

4.33 MA 33 – Whitefish Vermillion Point Management Area

Summary of Use and Management

Management in the Whitefish Vermillion Point management area (MA) will emphasize protecting the unique dune and swale complex near Whitefish Point and the other natural communities found here, sustainably produce various timber products and provide for forest-based recreational opportunities. Management activities in portions of the management area may be constrained by poor access and wetland cover types. Whitefish Point is recognized as being important habitat for migratory birds and has been designated by the American Bird Conservancy as being a globally Important Bird Area. Expected issues in this 10-year planning period are increased recreational pressure, introduced pests and diseases and non-native invasive species.

Introduction

The Whitefish Vermillion Point management area is located in the north-central part of the eastern Upper Peninsula, along Lake Superior in western Chippewa County. The management area has 44,010 acres of state-owned land. The primary attribute in this management area is recreation. Additional attributes which were important in identifying this management area include:

- The management area falls within Luce Subsection 8.2 of the eastern Upper Peninsula ecoregion (Albert, 1995).
- The dominant landform close to Whitefish Point consists of an extensive complex of alternating swales and sand-spits, sand dunes and beach ridges which support natural communities such as wooded dune and swale. The dune and swale complexes are unique assemblages of physical geography, soil types and vegetative components. Farther inland sandy outwash plains are more common.
- Lake Superior, which is on two sides of Whitefish Point, modifies the local climate and vegetation.
- The DNR recently purchased a large parcel of land near Crisp Point.
- Timber management, mainly red and jack pine harvesting, is important in the management area. Harvesting in some areas is limited by dune and swale topography and proximity to special management areas.
- Non-forested communities are dominated by peatlands, generally found in the south portions of the management area.
- Gathering of blueberries and cranberries is an important cultural use within the management area. There are several known archaeological sites. The nearby town of Paradise has an annual blueberry festival.
- This management area contains a critical coastal habitat high conservation value area and two non-dedicated natural area special conservation areas.
- Recreational opportunities include: camping, fishing, boating, bird watching and snowmobiling.

This management area contains several locally destinations that receive a large amount of recreational use, including the Great Lakes Shipwreck Historical Museum, a 33 acre parcel of land at the point managed and owned by the U.S. Fish and Wildlife Service as part of the Seney National Wildlife Refuge and The Michigan Audubon's Whitefish Point Bird Observatory. Tahquamenon Falls State Park is on the south border of the management area.

Whitefish Point management area forms a large, relatively contiguous block of state owned land. The management area falls within the Newberry Forest Management Unit. The predominant cover types, acreages and projected harvest acres in the management area are shown in Table 4.33.1.

