

4.32 MA 32 – Waishkey Bay Management Area

Summary of Use and Management

Management in the Waishkey Bay management area (MA) will provide for forest-based recreational uses, enhance wildlife habitat and provide for timber products. The most important recreational facility within the management area is the snowmobile trail, which runs on the old railroad corridor through the management area. The trail connects Sault Ste. Marie with trail systems to the west and south and receives a lot of use. Vegetative management will emphasize balancing the age-class structure of even-aged cover types where possible. However, access to most of the state owned land is difficult and timber management activities will be significantly constrained. Expected issues in this 10-yr planning period include: introduced pests and diseases, such as emerald ash borer, increased recreational pressure and illegal trash dumping.

Introduction

The Waishkey Bay management area is located near the northern shoreline of Lake Superior in the eastern portion of the eastern Upper Peninsula, in Chippewa County. It has 2,698 acres of state-owned land. The primary attribute of the management area is the two small parcels of concentrated state land which are isolated from other management areas. Additional attributes which were important in identifying this management area include:

- The management area falls within the Niagaran Escarpment and Lake Plain Subsection 8.1 of the eastern Upper Peninsula ecoregion (Albert, 1995).
- The dominant landform consists of lacustrine silts and clays with lake formed sand ridges. Soils are very prone to erosion and tend to be acid.
- The area was cut over heavily when the mill in Waishkey Bay was operating. The present forest has a great deal of lowland types with white pine and paper birch on the ridges.
- When the Bay Mill and town burned in 1904, only the Native American residents remained. Fishing, blueberry picking and logging were important then and now. There are known prehistoric and historic sites in this management area.
- Recreational uses include: snowmobile trails on state and private lands, intensive use by bow hunters and firearm deer hunters, fishing and cross country skiing.
- There was an outbreak of emerald ash borer at Brimley State Park involving a quarantine, ash tree removal and subsequent monitoring.

This is a small management area comprised of two contiguous blocks with an old railroad bed connecting them. The management area is surrounded by private land, and access is somewhat limited. The management area falls within the Sault Forest Management Unit. The predominant cover types, acreages and projected harvest acres in the management area are shown in Table 4.32.1.

Table 4.32.1. Current cover types, acreages, projected harvest acres and projected ten-year cover type acreage for the Waishkey Bay management area, eastern Upper Peninsula ecoregion (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
Lowland Open/Semi-Open Lands	38%	1,015	0	1,015	0	0	1,015	0	0
Lowland Spruce/Fir	16%	443	45	398	154	0	443	44	0
Lowland Deciduous	14%	372	212	160	63	0	372	18	0
Aspen	14%	370	60	310	177	0	370	52	0
Paper Birch	9%	230	227	3	0	0	230	1	0
Upland Open/Semi-Open Lands	0%	5	0	5	0	0	5	0	0
Misc Other (Water, Local, Urban)	1%	15	0	15	0	0	15	0	0
Others	9%	248	45	203	65	16	248	19	42
Total	100%	2,698	589	2,109	459	16	2,698	134	42

Others include: white pine, cedar, tamarack, lowland conifers and jack pine.

