**4.19 Menge Creek Management Area**

Summary of Use and Management

Vegetative management in the Menge Creek management area (MA) (Figure 4.19.1) will provide a variety of forest products; maintain or enhance wildlife habitat; protect areas with unique characteristics; and provide for forest based recreational uses. Timber management objectives for the 10-year planning period include improving the age-class distribution of aspen; maintaining the conifer component in northern hardwood stands; maintaining the presence of minor cover types on the landscape; and maintaining non-forest vegetation types. Wildlife management objectives include address the habitat requirements identified for the following featured species: American marten, black bear and white-tailed deer. Management activities may be constrained by site conditions and the skewed age-class distributions. Balancing age classes will be an issue for this 10-year planning period.

Introduction

The Menge Creek management area is on a dissected moraine in central Baraga County. The state forest covers 7,656 acres and is in scattered blocks on the landscape. The major ownership in this vicinity is non-industrial private and the Keweenaw Bay Indian Community. The management area is dominated by the aspen, northern hardwood and paper birch cover types. Other attributes that played a role in the definition of this management area include:

- Dominated by two natural communities: mesic northern forest and dry mesic northern forest;
- Mid-range in site quality;
- Provides multiple benefits including forest products and dispersed recreational activities; and
- Provides a variety of fish and wildlife habitats.

The management priority in this area is to continue to provide these multiple benefits while minimizing user conflicts.

The predominant cover types, composition and projected harvest areas for the Menge Creek management area are shown in Table 4.19.1.

Table 4.19.1. Summary of cover types, composition, limited factor area, manageable area and projected harvest area for the Menge Creek management area (2012 Department of Natural Resources inventory data).

| Cover Type | Cover % | Current Acreage | Hard Factor Limited Acres | Manageable Acres | 10 Year Projected Harvest (Acres) | | Projected Acreage in 10 Years | Desired Future Harvest (Acres) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Final Harvest | Partial Harvest | | Final Harvest | Partial Harvest |
| Aspen | 34% | 2,631 | 520 | 2,111 | 531 | 0 | 2,631 | 352 | 0 |
| Northern Hardwood | 24% | 1,814 | 205 | 1609 | 0 | 595 | 1,814 | 0 | 729 |
| Paper Birch | 5% | 380 | 355 | 25 | 0 | 0 | 380 | 3 | 0 |
| Upland Open/Semi-Open Lands | 3% | 228 | 0 | 228 | 0 | 0 | 228 | 0 | 0 |
| Lowland Open/Semi-Open Lands | 3% | 212 | 0 | 212 | 0 | 0 | 212 | 0 | 0 |
| Misc Other (Water, Local, Urban) | 1% | 106 | 0 | 106 | 0 | 0 | 106 | 0 | 0 |
| Others | 30% | 2,285 | 426 | 1859 | 247 | 393 | 2,285 | 211 | 412 |
| Total | | 7,656 | 1,507 | 6,149 | 778 | 988 | 7,656 | 566 | 1,141 |