Whitefish Vermillion Point

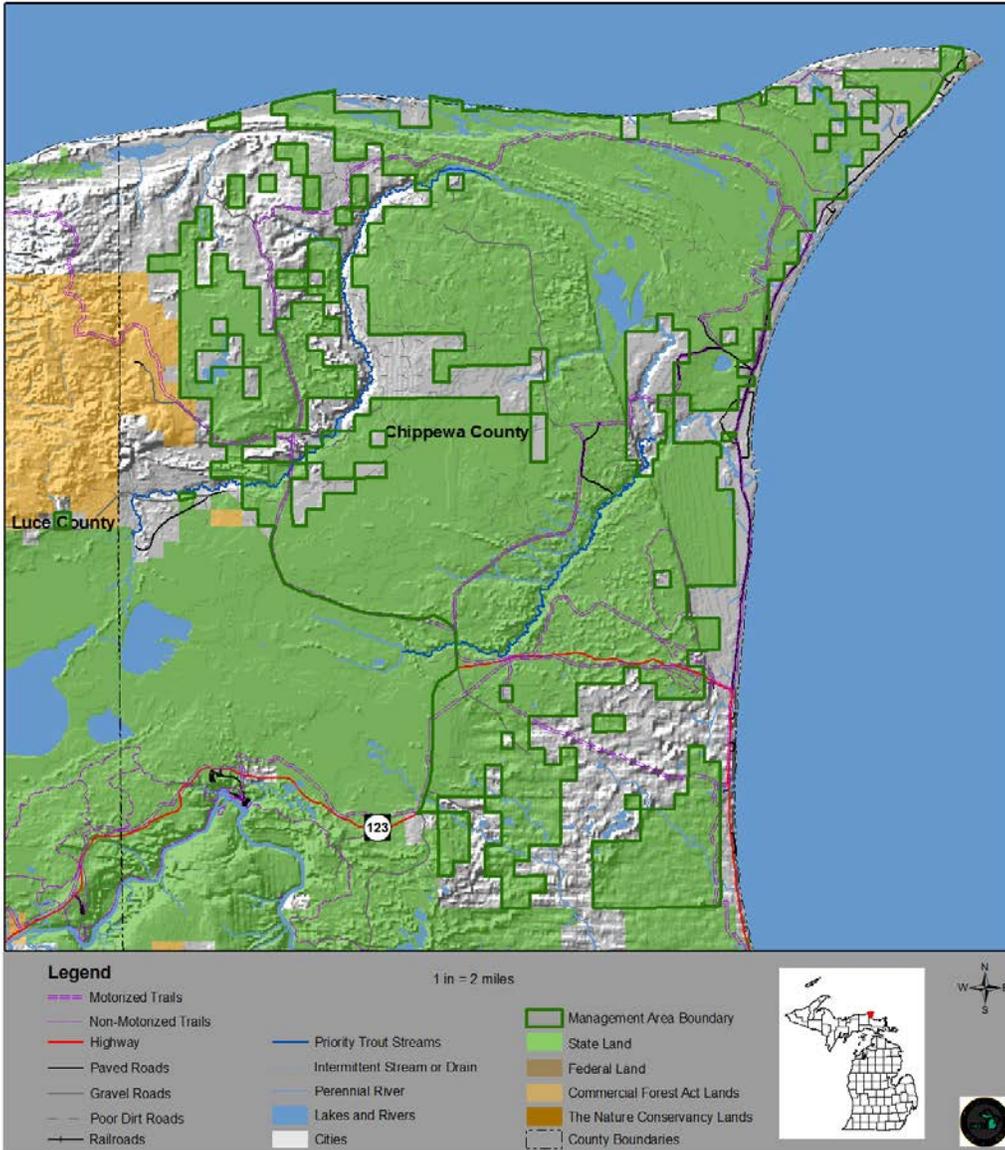


Figure 4.33.1. A map of the Whitefish Vermillion Point management area (dark green boundary) in relation to other ownerships, Tahquamenon Falls State Park (state land west of the management area and north of highway 123) and Lake Superior.

Table 4.33.1. Current cover types, acreages, projected harvest acres and projected ten-year cover type acreage for the Whitefish Vermillion Point management area, eastern Upper Peninsula ecoregion (2013 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	Final Harvest
Jack Pine	36%	17,126	1,071	16,055	480	0	17,126	2,294	0
Lowland Open/Semi-Open Lands	20%	9,697	0	9697	0	0	9,697	0	0
Northern Hardwood	7%	3,533	0	3533	0	1,655	3,533	0	1,655
Red Pine	6%	2,689	25	2664	296	881	2,689	296	1,093
Lowland Conifers	5%	2,641	10	2631	292	0	2,641	292	0
Aspen	3%	1,537	0	1537	110	0	1,537	256	0
Lowland Mixed Forest	2%	1,015	0	1015	113	0	1,015	113	0
Natural Mixed Pines	2%	874	338	536	49	209	874	49	209
Lowland Spruce/Fir	2%	828	25	803	89	0	828	89	0
White Pine	2%	817	0	817	74	336	817	74	378
Upland Open/Semi-Open Lands	1%	372	0	372	0	0	372	0	0
Misc Other (Water, Local, Urban)	7%	3,482	0	3482	0	0	3,482	0	0
Others	7%	3,428	217	3211	601	740	3,428	382	745
Total	100%	48,039	1,686	46,353	2,105	3,821	48,039	3,845	4,080

Others include: lowland spruce/fir, oak, upland spruce/fir, cedar, upland conifers, upland mixed forest, lowland mixed forest, hemlock, lowland aspen/balsam poplar, lowland deciduous, mixed upland deciduous and tamarack.

4.33.1 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 (e.g., 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 4.33.1.1 Forest Cover Type Management – Jack Pine

Current Condition

Jack pine occurs on 17,126 acres (36%) of the management area (Table 4.33.1). Most of the jack pine is in large pure stands of natural origin. Jack pine is distributed across the management area on sandy soils with Kotar habitat types of PARv and PVE (see Appendix E). Jack pine is well suited to these very dry, very poor-nutrient sites and provides a valuable timber resource in this management area. Jack pine in this management area has been consistently harvested and regenerated providing stands in all age classes (Figure 4.33.2). Natural regeneration following scarification has been effective in this area, followed by planting if necessary.

Currently there are no acres of jack pine with a final harvest prescribed. There are 1,071 acres of jack pine 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. Inaccessible stands of jack pine will eventually succeed to more shade tolerant species.

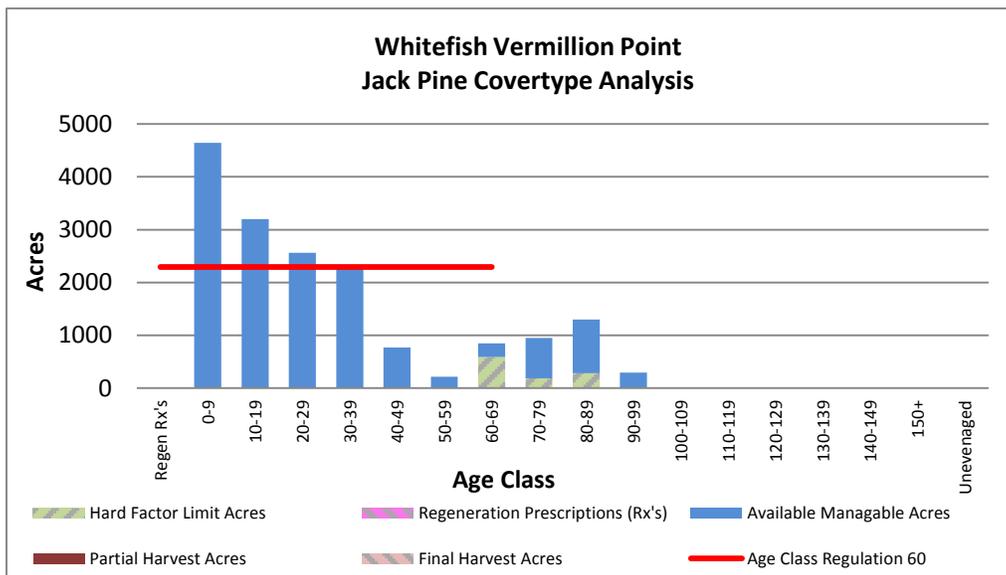


Figure 4.33.2. Age-class distribution of jack pine in the Whitefish Vermillion Point management area (2013 Department of Natural Resources inventory data).