Waishkey Bay

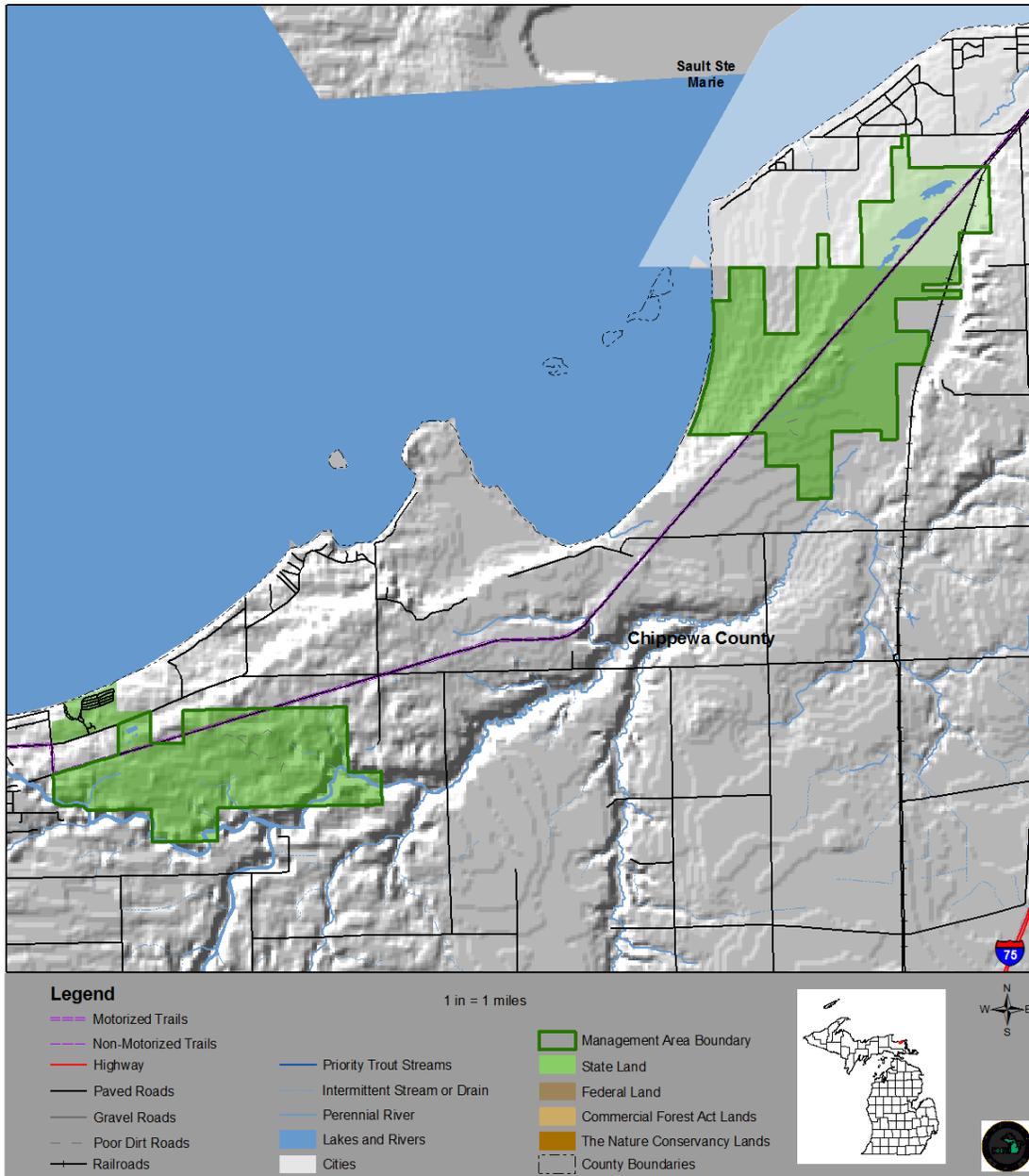


Figure 4.32.1. Location of the Waishkey Bay management area (dark green boundary) in relation to surrounding other ownerships, Whitefish Bay, Sault Ste. Marie and the town of Bay Mills.

4.32.1 Forest Cover Type Management Direction

The following sections contain information on vegetation management direction in the form of Desired Future Conditions, 10-Year Management Objectives and Long-Term Management Objectives for each of the major cover types or forest communities within the management area. This information applies to those portions of the forest where active management (i.e., timber harvest, prescribed fire, planting and mowing) will be conducted. In other portions of the state forest, passive management resulting in natural succession will achieve ecological objectives. While most stands have a variety of tree species and other vegetation, they are classified by the predominant species.

All of the following cover types are valued commercially for their timber products, ecologically as sources of habitat for numerous species, and for the variety of recreational opportunities they provide. Harvesting these cover types will provide for a continuous flow of forest products and values.

Section 4.32.1.1 Forest Cover Type Management – Lowland Open/Semi-Open Lands

Current Condition

Lowland open/semi-open lands occur on 1,015 acres (38%) of the management area (Table 4.32.1). This category is a combination of lowland shrub (738 acres), marsh (225 acres), treed bog (52 acres) and bog (zero acres). Some of these stands are found in low areas between small ridge dune features. These habitat types are important for several wildlife species including songbirds and moose.

Desired Future Condition

- Lowland open/semi-open lands will be maintained to provide wildlife habitat and recreational opportunities.

Long-Term Management Objectives

- In general, these stands will be maintained without active management to protect their ecological values.

Section 4.32.1.2 Forest Cover Type Management – Lowland Spruce/Fir

Current Condition

Lowland spruce/fir occurs on 443 acres (16%) of the management area (Table 4.32.1). Some harvest and regeneration work was done in the past, but there has been no recent activity (Figure 4.32.2).

Currently there are no acres of lowland spruce/fir with a final harvest prescribed. There are 45 acres of lowland spruce/fir that have site conditions limiting their harvest at this time. These hard factor limited acres have been removed from the total number of manageable acres available for harvest calculations. Stands unavailable to harvest will continue to experience natural processes (windthrow, flooding and senescence) resulting in a range of successional stages.

