4.3 Brampton Lake Plain Management Area

Summary of Use and Management

Vegetative management in the Brampton Lake Plain management area (MA) (Figure 4.3.1) 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 and red pine; maintaining the presence of minor cover types on the landscape; and maintaining non-forest vegetation types. Wildlife management objectives include balancing the aspen age-class distribution and enhancing the conifer component of mixed stands. 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 Brampton Lake Plain management area is on a lake plain in west-central Delta County. The state forest covers about 6,000 acres and is mostly contiguous. The management area is dominated by the aspen, red pine and cedar cover types. Other attributes that played a role in the definition of this management area include:

- Dominated by two natural communities: dry-mesic northern forests and poor conifer swamps;
- Mid-range in site quality;
- The proximity to the communities of Gladstone and Escanaba, this area is heavily used for hunting, motorized and non-motorized forest recreation (biking, skiing and hiking);
- Provides multiple benefits including forest products and dispersed recreational activities; and
- Provides a variety of fish and wildlife habitat;

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 Brampton Plains management area are shown in Table 4.3.1.

Table 4.3.1. Summary of cover types, composition, limited factor area, manageable area and projected harvest area for the Brampton Plains 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	30%	1,806	107	1,699	366	0	1,806	283	0
Red Pine	26%	1,539	188	1351	435	574	1,539	150	778
Cedar	10%	589	0	589	0	0	589	37	0
Northern Hardwood	8%	487	3	484	0	75	487	0	123
Lowland Conifers	8%	482	386	96	30	0	482	11	0
Upland Open/Semi-Open Lands	3%	171	0	171	0	0	171	0	0
Lowland Open/Semi-Open Lands	3%	156	0	156	0	0	156	0	0
Misc Other (Water, Local, Urban)	0%	26	0	26	0	0	26	0	0
Others	13%	778	134	644	187	20	778	78	49
Total		6,034	818	5,216	1,018	669	6,034	559	950