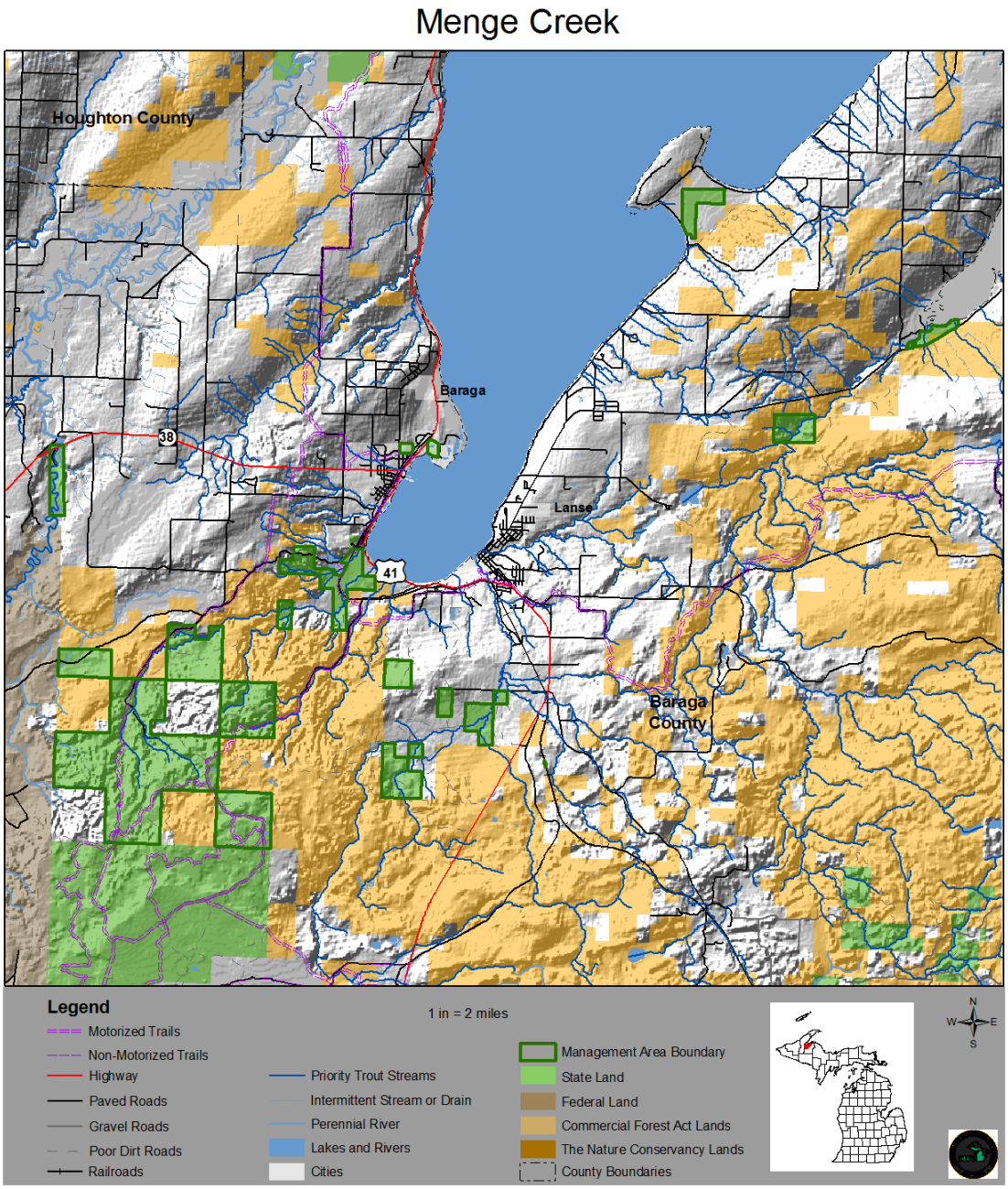


Figure 4.19.1. A map of the Menge Creek management area (dark green boundary) in relation to surrounding state forest and other lands in Baraga County Michigan.

### 4.19.1 Forest Cover Type Management Direction

The following sections contain information on vegetation management for each of the major cover types, a grouping of minor cover types and important non-forested vegetation types for the Menge Creek management area in the form of Desired Future Condition, 10-Year Management Objectives and Long-Term Management Objectives. This information applies to those portions of the forest where active management (i.e., timber harvest, prescribed fire, planting or mowing) will be conducted. In other portions of the state forest, the natural processes of succession and disturbance will provide ecological benefits. While most stands have a variety of tree species and other vegetation, they are classified by the species with dominant canopy coverage.

The following cover types are valued commercially for their timber products; ecologically as sources of habitat for numerous wildlife species; and for the variety of recreational opportunities they provide. Harvesting and regenerating these cover types will provide for a continuous flow of forest products and will help to ensure (or provide) wildlife habitat.

**Aspen Cover Type**

Current Condition

The aspen cover type covers 2,631 (34%) of this management area (Table 4.19.1). Most of the aspen cover type in this management area is found on sites of medium productivity.