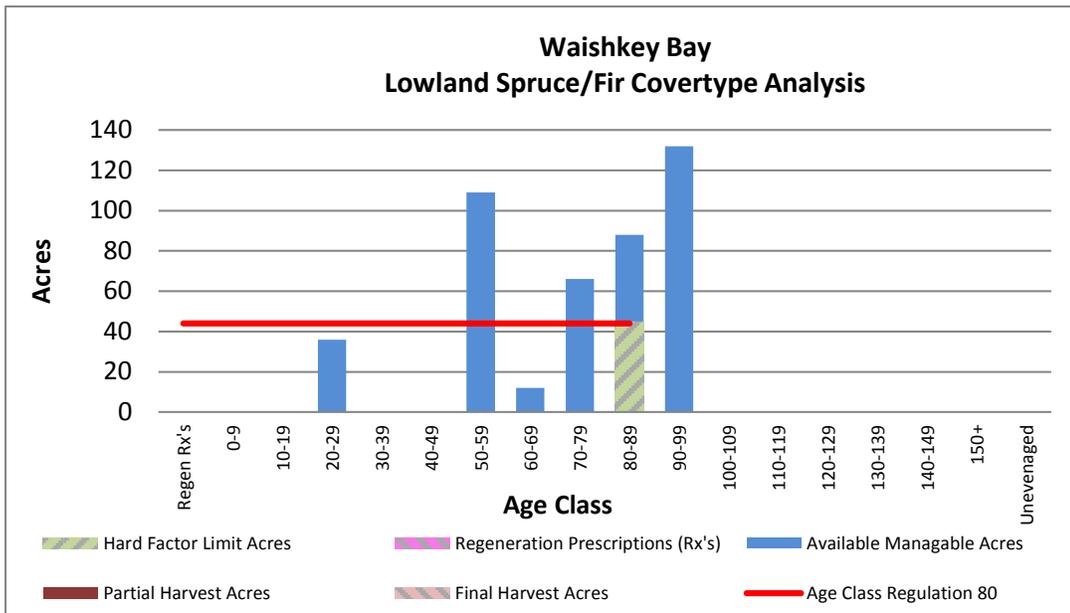


Figure 4.32.2. Age-class distribution of lowland spruce/fir in the Waiskey Bay management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Lowland spruce/fir stands will be maintained on operable sites through even-aged management with acres balanced between 0-89 years of age to provide for regulated harvest, wildlife habitat and recreational opportunities.

10-Year Management Objectives

- The 10-year projected final harvest of lowland spruce/fir is 154 acres to work toward balancing the age classes. The increase from the regulated amount is due to the current age class structure where there are no stands less than 20 years of age.

Long-Term Management Objectives

- Balance the age-class structure of available stands providing for a regulated harvest of approximately 44 acres per decade (red line in Figure 4.32.2).

Section 4.32.1.3 Forest Cover Type Management – Lowland Deciduous

Current Condition

Lowland deciduous stands occur on 372 acres (14%) of the management area (Table 4.32.1). A small portion of the cover type has been classified as uneven aged. There has been no recent harvest and regeneration work in this area (Figure 4.32.3). Lowland deciduous stands in this management area contain a large component of black ash. Emerald ash borer was found at nearby Brimley State Park. Follow Emerald Ash Borer Guidelines to salvage the trees.

Currently, there are no acres of lowland deciduous prescribed for harvest. There are 212 acres of lowland deciduous that have site conditions limiting their harvest at this time. These hard factor limited acres have been removed from the total number of manageable acres available for harvest calculations. Stands that are unavailable to harvest will continue to experience natural processes, resulting in a shift to late successional species. emerald ash borer may change the species composition of these stands.