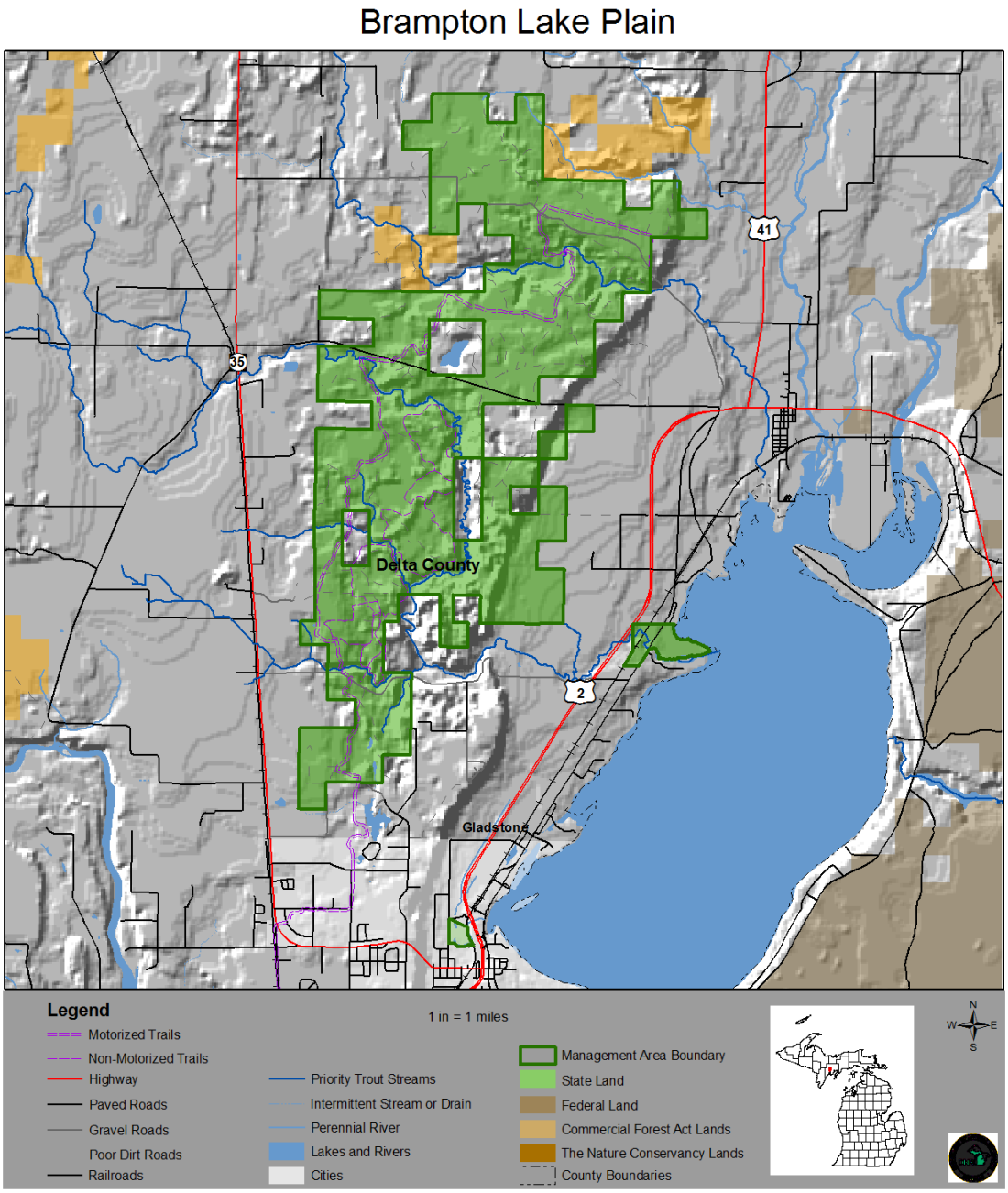

Figure 4.3.1. A map of the Brampton Plain management area (dark green boundary) in relation to surrounding state forest and other lands in Delta County, Michigan.

4.3.1 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 Brampton Plains 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 1,806 acres (30%) of the state forest land in this management area (Table 4.3.1) and is poorly distributed across age classes (Figure 4.3.2). Aspen is growing on dry-mesic sandy soils, which are productive sites for the species. Aspen will be managed on a 50 year rotation to a balanced age-class structure indicated by the red line in Figure 4.3.2. Most of the age classes over the rotation age of 50 years (50-59 years on the graph) are in the hard factor limited category, partial harvest category or are part of a regeneration harvest. With an absence of aspen in the 40-49 year and 50-59 year-old age classes, early entry into those age classes above the age-class regulation line is possible, but unlikely during the next 10-year period because aspen in these age classes is not of merchantable size.

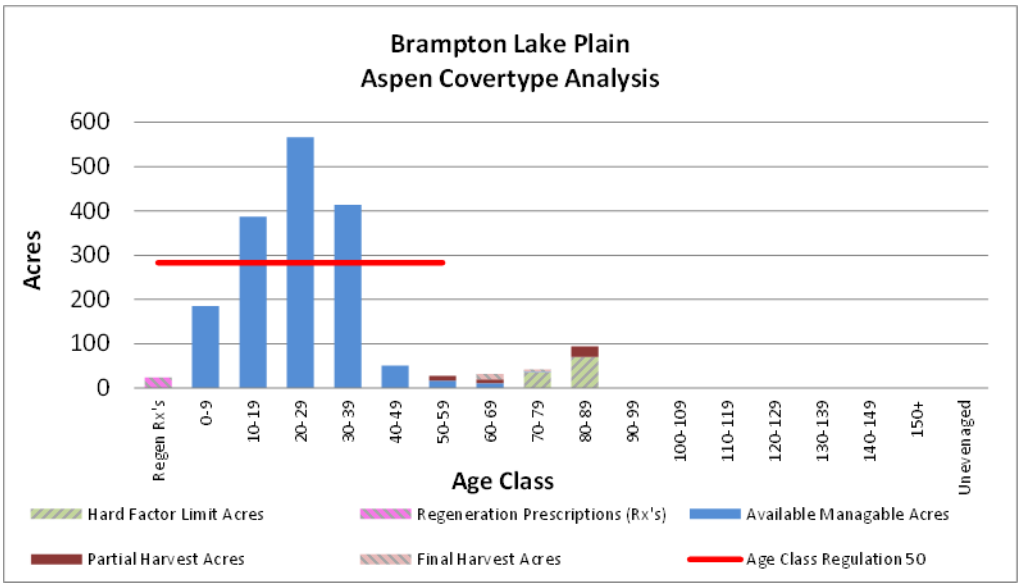

Figure 4.3.2. Graph of the age-class distribution for the aspen cover type on the Brampton Lake Plain management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Balanced acres in each age class over a 50-year rotation as indicated by the red line in Figure 4.3.2;
- Provide an even supply of forest products; and
- Provide a balanced mix of habitat conditions for a variety of wildlife as well as a variety of hunting-type opportunities.

