFOCa, or AFO) by allowing natural succession of understory hardwoods following harvests where all or most of the pine was removed.