Desired Future Condition

- Jack pine will be maintained on operable sites through even-aged management with acres balanced between 0-69 years of age to provide for continual harvest, wildlife habitat and recreational opportunities.

10-Year Management Objectives

- The projected 10-year final harvest of jack pine is 480. This reduction from the regulated amount is due to the large number of acres in the 0-9 age class.

Long-Term Management Objectives

- Maintain a lower acreage of over-mature stands to lessen the prevalence and severity of jack pine budworm outbreaks; and
- Balance the age classes of jack pine providing for a regulated harvest of approximately 2,294 acres per decade (red line in Figure 4.33.2).

Section 4.33.1.2 Forest Cover Type Management – Lowland Open/Semi-Open Lands

Current Condition

The management area contains a large amount of lowland open/semi-open lands totaling 9,697 acres (20%) (Table 4.33.1). This category is a combination of treed bog (4,555 acres), lowland shrub (3,681 acres), bog (754 acres) and marsh (707 acres). These cover types are valued ecologically as sources of habitat for numerous species of wildlife including moose. Cranberry bogs, marsh and treed bogs often occur within patterned peatlands. Most of the bog areas are in the southern portion of the management area.

Desired Future Condition

- Lowland open/semi-open lands will be retained in their current state to ensure an adequate level of wildlife habitat and recreational opportunity.

Long-Term Management Objectives

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

Section 4.33.1.3 Forest Cover Type Management – Northern Hardwood

Current Condition

Northern hardwoods occur on 3,533 acres (7%) of the management area (Table 4.33.1). Most of the hardwood stands are composed of red maple, sugar maple and beech, with white pine, hemlock and various other hardwood species mixed in. The stands generally fall into the Kotar habitat types of PArVAa, ATFD and AFPo (see Appendix E). Northern hardwood stands are distributed on lake plains and outwash plains and are dry to mesic-, poor to medium-nutrient sites. The majority of the stands have been managed using single tree selection, generally every 20 years, maintaining structural and species diversity to work towards an uneven-aged state. Where site quality is poor shelterwood and other even-aged harvesting systems will be considered. Stands that have been managed through even-aged systems are shown in the immature column in Figure 4.33.3. A large number of stands have not yet had basal area coded (not coded column in Figure 4.33.3). This is because northern hardwood stands within the area recently purchased at Crisp Point have not yet had field inventory completed.

Beech bark disease is prevalent throughout the management area and many stands have had or will have salvage harvests due to beech bark disease. Beech mortality and salvage harvesting has resulted in decreased stocking levels. Further selection harvesting in these stands will be delayed due to resultant lower than normal residual basal area.

Currently, there are no stands with harvests prescribed. There are no acres of northern hardwood that have site conditions limiting their harvest at this time.

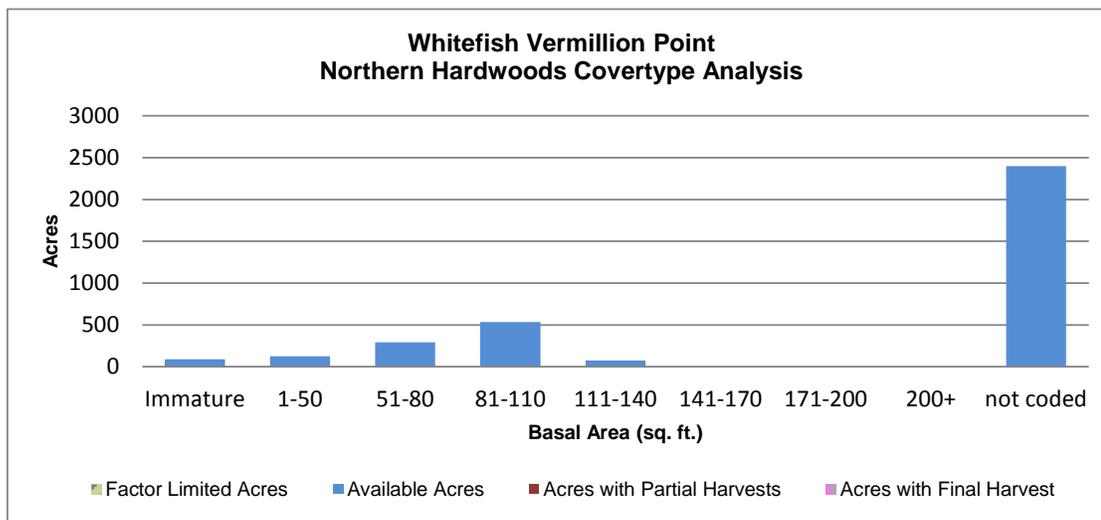


Figure 4.33.3. Basal area distribution of northern hardwood in the Whitefish Vermillion Point management area (2013 Department of Natural Resources inventory data).

Desired Future Condition

- Northern hardwoods will be maintained on operable sites generally by using individual tree selection harvesting which will provide uneven-aged composition and structurally diverse stands.

10-Year Management Objectives

- The 10-year projected partial harvest is 1,655 acres of northern hardwoods;
- Evaluate stands previously dominated by beech to determine the impact of beech bark disease on regeneration;
- Track beech regeneration in these stands; and
- To favor regeneration of other hardwood species consider herbicide applications of beech regeneration and planting of hard mast producing trees including oak and disease resistant beech.