Long-Term Management Objectives

- Once age classes are more balanced, regenerate approximately 283 acres each decade;
- Over the next 20 years, few acres will be available for harvest because of the absence of aspen in the 40-49 and 50-59 year old age class;
- Opportunities to harvest in the spikes (above the red line) presently in the 20-29 and 30-39 year old age classes will be explored as these classes grow older and reach merchantable size; and
- Biomass harvesting may facilitate the opportunities needed to harvest in these age classes early.

10-Year Management Objectives

- Because of age-class imbalance and age-class spikes in the younger classes, harvest and regenerate 366 acres over the 10-year planning period (with much of this acreage will come from the 40-49 year and older age classes); and
- As biomass markets improve, opportunities to harvest from the 30-39 year old age class will be explored.

Red Pine Cover Type

Current Condition

The red pine cover type covers 1,539 acres (25%) of the management area (Table 4.3.1) and is poorly distributed across age classes (Figure 4.3.3). This cover type will be managed on an 80-year rotation with a balanced age-class structure of 150 acres in each age class (indicated by the red line in Figure 4.3.3). Red pine stands occur on dry-mesic sandy soils, similar to the aspen stands in this management area. Red pine is ideally suited for these soil types. Nearly 60% of the red pine in this management area is of plantation origin. The spike in the 60-69 year-old age class on Figure 4.3.3 is indicative of the planting efforts of the 1950s that established many of these stands.

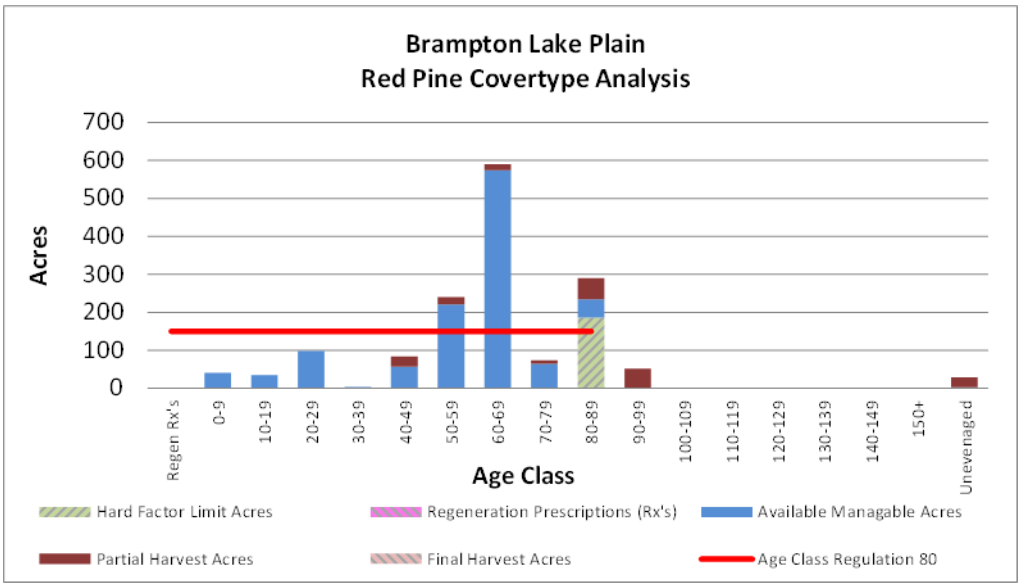

Figure 4.3.3. Graph of the age-class distribution for the red pine cover type on the Brampton Lake Plain management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Maintain the same number of acres of red pine in the management area and at approximately the same ratio of plantation pine to natural origin pine;
- Balance age-classes of the plantation origin red pine to lessen the spike in the 60-69 year-old age class; and
- Where possible along recreation trails, convert plantation red pine to natural origin red pine.

Long-Term Management Objectives

- Once age classes are more balanced, harvest and regenerate 150 acres and thin 778 acres each decade;
- Plantation stands will be managed on an 80-year rotation with intermediate harvests (thinning) as basal area guidelines are met;
- Maintain stands of natural origin on about 40% of the red pine acreage on an average 150-year rotation using natural regeneration techniques and scarification as needed; and
- Both natural origin and plantation stands will be thinned as necessary.