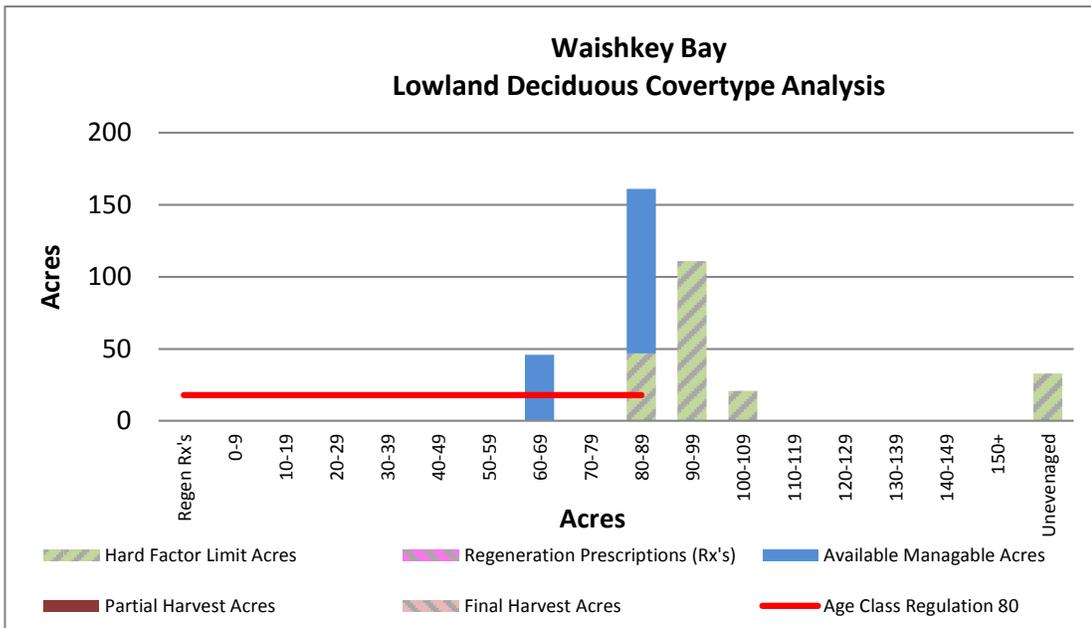


Figure 4.32.3. Age-class distribution of lowland deciduous in the Waiskey Bay management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Lowland deciduous stands will be maintained on operable sites through even-aged management with acres balanced between 0-89 years of age to provide for regulated harvest, available wildlife habitat and recreational opportunities.

10-Year Management Objectives

- The 10-year projected final harvest is 63 acres of lowland deciduous, with natural regeneration expected, to work toward balancing the age classes;
- The increase in harvest from the regulated amount is due to the current age class structure where there are no stands in younger age classes; and
- Follow Emerald Ash Borer Guidelines for harvesting of ash.

Long-Term Management Objectives

- Balance the age class structure of available stands providing for a regulated harvest of approximately 18 acres of lowland deciduous per decade.

Section 4.32.1.4 Forest Cover Type Management – Aspen

Current Condition

Aspen occurs on 370 acres (14%) of the management area (Table 4.32.1). Aspen is distributed throughout the management area in PARv and PARVAa Kotar habitat types (see appendix E). These stands are predominately made up of trembling aspen. There has been no recent harvest and regeneration work of aspen in this area (Figure 4.32.4).

Currently there are no acres of aspen with a harvest prescribed. There are 370 acres of aspen that have site conditions limiting their harvest this entry period. These hard factor limited acres have been removed from the total number of manageable acres available for harvest calculations. Aspen stands that are unavailable to harvest will continue to experience natural processes, resulting in a shift to late successional species.