Long-Term Management Objectives

- Select harvest northern hardwood stands on a 20-year cycle.

Section 4.33.1.4 Forest Cover Type Management – Red Pine

Current Condition

Red pine stands are found on 2,689 acres (6%) of the management area (Table 4.33.1). Red pine stands in this management area are of natural origin and are often mixed with white and jack pine. The majority of red pine stands have a Kotar habitat type of PArV (see Appendix E). These dry sites have the capacity to produce quality red pine. Many red pine stands are found on the steep, narrow, sandy ridges in the wooded dune and swale complexes. Throughout the remainder of the management area the red pine is managed intensively for timber production. Red pine stands have been periodically thinned followed by regeneration harvests generally using shelterwood or seed tree systems to promote natural regeneration. Planting of red pine is sometimes necessary to supplement natural regeneration.

Currently there is no acreage of red pine prescribed with either a final harvest or for partial harvest (Figure 4.33.3). There are 271 acres of red pine that have site conditions limiting their harvest and have been removed from the total number of manageable acres available for harvest calculations. Red pine remaining through biological maturity may be replaced by other climax species.

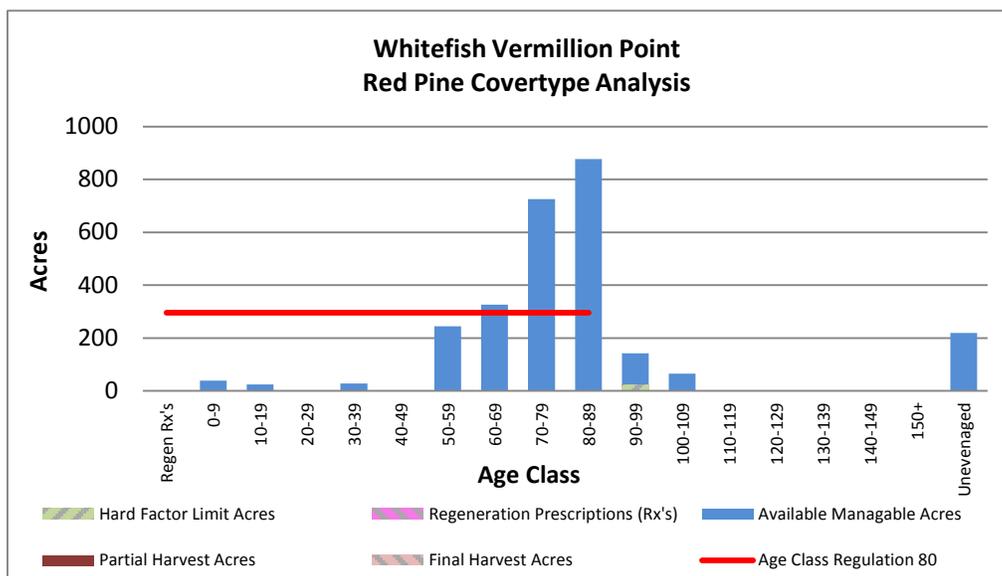


Figure 4.33.4. Age-class distribution of red pine in the Whitefish Vermillion Point management area (2013 Department of Natural Resources inventory data).

Desired Future Condition

- Red pine will be maintained and managed on operable sites through thinning until stand replacement harvest at economic maturity, approximately 80 years of age;
- Balancing acres between 0-89 years of age will provide for continual harvesting, wildlife habitat and recreational opportunities; and
- Red pine on inaccessible sites may be left until biological maturity at over 200 years of age.

10-Year Management Objectives

- The 10-year projected final harvest of red pine is 296 acres to work toward balancing the age classes of red pine; and
- The 10-year projected partial harvest of red pine is 881 acres.

Long-Term Management Objectives

- Balance the age-class structure of available red pine providing for a regulated harvest of approximately 296 acres per decade; and
- Stands will be periodically thinned until they meet silvicultural criteria.

Section 4.33.1.5 Forest Cover Type Management – Lowland Conifers

Current Condition

Lowland conifers occur on 2,641 acres (5%) of the management area (Table 4.33.1). A small portion of the cover type is listed as uneven-aged reflecting multi-storied stands. There has been no recent regeneration harvesting in this area (Figure 4.33.4).

Currently there are not any acres of lowland conifers prescribed for final harvest. There are 10 acres of lowland conifers 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. Lowland conifer stands in areas unavailable for harvest will be subject to natural processes, resulting in a range of successional stages.