10-Year Management Objectives

- Thin 574 acres of red pine in the next decade;
- Regenerate 435 acres of red pine in the next decade (this number is higher than the regulated amount due to the current age class structure);
- None of the natural origin stands will reach rotation age within the next decade; and
- Thinning should add natural regeneration gaps to promote stand species diversity.

Cedar Cover Type

Current Condition

The cedar cover type covers 589 acres (10%) of the management area (Table 4.3.1). Cedar historically does not regenerate reliably especially in high deer population areas such as the Brampton Lake Plain and this is well illustrated in Figure 4.3.4. The absence of any age classes below 80-89 years indicates little harvesting has occurred in this type; largely due to regeneration challenges.

Although there will be no harvesting of cedar within deer wintering complexes, there is a need to address future cedar cover. Limited cedar harvests will occur outside the wintering complexes recognizing that cedar takes many years to regenerate and escape deer browsing. Reliable and timely regeneration of cedar is a concern from both wildlife and forest management perspectives.

Desired Future Condition

- Maintain the cedar cover type at the current acreage level.

Long-Term Management Objective

- Explore techniques for regenerating the cedar cover type under high browsing pressures, ideally leading to harvesting 37 acres per decade.

10-Year Management Objective

- While no active management activities are planned in this type in the 10-year planning period, limited harvesting may occur to test methods of cedar regeneration.

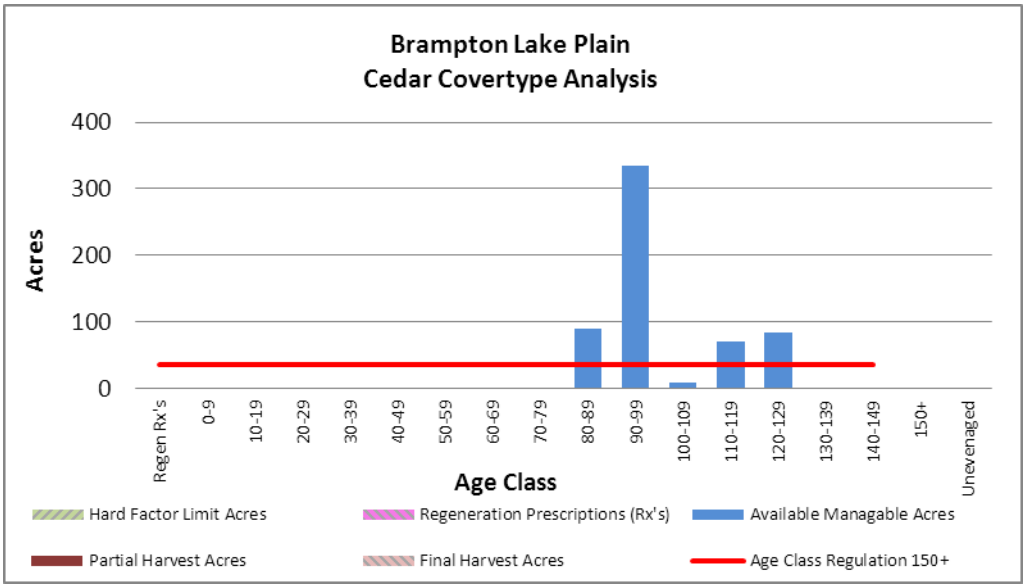

Figure 4.3.4. Graph of the age-class distribution for cedar on the Brampton Lake Plain management area (2012 Department of Natural Resources inventory data).

Northern Hardwoods Cover Type

Current Condition

Northern hardwood stands make up 487 acres (8%) of this management area. Stands occur mostly on dry-mesic sites and yield low- to medium-quality hardwood. Most stands have been managed on a selection harvest basis and are in good condition. Recruitment of seedlings and saplings into larger size classes is generally not successful due to browse pressure. Northern hardwood is typically managed using an uneven-aged harvest system based on basal area rather than age.