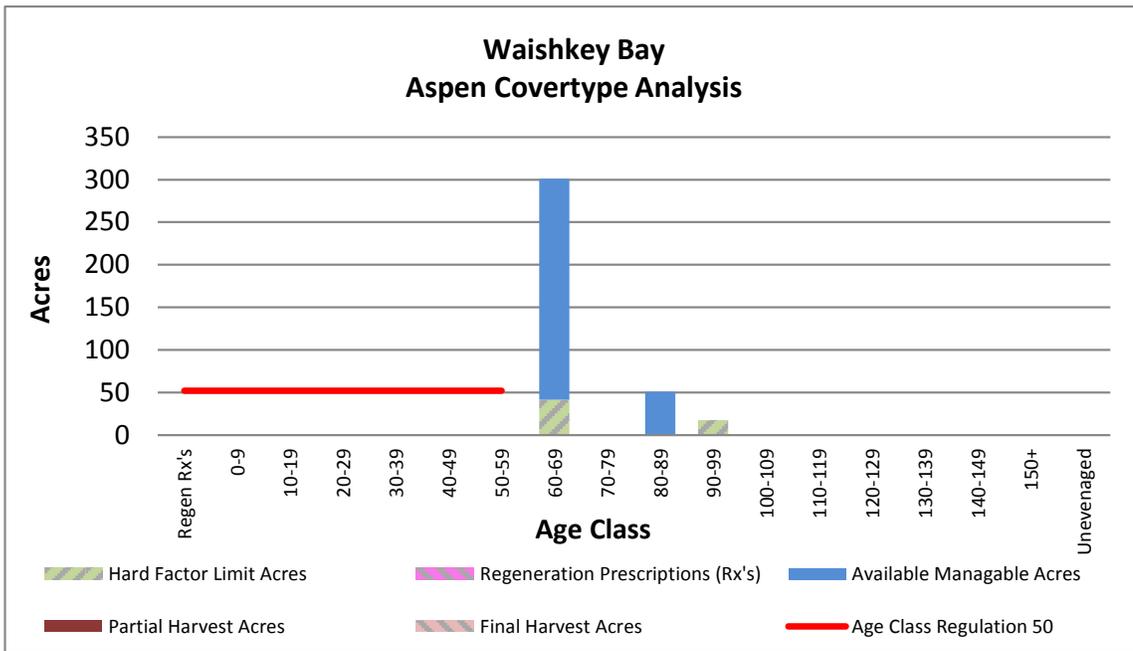


Figure 4.32.4. Age-class distribution of aspen in the Waishkey Bay management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Aspen will be maintained on operable sites through even-aged management with acres balanced between 0-59 years of age to provide for regulated harvest, wildlife habitat and recreational opportunities.

10-Year Management Objectives

- The projected 10-year final harvest of aspen is 177 acres to begin balancing the age classes of aspen. The increase in harvest from the regulated amount is due to the current age class structure where there are no stands in younger age classes.

Long-Term Management Objectives

- Balance the age-class structure of available stands providing for a regulated harvest of approximately 52 acres of aspen per decade.

Section 4.32.1.5 Forest Cover Type Management – Paper Birch

Current Condition

Paper birch stands occur on 230 acres (9%) of the management area (Table 4.32.1). Paper birch is distributed throughout the management area in PARv and PARVAa Kotar habitat types (see appendix E). There has been no recent harvesting and regeneration of paper birch (Figure 4.32.5).

Almost all of the paper birch stands in this management area have site conditions limiting their harvest. These hard factor limited stands have been removed from the total number of manageable acres available for harvest calculations. As the majority of the acres of paper birch are currently unavailable for harvest a regulated harvest is currently unattainable. If site conditions change allowing harvest determine the rotation regulation level. Paper birch in this area is often difficult to regenerate. Shelterwood or seed tree harvests may be followed by scarification, prescribed burning and/or seeding to ensure adequate regeneration. Inaccessible stands of paper birch will eventually succeed to more shade tolerant species.

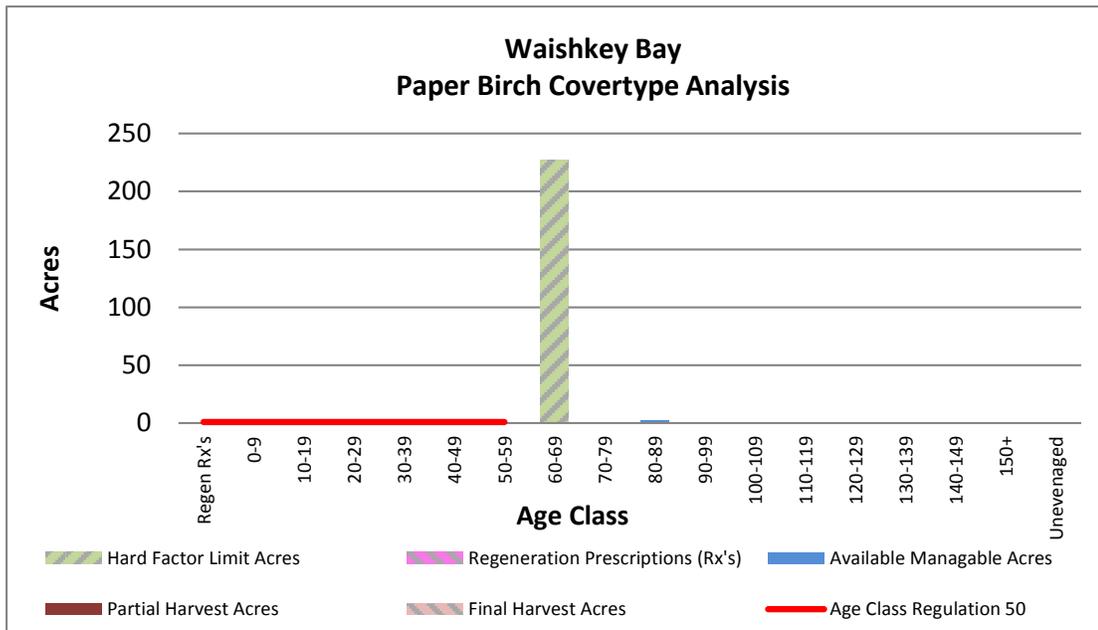


Figure 4.32.5. Age-class distribution of paper birch in the Waiskey Bay management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Paper birch stands will be maintained on operable sites through even-aged management with acres balanced between 0-59 years of age to provide for regulated harvest, wildlife habitat and recreational opportunities.