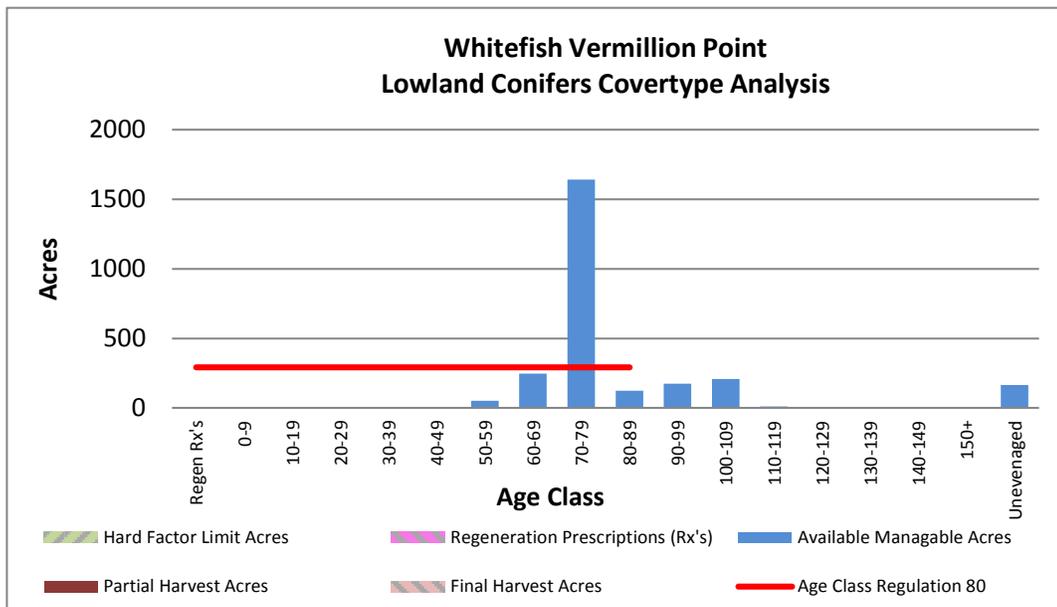


Figure 4.33.5. Age-class distribution of lowland conifers in the Whitefish Vermillion Point management area (2013 Department of Natural Resources inventory data).

Desired Future Condition

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

10-Year Management Objectives

- The 10-year projected final harvest of lowland conifers is 292 acres to work toward balancing the age classes in this cover type.

Long-Term Management Objectives

- Balance the age-class structure of available stands providing for a regulated harvest of 292 acres of lowland conifers per decade.

Section 4.33.1.6 Forest Cover Type Management – Other Types

Current Condition

There are many other cover types spread across the management area that have less than 5% of the total management area acres (Table 4.33.1). Aspen (1,537 acres or 3%), lowland mixed forest (1,015 acres or 2%), natural mixed pines (874 acres or 2%), lowland spruce/fir (828 acres or 2%) and white pine (817 acres or 2%). “Other types” are made up of forested cover types with 2% or less of the total acres and includes: paper birch, upland conifers, oak, cedar, upland spruce/fir, mixed upland deciduous, upland mixed forest, hemlock, lowland deciduous, tamarack and lowland aspen/balsam poplar.

With the exception of oak and pines, the majority of these forested cover types are managed using even-aged harvesting systems and will be reforested by natural regeneration. For even-aged management types, attempt to balance the acres where possible using standard rotation ages. White pine, oak and mixed cover types with high basal area may be thinned prior to final harvest depending on the species composition.

Upland open/semi-open lands (372 acres or 1%) is a combination of herbaceous openland, bare/sparsely vegetated, low-density trees and upland shrub. In addition there are 3,482 acres (7%) of "miscellaneous other" stands, which includes water, sand/soil and roads.

Almost 600 acres of these other minor cover types have site conditions limiting their harvest this entry cycle. These hard factor limited acres have been removed from the total number of manageable acres available for harvest calculations. Inaccessible stands of early successional species such as aspen and paper birch will eventually succeed to more shade tolerant species.

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 available wildlife habitat and recreational opportunities.

10-Year Management Objectives

- The projected 10-year final harvest is 110 acres of aspen, 113 acres of lowland mixed forest, 49 acres of natural mixed pines, 89 acres of lowland spruce/fir, 74 acres of white pine and 601 acres of other types; and
- The projected 10-year partial harvest is 209 acres of natural mixed pines, 336 acres of white pine and 740 acres of other types.

Long-Term Management Objectives

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

4.33.2 – Featured Wildlife Species

Whitefish Point is an important area for migratory birds. The surrounding land and water features create a natural corridor funneling thousands of birds directly to the point each spring and fall as they travel through the Great Lakes region. The majority of the shoreline within the management area is considered critical habitat for the federally endangered piping plover and other rare Great Lakes endemic species. During harvest, consideration of migrating and nesting bird species is of high importance. Retention, standing snags, coarse woody debris and appropriate timing of harvests are important management factors. Specific recommendations for other featured species include the retention of large diameter red and white pine, the retention of mature trees along lowland edges and providing connectivity of forest types.

Moose

The goal for moose in the eastern Upper Peninsula is to maintain or increase suitable habitat. Management for moose should focus on providing early successional browse adjacent to lowland conifer complexes, the maintenance of hemlock within stands and protecting willow, a valuable food source, along riparian and wetland edges.

Wildlife habitat specifications:

- Encourage early successional hardwood browse (in the 0-9 and 10-19 year-old age class) in close proximity to closed canopy lowland conifer swamps.
- Balance aspen age-class distribution to ensure a more sustainable supply of browse.
- Maintain or promote thermal refugia in harvested stands by retaining hemlock and other conifers.
- Increase mesic conifer (e.g., hemlock, white pine, red pine and upland spruce-fir) component on state forests by:
a) Retaining a larger percentage of mesic conifer during harvests; b) Using silvicultural practices that encourage the regeneration of mesic conifer; and c) Where desired/feasible, under planting hemlock, white pine and white spruce in hardwood-dominated stands on suitable sites without a seed source. Increase the percentage of mesic conifers, where suitable, across the landscape by 10% during this planning cycle.
- Willow is an important browse species, as are submergent and emergent aquatic vegetation associated with summer feeding areas. Ensure sustainable supplies of each.