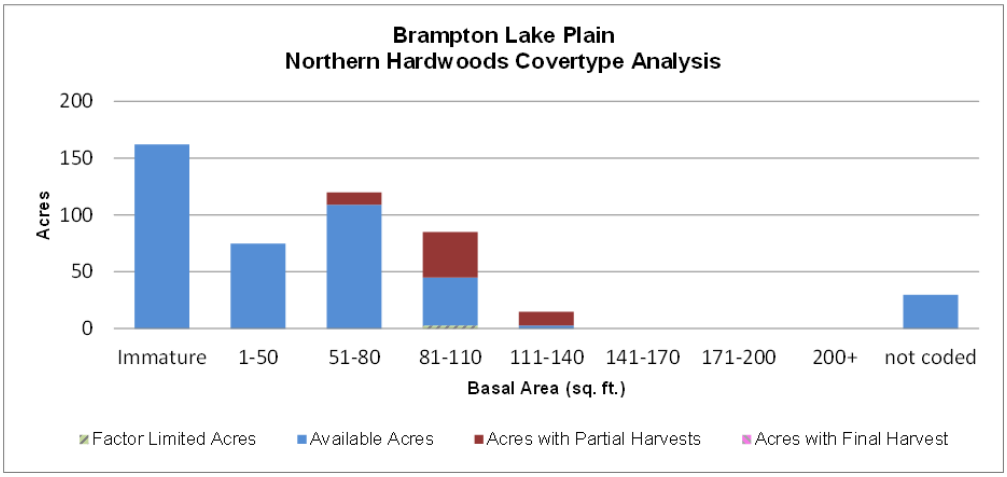

Figure 4.3.5. Graph of the basal area distribution for northern hardwoods on the Brampton Lake Plain management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

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

Long-Term Management Objectives

- Using an uneven-aged system, selectively harvest high quality northern hardwood stands on a 20-year cycle. The harvest cycle will be optimized to maintain high growth rates and minimize stagnant growth periods. To accomplish this harvest cycles may vary slightly from the nominal 20-year cycle. This will result in an estimated 123 acres harvested each decade.
- Low quality hardwood stands may be managed on an even-aged system with an 80-year rotation

10-Year Management Objective

- Approximately 75 acres should be harvested in the in the next decade (this number is lower than the estimated long-term amount due to the current low basal areas); and
- Maintain hemlock, white pine and upland cedar where possible in stands that are harvested.

Lowland Conifers Cover Type

Current Condition

The lowland conifer cover type covers 482 acres (8%) of the management area and occurs on poorly drained sites supporting mixed stands of cedar, black spruce, tamarack, balsam fir, white birch and balsam poplar. Mixed lowland conifers have a poor age-class distribution, with most of the stands ranging between 80 and 110 years old. Most of these stands have a hard factor limit associated with them which makes them unavailable for harvesting this planning period. Some harvesting has been done in this type over the past 10 years. As these stands age, they become increasingly susceptible to insect and disease problems.

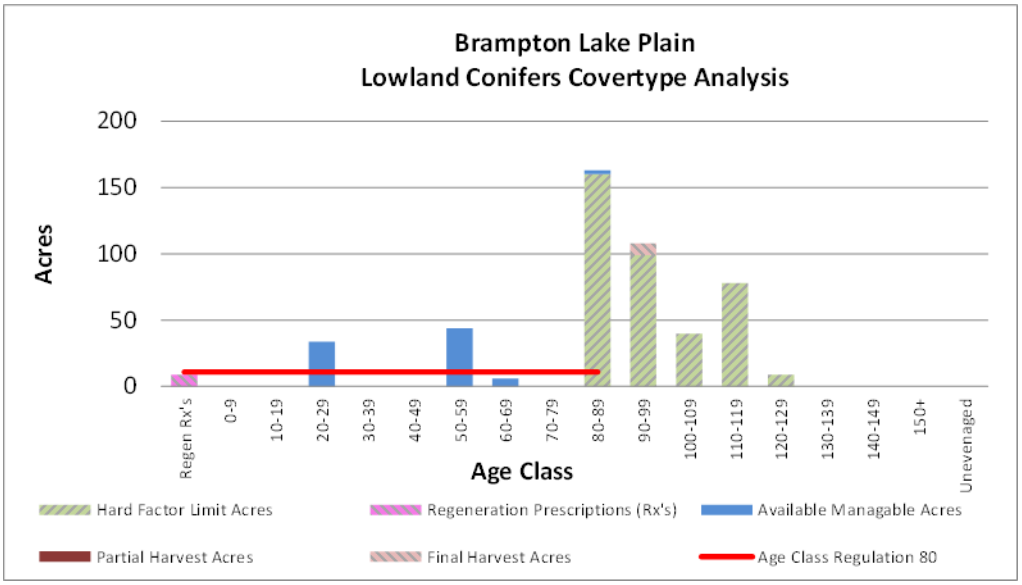

Figure 4.3.6. Graph of the age-class distribution for the lowland conifer cover type on the Brampton Lake Plain management area (2012 Department of Natural Resources inventory data)**.**

Desired Future Condition

- Closed canopy stands interspersed with patches of all age classes;
- Sustainable regeneration and recruitment of seedlings and saplings;
- Maintain the closed canopy structure to provide important winter deer habitat; and
- Plan to harvest the oldest available stands to regenerate them before widespread mortality occurs.