10-Year Management Objectives

- The 10-year projected final harvest of paper birch is zero acres.

Long-Term Management Objectives

- Maintain the paper birch cover type in this area.

Section 4.32.1.6 Forest Cover Type Management – Other Types

Current Condition

Other cover types total 248 acres (9%) and are spread across the management area (Table 4.32.1). They include: white pine (85 acres or 3%), cedar (72 acres or 2%), tamarack (40 acres or 1%), lowland conifers (27 acres or 1%) and jack pine (24 acres or 1%). The majority of these forested cover types are managed using even-aged harvesting systems and will be reforested by natural regeneration. White pine or mixed cover types may be thinned prior to final harvest at rotation age.

There are 45 acres of these other minor cover types have site conditions limiting their harvest at this time. These hard factor limited acres have been removed from the total number of manageable acres available for harvest calculations. Where stands are inaccessible early successional cover types will be changed through natural succession, thus slightly changing the cover type distribution.

Upland open/semi-open lands include three acres of herbaceous openland and two acres of bare/sparsely vegetated. There are 15 acres of “miscellaneous other” stands which includes water and roads.

Desired Future Condition

- These cover types may be managed on operable sites contributing to the compositional diversity of the landscape while providing for continual harvest, wildlife habitat and recreation opportunity.

10-Year Management Objectives

- The projected 10-year final harvest of other types is 65 acres; and
- The 10-year projected partial harvest of other types is 16 acres.

Long-Term Management Objectives

- Continue management of these other cover types to provide a sustainable yield of forest products and wildlife habitat.

4.32.2- Featured Wildlife Species

Wildlife management goals in this management area include: the protection of emergent wetlands, retention of large diameter soft hardwoods in harvested stands, older boreal forest conditions and retention of patches in boreal forest harvests.

American Bittern

The statewide goal for American bittern is to meet the Upper Mississippi Region Great Lakes Region Joint Venture population level as observed by the North American Breeding Bird Survey for Michigan. The eastern Upper Peninsula goal is to provide and maintain suitable habitat for American bittern. Management should focus on priority management areas with suitable shallow water marsh (hemi-marsh).

Wildlife habitat specifications:

- Manage priority wetlands in a hemi-marsh condition, with open water surrounded by emergent vegetation. Optimal hemi-marsh sites for bittern are > 10 acres with the emergent vegetation portions having average water depths of four inches and a 4:1 ratio of adjacent grassland to hemi-marsh.
- Maintain wetland/upland complexes of > 50 acres.
- Maintain water levels from the April through August breeding season.
- Buffer management activities at the edges of wetlands to protect marsh hydrology and limit the spread of invasive plant species.

Gray Jay

Gray jays serve as an umbrella species for other wildlife dependent upon boreal forests. The goal for gray jay in the eastern Upper Peninsula is to maintain or increase suitable habitat. Management should focus on maintaining representation of older age classes of timber as well as retention of important structural features within harvested stands in priority areas.

Wildlife habitat specifications:

- The primary goal is to maintain appropriate forest types (birch, lowland deciduous, fir, lowland conifer, lowland spruce/fir, tamarack and bogs) in the management area in a variety of age classes. Maintain 15% of the total acres in relevant cover types in older age classes (at least 20 years beyond “normal” rotation length for the cover type).
 - This can be accomplished either with stands that are already factor limited or by extending the rotation age. In this management area, older age classes (greater than 100 years) for gray jay habitat are being met by the large number of stands with site conditions that limit harvesting.
- Patches are preferred over single trees within timber harvest sale boundaries though it is beneficial to have both.
- Offset salvage harvests deemed necessary due to insect or disease or fire within the same cover type and age class (within the compartment, management area or eastern Upper Peninsula ecoregion) to minimize impacts on pileated woodpecker habitat. Total allowable harvest in these situations will be evaluated on a case-by-case basis.

Pileated Woodpecker

The goal for pileated woodpecker is to maintain or improve habitat. Management should focus on maintaining large diameter deciduous trees in timber sales in priority areas.