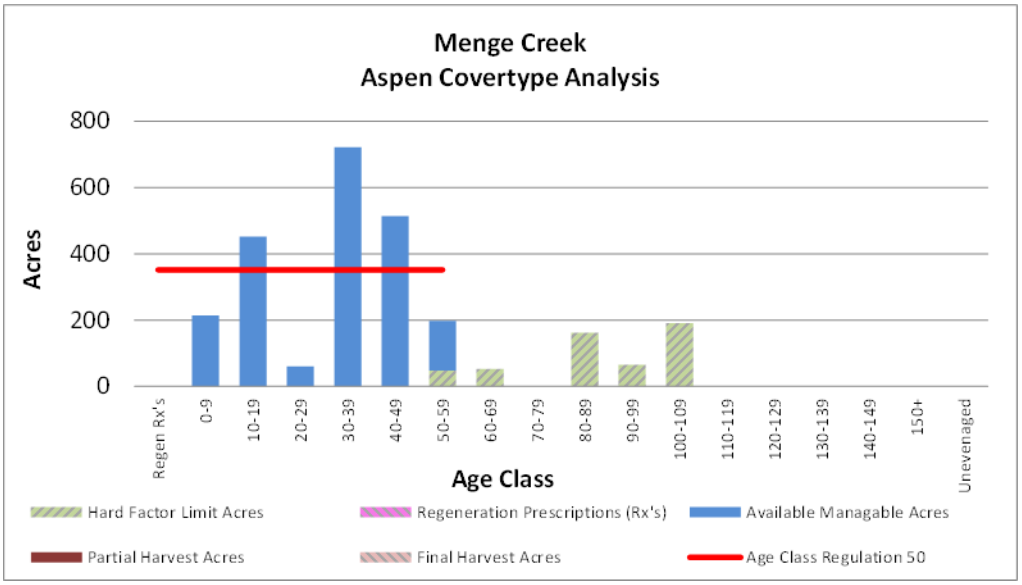

Figure 4.19.2. Graph of the age-class distribution for the aspen cover type on the Menge Creek management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Balanced acres in each age class over a 50-year rotation;
- Provide a supply of forest products;
- Provide a mix of habitat conditions for a variety of wildlife; and
- Provide a variety of hunting-type opportunities.

Long-Term Management Objective

- Harvest aspen stands on a sustainable basis using a 50-year rotation length amounting to the harvest and regeneration of 352 acres each decade.

10-Year Management Objectives

- Harvest 531 acres in this 10-year planning period; and
- Two-aged stands with mature aspen over younger stands should be identified and scheduled for harvest.

**Northern Hardwood Cover Type**

Current Condition

Northern hardwood stands make up 1,814 acres (24%) of the management area (Table 4.19.1). They occur on medium quality sites. Due to low deer numbers in this area, there are few problems with herbivory and most stands regenerate and recruit successfully.

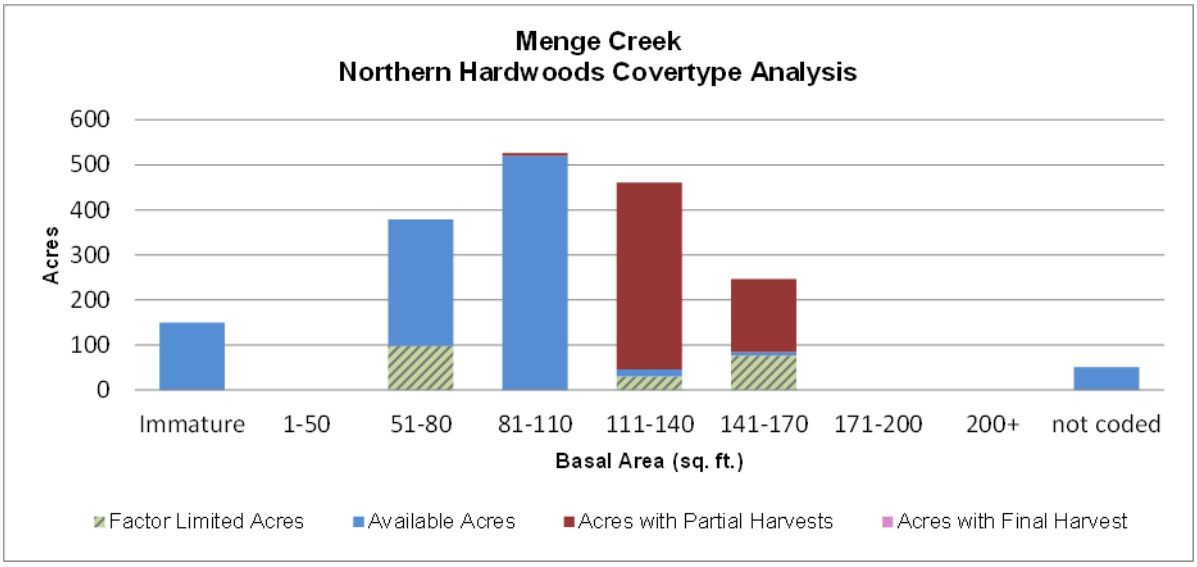

Figure 4.19.3. Graph of the basal area distribution for the northern hardwood cover type on the Menge Creek management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Sustainable regeneration and recruitment of northern hardwood species leading to an all-age structure.

Long-Term Management Objective

- Selectively harvest northern hardwood stands on a 20-year cycle, consisting of 729 acres per decade, promoting high-value sugar maple sawlogs;
- A full complement of tree seedlings recruiting into the overstory;
- Well-developed shrub and herbaceous layers; and
- Maintain and encourage minor species to increase in-stand diversity.