Piping Plover

The statewide goal for the Great Lakes piping plover is to maintain a breeding population of a minimum of 100 nesting pairs. In the eastern Upper Peninsula, management should focus on protecting and improving critical habitat on occupied shoreline, and throughout designated critical habitat.

Wildlife habitat specifications:

- At known breeding sites work with partners to:
 - Limit human activity near nests;
 - Construct predator exclosures around nests; and
 - Control avian and mammalian predators as needed.
- In other critical habitat, support land acquisitions and conservation easements.
- At active sites, support public education and increased awareness to help avoid disturbance to nesting birds.
- Address/discourage illegal off-road vehicle activity on Great Lakes shorelines.

Red Crossbill

In the eastern Upper Peninsula, the goal for red crossbill is to maintain or increase habitat. State forest management should focus on maintaining mature and over mature seed producing trees in priority areas.

Wildlife habitat specifications:

- Maintain a minimum of 15% of the total acres of appropriate cover types (upland spruce/fir, upland conifers, natural mixed pine and natural red and white pine) in the management area for red crossbill in a mature forest condition (e.g., >150 years for red pine, > 130 years for white pine and > 80 years for white spruce).
- This can be accomplished with existing factor-limited stands or alternatively by extending the rotation length of these types to 150, 130 and 80 years respectively. In this management area older age classes for red crossbill habitat are being met by a large number of stands with site conditions that limiting harvesting.
- Retain large mature and over mature red pine, white pine and white spruce in shelter-wood and seed tree cuts.
- Evaluate the management area for the establishment of core tracts of old (greater than 100 years old) pine stands in biodiversity stewardship areas or Type 1 or Type 2 old growth.

Spruce Grouse

The goal for spruce grouse in the eastern Upper Peninsula is to maintain or improve habitat. Management should focus on retention of mixed conifers on riparian/lowland edges, the increase of in stand species diversity and landscape level planning to ensure populations are not isolated.

Wildlife habitat specifications:

- In jack pine harvests leave mixed conifer and/or jack pine retention strips of mature trees along riparian corridors and lowland margins as well as along upland edges.
- Maintain spruce seed trees through retention, especially at lowland margins.
- Maintain or increase diversity of conifer stands by implementing seed tree/shelterwood prescriptions and limiting the use of herbicides, especially along lowland edges.
- Large clearcuts may isolate populations of spruce grouse so landscape level planning must take into account this species' need for low-density mixed-conifer travel corridors to connect suitable stands.
- Ensure black spruce recruitment/regeneration is reliable where harvested. Monitoring should be required to ensure we are getting desired results from management.

4.33.3 – 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 fifteen listed species as well as three natural communities of note occurring in the management area as listed in Table 4.33.2. 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.

Special conservation areas include: cold water streams and lakes, high priority trout streams (Figure 4.33.1), the Tahquamenon Scenic Heritage Route, Tahquamenon State Park Visual Management Area and Marsh Lakes (31 acres) and Vermillion Point (112 acres) non-dedicated natural areas (Figure 4.33.6). Concentrated recreation area special conservation areas (boat access sites and state forest campgrounds) are listed in the Recreation section 4.33.6 below.

The majority of the shoreline within the management area (Figure 4.33.6) is within a high conservation value area for critical coastal habitat for the federally endangered piping plover and other rare Great Lakes endemic species (see Table 4.33.2). A Director's Order is in place to help protect nesting plovers and other shorebirds.

In the southeast corner of the management area there is a four-acre patterned fen ecological reference area (Figure 4.33.6). Ecological reference areas will be managed to enhance and protect their natural vegetative and associated wildlife communities by an ecological reference area-specific management plan.

Management goals during this planning period are:

- 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.
- Evaluate all potential Type 1, potential Type 2 and potential old growth areas to determine their status as a special resource area.