Wildlife habitat specifications:

- Identify and retain large (>15 inches in diameter at breast height) snags and cavity trees, coarse woody debris and reserve trees, as possible to ensure a sustainable supply of future cavity and foraging trees and associated coarse woody debris. Poorly formed trees and those damaged by natural disturbance or earlier harvests, particularly deciduous trees, are good candidates for future snags and cavity trees, trees damaged by beech bark disease that were not salvaged are contributing towards this goal. Large diameter aspen and other soft hardwoods are preferred reserve green trees.
- Even-aged managed stands: Leave scattered retention patches around some 18 inches in diameter at breast height or greater secure trees as a nucleus using the upper end of the Within Stand Retention Guidance.
- Uneven-aged managed stands: Retain a minimum of three secure cavity or snags per acre with one exceeding 18 inches in diameter at breast height. If snags or cavity trees are lacking, leave trees with defects of the maximum available size that will likely develop cavities.
- Salvage harvests deemed necessary to remove due to insect, disease or fire will be offset within the same cover type and age class (within the compartment, management area or ecoregion), to minimize impacts on pileated woodpecker habitat. Total allowable harvest in these situations will be evaluated on a case-by-case basis.

4.32.3 – Rare Species and Special Conservation Area Management

All forest operations must be reviewed for potential conflicts with rare species 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 or past surveys have indicated a possibility of their presence.

Past surveys have noted and confirmed two listed species and no natural communities of note occurring in the management area as listed in Table 4.32.2. 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 4.32.2. Occurrence information for special concern, rare, threatened and endangered communities and species for the Waishkey Bay 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
Birds								
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	SC/G5/S4	Confirmed	PS	Moderate	Pine barrens	Jack Pine	Early
						Oak-pine barrens	Oak	Mid
						Dry sand prairie	Upland open/semi-open	N/A
						Wet-mesic sand prairie	Upland open/semi-open	N/A
						Northern shrub thicket	Upland open/semi-open	N/A
Fish								
Lake sturgeon	<i>Acipenser fulvescens</i>	T/G3G4/S2	Confirmed	HV	Moderate	Great Lakes	Aquatic	N/A
						Rivers	Aquatic	N/A
						Mainstem streams	Aquatic	N/A

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

No high conservation value areas or ecological reference areas have been identified for this management area as illustrated in Figure 4.32.6.

The management goal during this planning period is:

- Document occurrences of rare, threatened, endangered and special concern species and natural communities for the management area through the inventory process or with occasional focused surveys.