Long-Term Management Objectives

- Manage this cover type on an 80-year rotation, leading to harvesting 11 acres per decade in those stands without hard factor limits;
- Regenerate stands to species mixes similar to the pre-harvest conditions with preference for cedar, black spruce and balsam fir;
- Harvesting will be done using patch cuts with clumped retention or strips; and
- Lowland conifer stands in areas inaccessible for harvest will be subject to natural processes, resulting in a range of successional stages.

10-Year Management Objectives

- Harvest about 30 acres over the next decade focusing on the use of “low impact” harvesting systems and successful, reliable regeneration techniques (this number is greater than the regulated amount due to the current age-class structure, with very few acres in young age classes);
- Use appropriate silvicultural techniques to assure adequate regeneration; and
- Monitor harvested sites.

Other Forested Cover Types

Current Condition

Other forested types make up 778 acres and includes upland spruce/fir (139 acres), lowland deciduous (116 acres), mixed upland deciduous (111 acres), lowland spruce/fir (84 acres), hemlock (69 acres), paper birch (67 acres), white pine (60 acres), jack pine (47 acres), lowland poplar (41 acres) upland conifer (20 acres), natural mixed pine (17 acres), and upland mixed forest (7 acres). Together these types make up about 13% of the area in small, scattered stands.

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 current representation using appropriate silvicultural methods;
- Harvest as opportunities arise in conjunction with other management activities; Black spruce, jack pine, paper birch, balsam poplar and tamarack are typically managed with even-age systems. These stands will continue to be managed with appropriate rotation ages.
- Harvest older stands that do not have factor limits first to prevent mortality;
- Use appropriate silvicultural techniques to assure adequate regeneration;
- Monitor harvested sites; and
- Featured species habitat requirements will be taken into consideration.

10-Year Management Objectives

- Approximately 207 acres will be available for harvest from these stands in the next decade. Generally no harvesting will be done in the hemlock type.

Non-forested Cover Types

Current Condition

The follow non-forested cover types are found on this management area: upland open/semi open lands (156 acres – 3%), lowland open/semi open lands (171 acres – 3%) and other (water, local, urban) (26 acres - >1%).

Desired Future Condition

- The desired future condition of the grass types is an open sedge/grass community populated with native grass, soft mast shrubs and other herbaceous species.

Long Term Management Objective

- Permanent grass openings may be maintained as needed.

10-Year Management Objective

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

4.3.2 – Featured Wildlife Species Management

The Brampton Lake Plain management area contains a large proportion of upland aspen and pine cover types. Future management will strive to balance aspen age-class distribution and enhance the conifer component of mixed stands. This will be done by encouraging the naturally occurring understory of red pine, white pine and balsam fir. Many red pine plantations will be managed for natural reproduction. The following have been identified as featured species for this management area: American woodcock, blackburnian warbler, ruffed grouse and wild turkey. Some of the most significant wildlife management issues in the management area are: mesic conifer (hemlock, white pine, cedar, spruce); mature forest; habitat fragmentation; early successional forest; mast (soft and hard); and forest openings. During this 10-year planning period, additional analyses to better define the spatial extent of priority areas for featured species will be performed.

American Woodcock

The western Upper Peninsula goal for woodcock is to maintain or increase woodcock habitat. In priority areas, management should focus on balancing the age-class distribution and provision of display, feeding, nesting and brood-rearing habitat via upland brush, opening and poorly stocked stand management.

Wildlife habitat specifications:

- Maintain aspen cover types within the management area, especially where associated with alder, riparian zones, or forested wetlands;
- Balance aspen age-class distribution within the management area;

- Use silvicultural practices that encourage the aspen component in mixed stands associated with alder, riparian zones or forested wetlands; and
- Maintain or create rough openings associated with alder, riparian zones, regenerating aspen or forested wetlands within the management area.