Table 4.33.3. Occurrence information for special concern, rare, threatened and endangered communities and species for the Whitefish Vermillion Point 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 Communities								
Muskeg		S3/G4G5	Confirmed				Lowland open/semi-open	N/A
Patterned fen		S2/GU	Confirmed				Lowland open/semi-open	N/A
Wooded dune and swale complex		S3/G3	Confirmed				Upland open/semi-open	N/A
Birds								
American bittern	<i>Botaurus lentiginosus</i>	SC/G4/S3-4	Confirmed	MV	Very High	Great Lakes marsh	Lowland open/semi-open	N/A
						Emergent marsh	Lowland open/semi-open	N/A
						Coastal plain marsh	Lowland open/semi-open	N/A
						Northern wet meadow	Lowland open/semi-open	N/A
						Southern wet meadow	Lowland open/semi-open	N/A
						Lakeplain wet prairie	Lowland open/semi-open	N/A
						Lakeplain wet-mesic prairie	Lowland open/semi-open	N/A
						Wet-mesic sand prairie	Lowland open/semi-open	N/A
						Wet prairie	Lowland open/semi-open	N/A
						Northern fen	Lowland open/semi-open	N/A
						Poor fen	Lowland open/semi-open	N/A
						Coastal fen	Lowland open/semi-open	N/A
Piping plover	<i>Charadrius melodus</i>	LE/E/G3/S1	Confirmed	MV	Moderate	Open dunes	Upland open/semi-open	N/A
Bald eagle	<i>Haliaeetus leucocephalus</i>	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
Osprey	<i>Pandion haliaetus</i>	SC/G5/S2-3	Confirmed	PS	Low	Coastal fen	Lowland open/semi-open	N/A
						Northern hardwood swamp	Black Ash	Late
						Floodplain forest	Lowland Mixed	Mid
						Hardwood-conifer swamp	Lowland Mixed	Mid
Butterfly								
Hoary comma	<i>Polygona gracilis</i>	SC/G5/S3	Confirmed	HV	Low	Boreal forest	Upland & Lowland Sp/F	Mid
Moth								
Dune cutworm	<i>Euxoa aurulenta</i>	SC/G5/S1S2	Confirmed	PS	Very High	Wooded dune & swale complex	Upland open/semi-open	N/A
						Open dunes	Upland open/semi-open	N/A
						Sand and gravel beach	Upland open/semi-open	N/A
						Great Lakes barrens	Upland open/semi-open	N/A
Dragonfly								
Incurvate emerald	<i>Samatoclara incurvata</i>	SC/G4/S1S2	Confirmed	MV	Very High	Headwater Stream	Aquatic	N/A
						Rich conifer swamp	Tamarack	Late
						Bog	Lowland open/semi-open	N/A
						Patterned fen	Lowland open/semi-open	N/A
						Northern fen	Lowland open/semi-open	N/A
						Coastal fen	Lowland open/semi-open	N/A
Ebony boghaunter	<i>Williamsonia fletcheri</i>	SC/G4/S1S2	Confirmed	MV	Low	Inland lake	Lowland open/semi-open	N/A
						Bog	Lowland open/semi-open	N/A
						Northern fen	Lowland open/semi-open	N/A
						Patterned fen	Lowland open/semi-open	N/A
						Poor fen	Lowland open/semi-open	N/A
						Prairie fen	Lowland open/semi-open	N/A
						Muskeg	Lowland open/semi-open	N/A
						Hardwood-conifer swamp	Lowland Mixed	Mid
						Inundated shrub swamp	Lowland open/semi-open	N/A
						Coastal fen	Lowland open/semi-open	N/A
Insect								
Lake Huron locust	<i>Trimerotropis huroniana</i>	T/S2S3/G2G3	Confirmed	MV	Very High	Great Lakes barrens	Upland open/semi-open	N/A
						Open dunes	Upland open/semi-open	N/A
Reptile								
Wood turtle	<i>Glyptemys insculpta</i>	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
Plants								
Douglas's hawthorn	<i>Crataegus douglasii</i>	SC/G5/S3S4	Confirmed			Volcanic bedrock glade	Upland open/semi-open	N/A
						Volcanic bedrock lakeshore	Upland open/semi-open	N/A
						Boreal forest	Upland & Lowland Sp/F	Mid
						Mesic northern forest	Northern Hardwood	Late
						Northern bald	Upland open/semi-open	N/A
						Open dunes	Upland open/semi-open	N/A
						Sand and gravel beach	Upland open/semi-open	N/A
						Sandstone bedrock lakeshore	Upland open/semi-open	N/A
						Volcanic cliff	Upland open/semi-open	N/A
						Volcanic cobble shore	Upland open/semi-open	N/A
						Volcanic lakeshore cliff	Upland open/semi-open	N/A
American dune wild-rye	<i>Leymus mollis</i>	SC/G5/S3	Confirmed			Open dunes	Upland open/semi-open	N/A
American shore-grass	<i>Littorella uniflora</i>	SC/G5/S2S3	Confirmed			Submergent marsh	Lowland open/semi-open	N/A
Dwarf raspberry	<i>Rubus acaulis</i>	E/G5T5/S1	Confirmed			Northern fen	Lowland open/semi-open	N/A
						Patterned fen	Lowland open/semi-open	N/A
						Poor fen	Lowland open/semi-open	N/A
Lake Huron pansy	<i>Tanacetum huronense</i>	T/G5T4T5/S3	Confirmed			Open dunes	Upland open/semi-open	N/A
						Limestone cobble shore	Upland open/semi-open	N/A
						Wooded dune & swale complex	Upland open/semi-open	N/A