Waiskey Bay

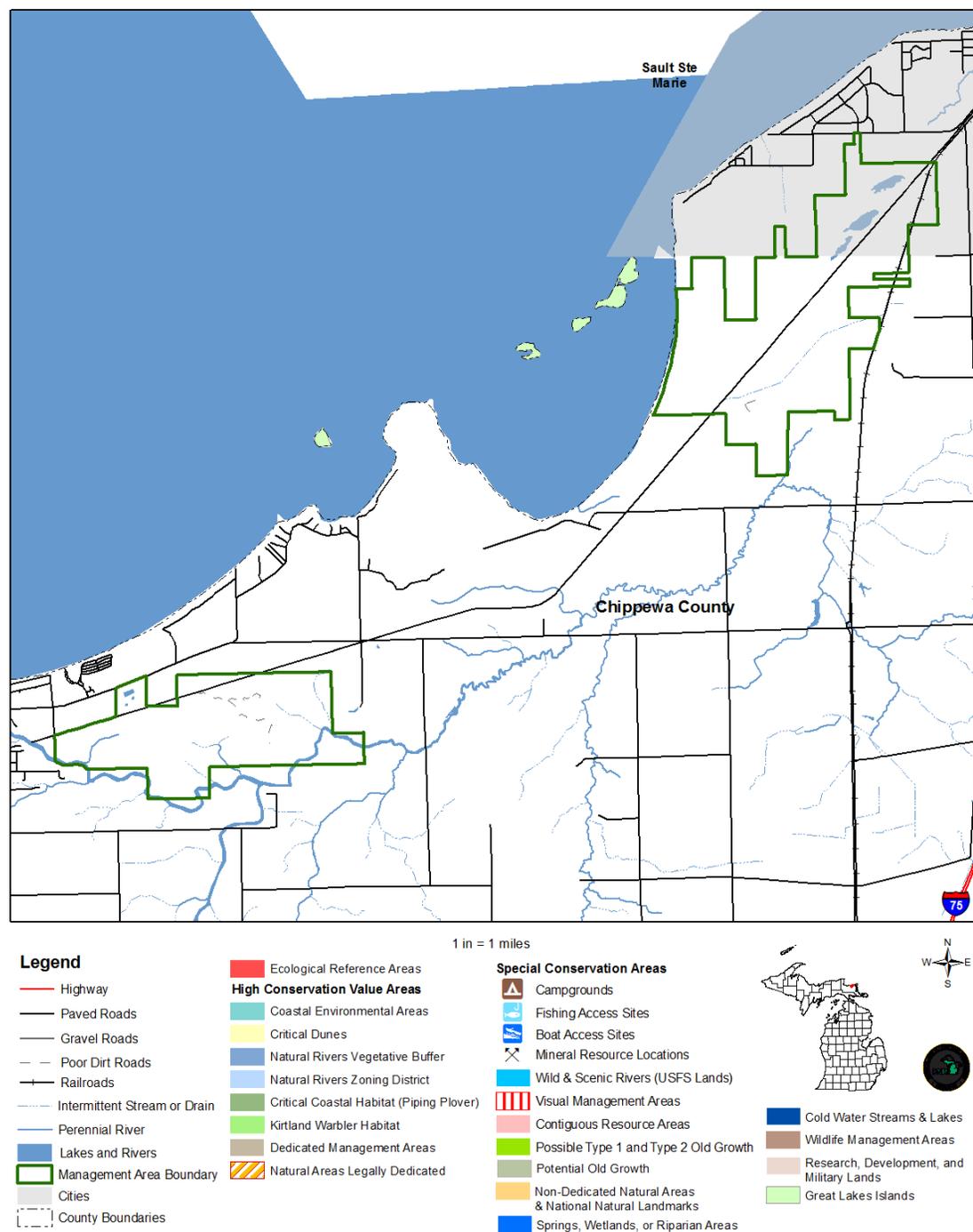


Figure 4.32.6. A map of the Waiskey Bay management area showing the special resource areas.

4.32.4 – 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 management area by major cover type include:

- Lowland conifers and lowland spruce/fir: spruce budworm;
- Lowland deciduous: emerald ash borer; and
- Aspen and lowland aspen/balsam poplar: white trunk rot and *Hypoxylon* canker.

For further information on forest health refer to Section 3.

Invasive Species

Invasive exotic species, specifically plants, may pose a significant forest health threat to forested and non-forested areas throughout the management area. No invasive plant species have yet been documented within the management area. Common buckthorn, Japanese knotweed, purple loosestrife and wild parsnip have been documented within a five-mile buffer of the management area (Table 4.32.3) and monitoring efforts should specifically look for new populations of this species. Evaluate eradication treatments of any new populations of invasive plant species found in the management area. Invasive species that merit eradication efforts are those species that threaten sensitive sites due to their location or growth characteristics and have population levels that may be successfully controlled.

Table 4.32.3. Invasive plant species within or near the Waishkey Bay management area (Data from the Michigan Invasive Plant Identification Network database).

Waishkey Bay - FRD Management Areas	Cases within FRD Areas	Cases within 5 Mile Buffer	Total number of cases	Total number of different Invasive Species
	0	8	8	4
Invasive Species within FRD Areas	Occurrences	Invasive Species within 5 Mile Buffer	Occurrences	
-	-	Common Buckthorn <i>Rhamnus cathartica</i>	2	
-	-	Japanese Knotweed <i>Fallopia japonica</i>	4	
-	-	Purple Loosestrife <i>Lythrum salicaria</i>	1	
-	-	Wild Parsnip <i>Pastinaca sativa</i>	1	

4.32.5 – Fire Management

Opportunities may exist to use prescribed fire to encourage paper birch regeneration in combination with commercial harvests.

4.32.6 – Public Access and Recreation

Road access throughout the management area is limited and a few of the roads that do exist have trash dumping issues.

Recreational facilities include a snowmobile trail on state and private lands.

The Algonquin Cross Country Ski Trail and Pathway is in the northeast portion of the area within the Sault Ste. Marie city limits. Grooming is supported by contributions from users and local businesses.

Other activities include intensive use by bow hunters and firearm deer hunters and bird watching, which is gaining in popularity.

4.32.7 – 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. There are no designated high priority trout streams identified in this management area in the Integrated Forest Monitoring Assessment and Prescription Geographic Decision Support Environment.

4.32.8 – Minerals

Surface sediments consist of lacustrine (lake) sand, gravel, clay and silt and peat and muck. There is insufficient data to determine the glacial drift thickness. Sand and gravel pits are not located in the management area and there is limited potential for additional pits.

The Precambrian Jacobsville Sandstone subcrops below the glacial drift. The Jacobsville was previously used as a building stone in the Upper Peninsula.

Exploration and development for oil and gas has been limited to a few wells drilled in the Upper Peninsula (14 in Chippewa County). No economic oil and gas production has been found in the Upper Peninsula.

Metallic mineral production is not supported by the geology given the depth to known metallic bearing formations.