Blackburnian Warbler

The goal for blackburnian warbler is to maintain suitable breeding habitat. Management efforts for blackburnian warblers should focus on within stand diversity, discouraging habitat fragmentation and maintaining mature forest with a conifer component in priority landscapes. Specifically, increase mesic conifer cover types (i.e., hemlock, white pine, red pine, upland spruce-fir) and allow some to mature beyond standard rotation ages, retain a larger percentage of mesic conifer during harvests, employ silvicultural practices that encourage the regeneration of mesic conifers and where feasible, under plant hemlock, white pine and white spruce in hardwood dominated stands.

Wildlife habitat specifications:

- Increase the mesic conifer (e.g., hemlock, white pine, natural 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 plant hemlock, white pine and white spruce in hardwood dominated stands on suitable sites without a seed source.
- Provide for late successional mesic conifer dominated, particularly hemlock, stands in the management area by extending the rotation length for white spruce and balsam fir cover types to 80 years and not harvesting hemlock in this management area

Ruffed Grouse

The western Upper Peninsula goal for ruffed grouse is to maintain or improve habitat. Management during this planning period will focus on early successional forest in priority landscapes, balancing age-class distribution, and provision of soft browse.

Wildlife habitat specifications:

- Maintain aspen acres in the management area and balance the age-class distribution of aspen cover types.
- Stand size for grouse: Ideal aspen stands will be irregularly shaped 10-40 acres to maximize juxtaposition or edge avoiding extensive single age final harvests. Larger harvest units should have irregular boundaries, provide one 1-3 acre unharvested clumped inclusion for every 40 acres harvested,
- Hold or increase the conifer component in aspen stands. Leave conifers under four-inch diameter at breast height in mixed stands and aspen types as immediate residual escape cover and to promote corridors.
- Maintain cherry production for soft mast and oak component in stands with oak and emphasize areas with a hazel understory.

Wild Turkey

The western Upper Peninsula goal for turkey is to provide sufficient habitat in order to continue to provide recreational opportunity to see and harvest turkey. Management should focus on providing natural winter food, maintaining and regenerating the oak component and maintaining brood-rearing openings to improve brood-production and winter survival.

Wildlife habitat specifications:

- Provide sources of winter food that are accessible above the snow (food plots, annual grains, fruit-bearing trees or shrubs);
- Conserve the oak component in forest stands, promote oak regeneration, and where absent, plant oak on appropriate sites;
- Maintain and increase the number of forest openings (forest openings, savannas, barrens, hayfields, etc.) used for broad rearing sites; and
- Promote or enhance small dense mature confer stands for winter thermal cover and roosting.

4.3.3 – 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 one listed species and no natural communities of note occurring in the management area as listed in Table 4.3.2. 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 4.3.2. Occurrence information for special concern, rare, threatened and endangered communities and species for the Brampton Lake Plain 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
Bird								
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

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

Approximately 353.4 acres of potential old growth have been identified within the Brampton Lake Plain 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.

There is only one high conservation value area in the management area and that is the 20 acre Brampton Lake Plain coastal environmental area (Figure 4.3.7). There are no ecological reference areas identified in the management area.

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.

4.3.4 – 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
- *Diplodia* shoot blight of pine
- *Sirococcus* shoot blight

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:

- Garlic mustard
- Glossy buckthorn
- Japanese knotweed
- *Phragmites* (common reed)