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

Whitefish Vermillion Point

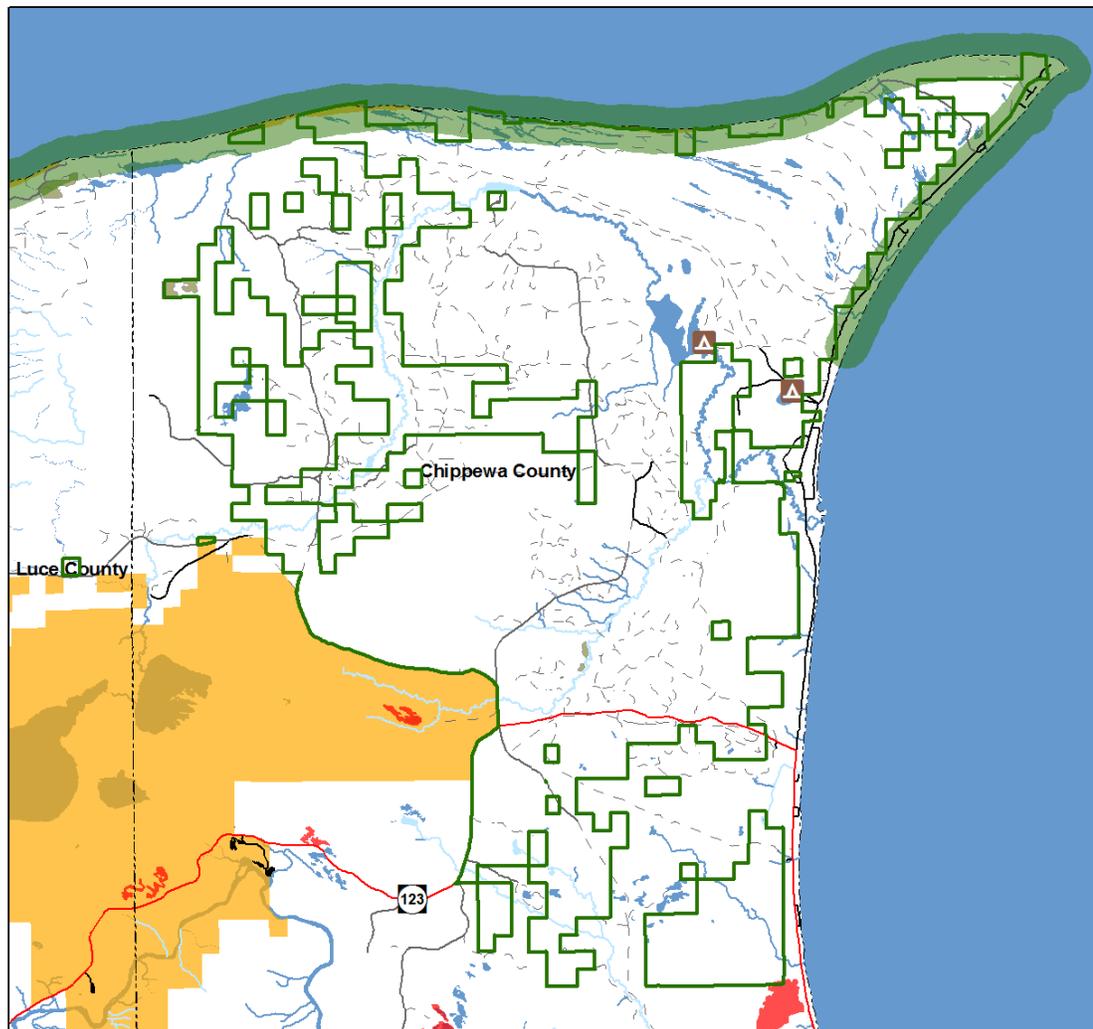


Figure 4.33.6. A map of the Whitefish Vermillion Point management area showing the special resource areas.

4.33.4 – 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:

- Red and jack pine: jack pine budworm, white grubs, red-headed pine sawfly, pine engraver and *Scleroderris* canker; and
- Lowland conifers: spruce budworm, eastern larch beetle and larch casebearer.

For further information on forest health refer to Section 3.

Invasive Species

Invasive exotic species, specifically plants, may pose a 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. Garlic mustard and Japanese knotweed have been documented within a five-mile buffer of the management area (Table 4.33.3) 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 4.33.3. Invasive plant species within or near the Whitefish Vermillion Point management area (Data from the Michigan Invasive Plant Identification Network database).

Whitefish Vermillion Point - FRD Management Areas	Cases within FRD Areas	Cases within 5 Mile Buffer	Total number of cases	Total number of different Invasive Species
	0	2	2	2
Invasive Species within FRD Areas	Occurrences	Invasive Species within 5 Mile Buffer	Occurrences	
-	-	Garlic Mustard (<i>Alliaria petiolata</i>)	1	
-	-	Japanese Knotweed (<i>Fallopia japonica</i>)	1	

4.33.5 – Fire Management

Wooded dune and swale communities dominate much of this shoreline management area. With varying mixtures of red, white and jack pine and the alternating open and forested swales, individual fires only infrequently impacted large areas. Frequency of stand replacement fires was very low. Farther from the shoreline, fires on dry sandy soils were less frequent than expected due to lake effect on the humidity regime. In the last 40 years, only three prescribed burns have been proposed within the management area. Only one has been completed, 26 acres of slash reduction burned in September of 2004.

- In 2009, Whitefish Township received a Community Wildfire Protection Planning grant. The state park provides access to a large number of forest recreational users. The facilities at Whitefish Point and in Paradise also provide opportunities to provide prevention messages to forest users.
- This management area falls within the DNR Newberry protection area. The Whitefish Zone Dispatch plan calls for aggressive initial attack based on current fire danger. The adjacent Tahquamenon Falls State Park has a modified suppression plan based on fuels, values at risk and expected fire danger.

4.33.6 – Public Access and Recreation

Due to landforms and private parcels, access is somewhat limited near Whitefish Point.

Additional roads and trails should be carefully evaluated so as not to impact the more fragile sites within this management area. Illegal off-road vehicle use, particularly on the Lake Superior shoreline, is a concern due to the critical habitat for piping plovers.

Recreational facilities include: snowmobile trails (Figure 4.33.1), Andrus Lake State Forest Campgrounds (Figure 4.33.6), and the Shell Drake Dam and Whitefish Point Harbor boating access sites.

This area is a destination for winter snowmobilers as well as summer tourists. Hunting, trapping, blueberry picking, kayaking, beach combing, fishing, bird watching and other wildlife observation are forms of recreation within this management area.

4.33.7 - 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. The Betsy River system is designated as a high priority trout stream in this management area and the details are shown in the Integrated Forest Monitoring Assessment and Prescription Geographic Decision Support Environment and in Figure 4.33.1.

4.33.8 – Minerals

Surface sediments consist of lacustrine (lake) sand and gravel, an end moraine of coarse-textured till and peat and muck. 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 sites on the uplands.

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.