10-Year Management Objective

- Selectively harvest 595 acres this 10-year planning period (this number is lower than the target acreage due to the high number of acres with low basal area);
- Maintain and regenerate white pine, oak, hemlock and upland cedar where they occur in stands that are harvested; and
- Work to regenerate hemlock components in stands lacking that species.

**Paper Birch Cover Type**

Current Condition

About 380 acres (5%) of this management area are in the paper birch cover type (Table 4.19.1). Paper birch is poorly distributed across age-classes ranging in age between 70 and 100, well over the biological maturity of paper birch. It is expected that some of the paper birch will succeed to aspen or northern hardwood types as most of this cover type has a hard limiting factor assigned to it.

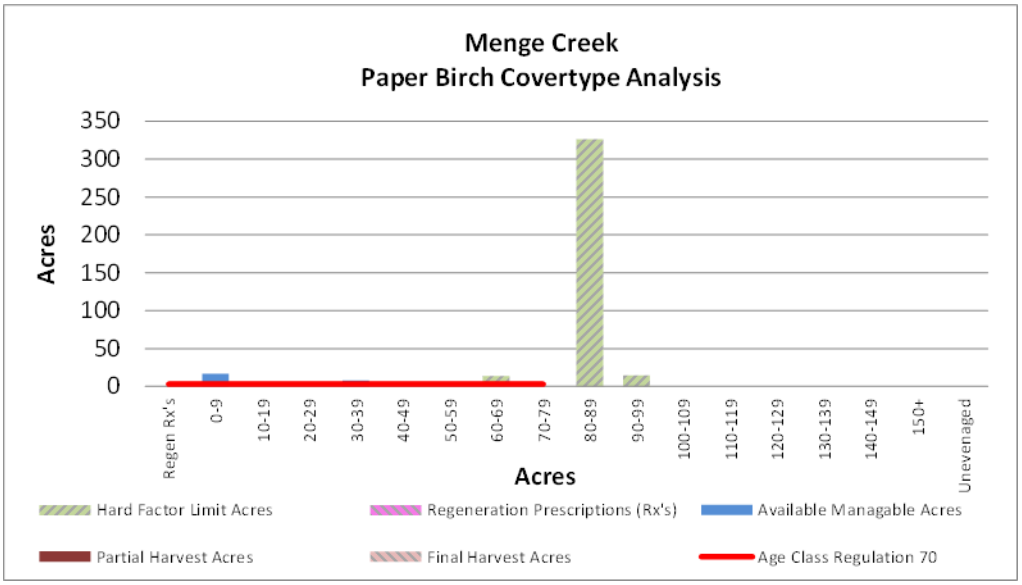

Figure 4.19.4. Graph of the age-class distribution for the paper birch cover type on the Menge Creek management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Maintain the paper birch cover type on the management area.

Long-Term Management Objective

- Harvest and regenerate paper birch stands using a 60-year rotation length with three acres per decade being harvested.

10-Year Management Objective

- Very limited if any harvesting will occur over this planning period.

**Other Forested Cover Types**

Current Condition

Other forested types make up 2,285 acres and are made up of mixed upland deciduous (1,039 acres), cedar (191 acres), upland conifers (190 acres), hemlock (179 acres), tamarack (161 acres), upland spruce/fir (129 acres), lowland conifer (96 acres), red pine (96 acres), oak (72 acres), upland mixed forest (63 acres), lowland deciduous (30 acres), lowland spruce/fir (24 acres), natural mixed pines (14 acres) and planted mixed pines (1 acre). Together these types make up about 30% of the management area.

Desired Future Condition

- Maintain the presence of the minor cover types within the management area.

Long-Term Management Objectives

- Manage minor cover types to maintain representation using appropriate silvicultural methods;
- Featured species habitat requirements will be taken in to consideration; and
- Maintain hemlock as it occurs.

10-Year Management Objectives

- Harvest those stands without harvest limitations adjacent to other planned harvest activities and where stand and habitat conditions indicate that harvesting is appropriate; and
- Expected harvests in these types will be less than 598 acres over this 10-year planning period.

**Other Non-forested Cover Types**

Current Condition

The following non-forested cover types are found on this management area: upland open/semi- open lands (228 acres – 3%), lowland open/semi-open lands (212 acres – 3%) and misc. other (water, local, urban) (106 acres – 1%).

Desired Future Condition

- Maintain current acreage in grasses and other non-forested cover types.

Long-Term Management Objective

- Permanent grass openings will be maintained with frequent low-intensity fires and mechanical treatments allowing native grasses and forbs to dominate.

10-Year Management Objective

- Grass -types will be treated for opening maintenance this decade as needed.