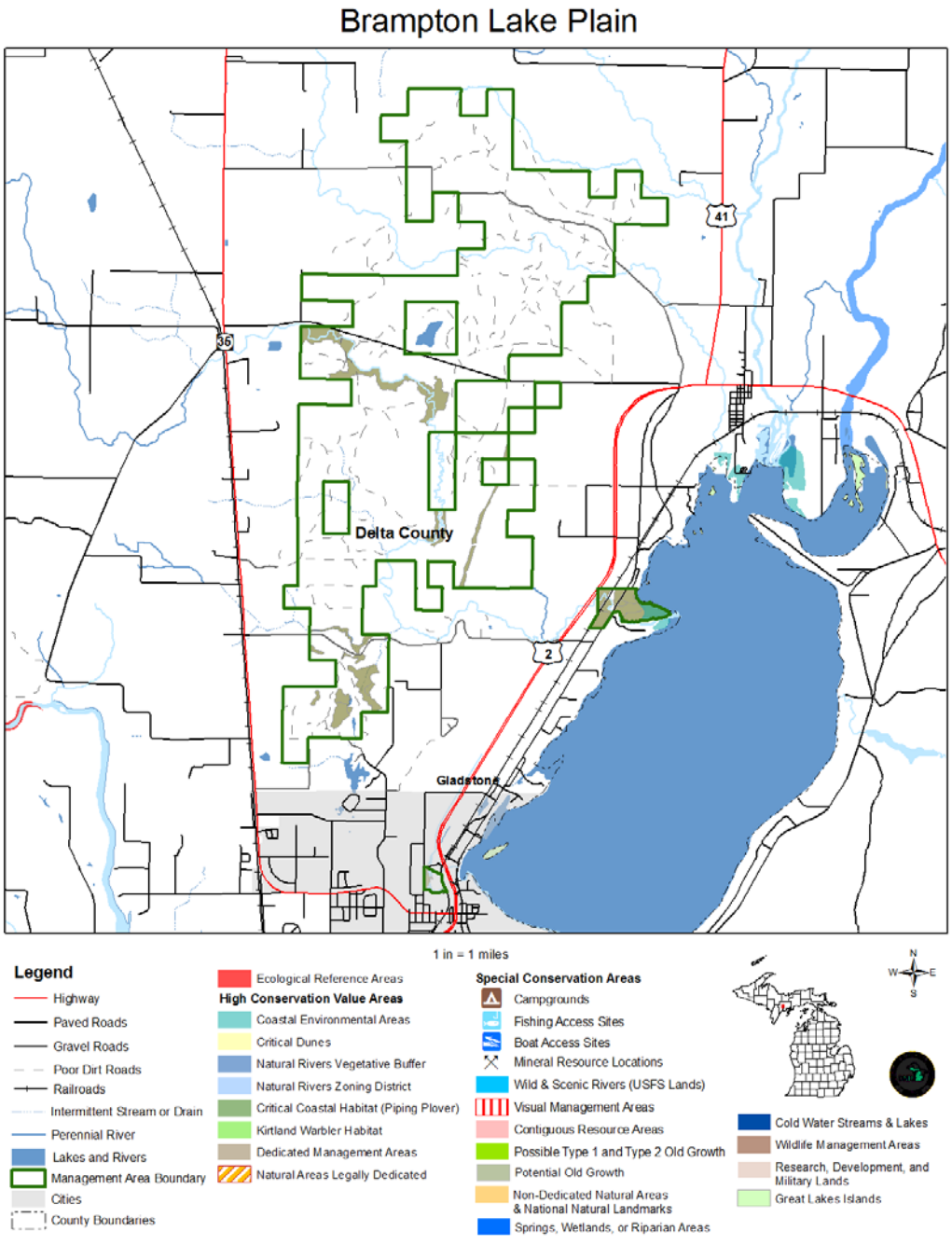

Figure 4.3.7. A map of the Brampton Lake Plain management area showing the special resource areas.

4.3.5 – 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 are shown in Figure 4.3.1.

4.3.6 – Fire Management

The management area consist primarily of dry and dry-mesic northern forests sites with some lowland conifers. With the slope enhanced onshore winds, these dry sites probably experienced periodic stand replacement fires, with fire return intervals of approximately 80-150 years.

- All wildfires within the management area will be subject to appropriate initial attack response.
- Residential development at the southern end of the management area on these dry soils is a significant wildland urban interface issue. Localized access to firewise information should be considered.
- Prescribed fire has been used to encourage red pine reproduction and should be considered as a part of future natural regeneration efforts.

4.3.7 – Public Access and Recreation

This area has good public and management access and receives a significant amount of recreational use due to the close proximity to the cities of Escanaba and Gladstone. The Days River Pathway and Gladstone to Rapid River snowmobile trail are located in this area (Figure 4.3.1). No state forest campgrounds are located in this management area.

- Maintain current management access. Work to expand public access as opportunities arise.
- Buffer recreational pathways as needed to protect recreational and esthetic character of the trails.

4.3.8 – 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 and no economic oil and gas production has been found anywhere in the Upper Peninsula.

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium, with minor amounts of peat and muck, medium-textured till and lacustrine (lake) sand and gravel. The glacial drift thickness varies between ten and 50 feet. Sand and gravel pits are located in the management area and there is potential on the uplands.

The Ordovician Trenton Group subcrops below the glacial drift. The Trenton is quarried for dolostone just to the northeast of the management area.

Metallic mineral exploration has not occurred in this management area and the depth to Precambrian rocks may limit the potential.