**4.19.2 – Featured Wildlife Species Management**

Wildlife management priorities in the Menge Creek management area include maintaining the hemlock and oak habitat components that offer high wildlife values, particularly for deer and bear. The protection of north-south movement corridors created by topography and tree characteristics is also important through protection of mesic conifer thermal cover. The primary focus of wildlife habitat management in the management area will be to address the habitat requirements identified for the following featured species: American marten, black bear and white-tailed deer. Based on the selected featured species, some of the most significant wildlife management issues in the management area are: habitat fragmentation; coarse woody debris; large living and dead standing trees (for cavities); mesic conifer; mature forest; mast (hard and soft); and deer wintering habitat. During this 10-year planning period, additional analyses to better define the spatial extent of priority areas (e.g., large suitable patches of contiguous habitat and dispersal corridors for marten) for featured species will be performed.

**American Marten**

The goal for marten is to maintain or increase suitable habitat and strive to identify, maintain and connect known populations to facilitate genetic exchange. Management during this planning period should focus on providing mature conifer forest conditions (e.g., coarse woody debris and large living cavity trees) across cover types in marten habitat.

Wildlife habitat specifications:

- Maintain a minimum of 30% canopy cover in key even-aged managed stands of northern hardwood and conifer stands as marten tend to avoid stands with less canopy cover. Retention patches should be oriented to minimize potential blow down.
- Discourage land transactions and management activities that facilitate additional fragmentation of marten habitat by identifying and maintaining corridors between large forested tracts (e.g., Huron Mountains, Craig Lake State Park, McCormick Wilderness, portions of The Nature Conservancy's Northern Great Lakes Forest Project and several smaller natural areas) west to Ottawa National Forest and south Chequamegon-Nicolet National Forest (WI) and Whisker Lake Wilderness.
- Provide late successional conifer-dominated stands in this management area.
- Provide for late successional mesic conifer-dominated stands in the area by extending the normal rotation length for white spruce and balsam fir cover types by 20 years.
- Retain down coarse woody debris present before cutting, and debris resulting from incidental breakage of tops and limbs in the general harvest area, except on skid trails and landings, to the extent feasible. Where coarse woody debris is lacking, increase both standing dead and down dead wood by leaving at least three secure large diameter (>14 inches in diameter at breast height) live trees to serve as future den trees, snags, coarse woody debris and logs on the ground per acre harvested.
- Limit biomass harvesting, whole tree chipping and limit firewood permits and retain the maximum residues in the Woody Biomass Harvesting Guidelines within this management area.

- Increase the within-stand component of mesic conifers in forested stands and mange to increase mesic conifer forest types by group or gap selective harvest. Consider under planting on suitable sites where a seed source is absent.

**Black Bear**

The western Upper Peninsula black bear goal is to maintain or improve habitat. Management for bear should focus on improving existing habitat (e.g., maintaining corridors, mast and refuge trees) in this management area.

Wildlife habitat specifications:

- Maintain or increase the oak cover type and within stand oak component of hardwood forests within the management area;
- Maintain or increase mast by providing forest clearings that promote food sources such as pin cherry, juneberry/serviceberry, hazel, raspberry, blackberry and blueberry;
- Minimize herbicide use that would be detrimental to mast production;
- Maintain lowland conifer and hardwoods along and around drainages, vernal pools and forested wetlands; and
- Maintain refuge tree species with rough bark for cubs to escape (e.g., white pine and hemlock).

**White-tailed Deer**

The western Upper Peninsula goals for white-tailed deer are to: 1) Maintain existing deer wintering complexes and 2) Expand the extent of areas suitable as winter deer habitat, especially in the medium and high snowfall zones. Management should focus on maintaining habitat quality in priority wintering complexes. DNR department procedure 32.22-07 states “Coniferous swamps are important as winter deeryards and shall be managed primarily for deer. The objective shall be to maintain them for this purpose and through commercial cuttings and silvicultural practices, improve these areas to provide winter cover and food for deer.” There is a complex relationship between deer abundance; available summer and winter habitat; timber management; and regeneration tree species, particularly white cedar and hemlock. It is recognized that meeting both timber management and deer goals presents challenges for the department and our stakeholders. Information on deer wintering complexes is currently being updated and new management guidelines are being developed. When completed, these will provide additional direction for managing these critical areas for white-tailed deer.

Wildlife habitat specifications for deer wintering complexes:

- Strive to maintain > 50% of the land area within deer wintering complexes in mixed or pure stands of cedar, hemlock, white and black spruce, white and natural red pine, balsam fir, mixed swamp conifer and mixed upland conifer-hardwood.
- In northern white cedar and hemlock cover types that are commonly occupied by deer during severe winters, especially in medium and high snowfall zones, maintain canopy closure of >65%.
- In deer wintering complexes in low snowfall areas, and within ¼-mile of severe-winter cover in the higher snowfall zones, write prescriptions that strive to maintain canopy closure of 40-65%, favoring cedar, hemlock, white spruce, black spruce, balsam fir and white pine.
- Provide winter forage in deer wintering complexes through stands of regenerating hardwood or brush, including preferred species of red maple, sugar maple, aspen, yellow birch, ashes, oaks, dogwood, crabapple, elderberry, high-bush cranberry, sumac and hazel.
- Enhance accessibility to winter browse within deer wintering complexes by maintaining mature mesic conifer components within upland hardwood stands or by maintaining or enhancing sheltered travel corridors between areas of conifer cover and browse.
- Provide spring break out areas by maintaining open hardwood stands on southern exposures and herbaceous openings adjacent to deer wintering complexes.
- When possible, timber harvests within deer wintering complexes should be carried out only during winter months and tops should be left. Chipping of non-bole wood and whole-tree harvesting in the deer wintering complexes should be avoided, but will be discussed on a case-by-case basis through the compartment review process.
- Harvests of cedar and hemlock may only be conducted when:
    - There is reasonable confidence of successful recruitment/regeneration of the cover types; or
    - There is a forest health issue (e.g., hemlock wooly adelgid); or
    - Part of an approved research project; or
    - Removal of selected trees will facilitate a reduction of harvest trails, landings, etc. to minimize soil sedimentation and possible soil compaction issues.

- Provide fall foods in the form of hard and soft mast, and provide dense escape cover or bedding areas in the form of early successional forests, brush and warm-season grasses that will encourage fall deer use in areas open to public hunting. Where habitat types are appropriate, increase diversity of hard mast by planting oak.

### 4.19.3 – Rare Species and Special Resource Area Management

All forest operations must be reviewed for potential conflicts between rare species and proposed forest operations following the guidance in "*DNR's Approach to the Protection of Rare Species on State Forest Lands*" (IC4172). This is especially important when listed species are present, when past surveys have indicated a possibility of their presence, or when appropriate habitat is available and the species is known to occur in the general region.

Past surveys have noted and confirmed four listed species as well as one natural communities of note occurring in the management area as listed in Table 4.19.2. Any established management guidelines will be followed. Further surveys for special species and natural communities will be carried out as a matter of course during the inventory process and opportunistically for special more focused surveys.

Table 4.19.2. Occurrence information for special concern, rare, threatened and endangered communities and species for the Menge Creek management area.

| Common Name | Scientific Name | Status | Status in Management Area | Climate Change Vulnerability Index (CCVI) | Confidence | Natural Community Association | Probable Cover Types | Successional Stage |
|---|---|---|---|---|---|---|---|---|
| **Natural Community** | | | | | | | | |
| Great Lakes marsh | | S3/G2 | Confirmed | | | | Lowland open/semi-open | N/A |
| **Birds** | | | | | | | | |
| Bald eagle | *Haliaeetus leucocephalus* | SC/G5/S4 | Confirmed | IL | Moderate | Bog | Lowland open/semi-open | N/A |
| | | | | | | Hardwood-conifer swamp | Lowland Mixed | Mid |
| | | | | | | Northern hardwood swamp | Black Ash | Late |
| | | | | | | Poor conifer swamp | Tamarack | Late |
| | | | | | | Floodplain forest | Lowland mixed | Mid |
| | | | | | | Dry northern forest | Jack Pine, Red Pine | Early |
| | | | | | | Dry-mesic northern forest | White Pine | Late |
| | | | | | | Mesic northern Forest | Northern Hardwood | Late |
| **Butterflies** | | | | | | | | |
| Henry's elfin | *Callophrys henrici* | T/G4/S1S2 | Confirmed | PS | Moderate | Oak-pine barrens | Oak | Mid |
| | | | | | | Hardwood-conifer swamp | Lowland Mixed | Mid |
| | | | | | | Northern hardwood swamp | Black Ash | Late |
| Red-disked alpine | *Erbia discoidalis* | *SC/G5/S2S3* | Confirmed | MV | Low | Bog | Lowland open/semi-open | N/A |
| | | | | | | Northern wet meadow | Lowland open/semi-open | N/A |
| | | | | | | Pine barrens | Jack Pine | Early |
| | | | | | | Muskeg | Lowland open/semi-open | N/A |
| | | | | | | Patterned fen | Lowland open/semi-open | N/A |
| | | | | | | Poor fen | Lowland open/semi-open | N/A |
| **Reptile** | | | | | | | | |
| Wood turtle | *Glyptemys insculpta* | SC/G4/S2S3 | Confirmed | MV | Moderate | Northern wet meadow | Lowland open/semi-open | N/A |
| | | | | | | Bog | Lowland open/semi-open | N/A |
| | | | | | | Rich conifer swamp | Tamarack | Late |
| | | | | | | Hardwood-conifer swamp | Lowland Mixed | Mid |
| | | | | | | Northern shrub thicket | Upland open/semi-open | N/A |
| | | | | | | Mesic northern forest | Northern Hardwood | Late |

Climate Change Vulnerability Index: EV – Extremely Vulnerable; HV – Highly Vulnerable; MV – Moderately Vulnerable; PS – Presumed Stable; and IL – Increase Likely.

Approximately 111.6 acres of potential old growth have been identified within the Menge Creek management area. These stands were identified for a broad range of reasons and were coded in the Operations Inventory database as Stand Condition 8. These stands area also special conservation areas until they are evaluated.

This management area has the Menge Creek coastal environmental area (71 acres) that is a high conservation value area as well as the Pequaming Great Lakes Marsh ecological reference area (161.8 acres), as shown in Figure 4.19.5, representing the Great Lakes marsh natural community type.

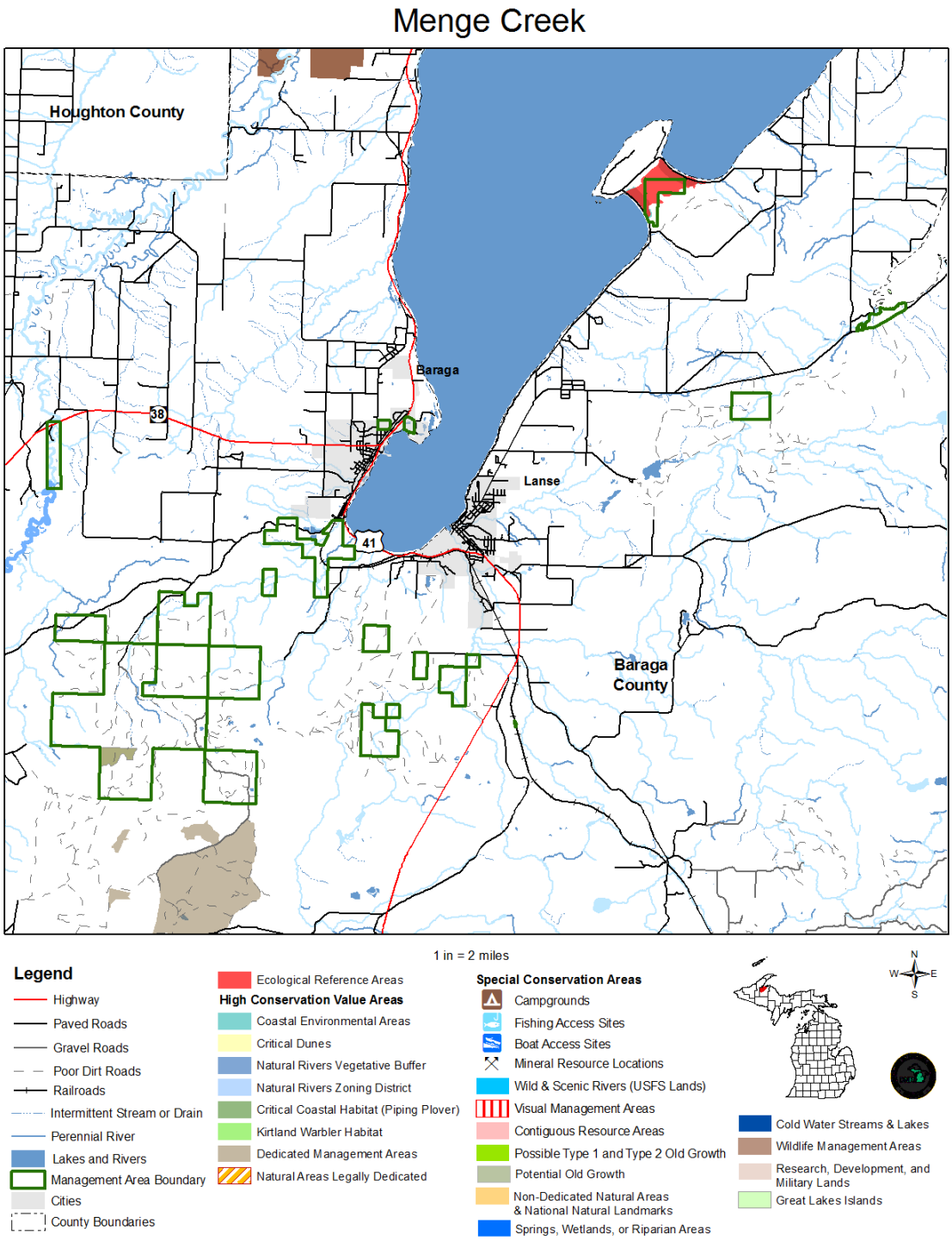


Figure 4.19.5. A map of the Menge Creek management area showing the special resource areas.

Management goals during this planning period:

Goal 1: To develop and maintain a list of rare, threatened, endangered and special concern species and natural communities for the management area through a continuous inventory and through opportunistic focused inventory surveys.

Objective 1-1: Field staff should be trained and aware of the identification characteristics and natural history of rare, threatened, endangered and special concern species.

Objective 1-2: Occurrences of rare, threatened, endangered and special concern species noted during the inventory process by inventory staff should be verified and added to the body of knowledge for the management area.

Goal 2: To evaluate the potential old growth areas by the end of this 10-year planning period.

Goal 3: To develop and maintain management plans for ecological reference areas on state forest land.
Objective 3-1: Complete ecological reference area planning by the end of this 10-year planning period.

**4.19.4 – Forest Health Management**

Although forest health issues span the entire landscape, some specific threats are more important in this management area due to the species composition, site quality or other factors. Some of the more important forest health pests in this area include white trunk rot of aspen, *Hypoxylon* canker and emerald ash borer.

When forest pests are detected, they are to be reported to the forest health specialist for treatment recommendations. The treatment of large outbreaks of forest pests will be coordinated on a state and regional level.

Several invasive exotic species of plants are thought to be located in the vicinity. When invasive species are detected, they will be reported to the forest health specialist and treatment options will be reviewed. Priority for treatment should be given to those species that threaten sensitive sites due to their location or growth characteristics and have population levels that may be successfully controlled. Following is a list of species of concern that been documented in or near this management area:

- Bell's honeysuckle
- European swamp thistle
- Glossy buckthorn
- Japanese barberry
- Japanese knotweed
- Purple loosestrife
- Spotted knapweed
- Tatarian honeysuckle.

**4.19.5 – Aquatic Resource Management**

Fisheries Division management unit biologists will review proposed forest management activities using the compartment review process and will consider the potential impact of proposed prescriptions upon riparian and aquatic values. Management prescriptions will be modified to account for riparian and aquatic values by applying the standards and guidance documents listed in the introduction to this plan section to the unique conditions specific to any given forest stand.

Prescription of riparian management zone widths greater than the minimum widths provided in IC4011 (*Sustainable Soil and Water Quality Practices on Forest Land*) must be justified and documented during the compartment review process.

Forested stands adjacent to designated high priority trout streams will specifically be managed to discourage beaver use in accordance with both DNR Policy and Procedure 39.21-20 Beaver Management and IC 4011. Designated high priority trout streams are identified in the Integrated Forest Monitoring Assessment and Prescription Geographic Decision Support Environment. Remove or discourage beaver populations on designated high priority trout streams.

High priority trout streams in this management area as shown in Figure 4.19.1.

**4.19.6 – Fire Management**

These areas are subjected to periodic high intensity stand replacing fires, perhaps more frequently that would normally be expected due to the proximity to the Baraga Plains. Fire return intervals were probably between 75 and 250 years, supporting development into long-lived pine communities. Fire suppression and harvesting practices have seen these areas trend toward northern hardwoods and aspen.

- All wildfires within this area are subject to appropriate initial attack response. No plans for modified suppression are considered at this time.
- Efforts to encourage oak and pine could be enhanced by management practices that use prescribed fire.

### 4.19.7 – Public Access and Recreation

This area has somewhat limited management and public access. Several snowmobile trails pass through this area as shown in Figure 4.19.1.

- Work to establish legal access for management and public use.

### 4.19.8 – Oil, Gas and Mineral Resources

Exploration and development for oil and gas has been limited to a few wells drilled in the eastern Upper Peninsula. No economic oil and gas production has been found in the Upper Peninsula.

Surface sediments consist of coarse-textured till, lacustrine (lake) sand and gravel and an end moraine of coarse-textured till. There is insufficient data to determine the glacial drift thickness. Sand and gravel pits are located in the management area, and there is good potential for additional pits.

The Precambrian Jacobsville Sandstone and Michigamme Formation subcrop below the glacial drift. The Jacobsville was previously used as a building stone.

An old iron mine is located a few miles to the southeast of this management area. Some metallic mineral exploration has occurred in the management area in the past and there may be potential.