4.27 Panola Plains Management Area

Summary of Use and Management

Vegetative management in the Panola Plains Management Area (MA) (Figure 4.27.1) will provide a variety of forest products; maintain or enhance wildlife habitat; protect areas with unique characteristics; and provide for forest based recreational uses. Timber management objectives for the 10-year planning period include improving the age-class distribution of aspen; maintaining the conifer component in northern hardwood stands; maintaining the presence of minor cover types on the landscape; and maintaining non-forest vegetation types. Wildlife management objectives include addressing the habitat requirements identified for the following featured species: American woodcock, black bear, eastern bluebird, Kirtland's warbler and ruffed grouse. Balancing age classes will be an issue for this 10-year planning period.

Introduction

The Panola Plains management area is on a Pitted Outwash Plain in southeastern Iron County. The state forest covers 13,183 acres and is somewhat contiguous blocks. The major ownership in this vicinity is non-industrial private. The management area is dominated by aspen, red pine and jack pine cover types. Other attributes that played a role in the definition of this management area include:

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

Additional priorities include the establishment of early successional aspen and pine on appropriate sites and oak regeneration.

The predominant cover types, composition and projected harvest areas for the Panola Plains management area are shown in Table 4.7.1.

Table 4.27.1. Summary of cover types, composition, limited factor area, manageable area and projected harvest area for the Panola 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	36%	4,719	219	4,500	618	0	4,719	750	0
Red Pine	16%	2,172	74	2098	682	817	2,172	233	1,259
Jack Pine	13%	1,690	32	1658	0	0	1,690	237	0
Lowland Conifers	6%	776	365	411	161	0	776	46	0
Oak	4%	505	282	223	48	71	505	14	101
Upland Open/Semi-Open Lands	9%	1,137	0	1137	0	0	1,137	0	0
Lowland Open/Semi-Open Lands	4%	474	0	474	0	0	474	0	0
Misc Other (Water, Local, Urban)	1%	154	0	154	0	0	154	0	0
Others	12%	1,556	500	1056	174	103	1,556	108	149
Total		13,183	1,471	11,712	1,682	991	13,183	1,388	1,509

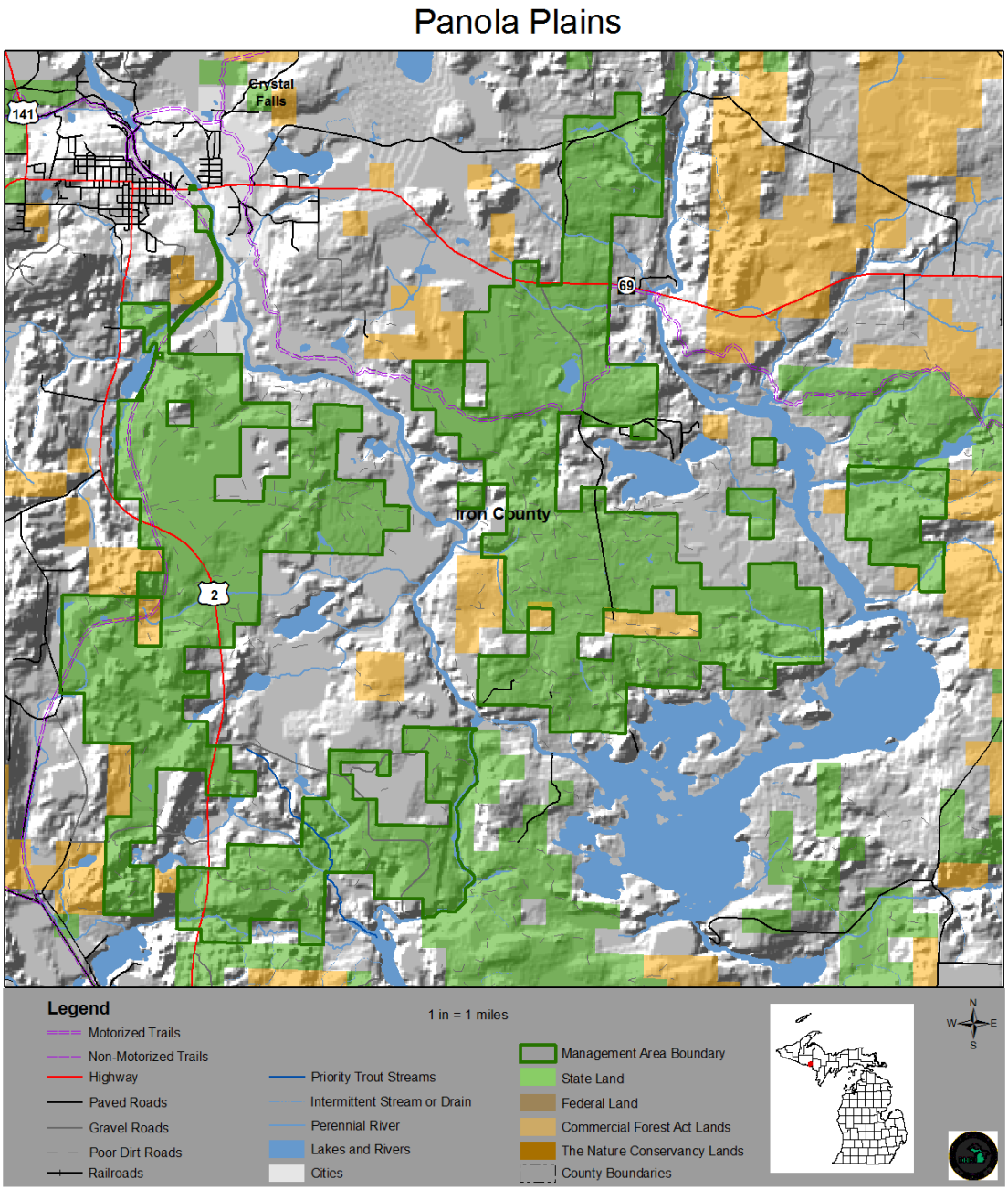

Figure 4.27.1. A map of the Panola Plains management area (dark green boundary) in relation to surrounding state forest and other lands in Iron County, Michigan.

4.27.1 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 Panola 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 occurs on 4,709 acres (36%) of state forest land in this management area (Table 4.27.1). High-quality large-tooth aspen grows within the management area. Younger age classes are over long-term management levels (red line in Figure 4.27.2) and there is an absence of acres in the older age classes. Many of these older age classes are either prescribed for harvest or have hard factor limitations.

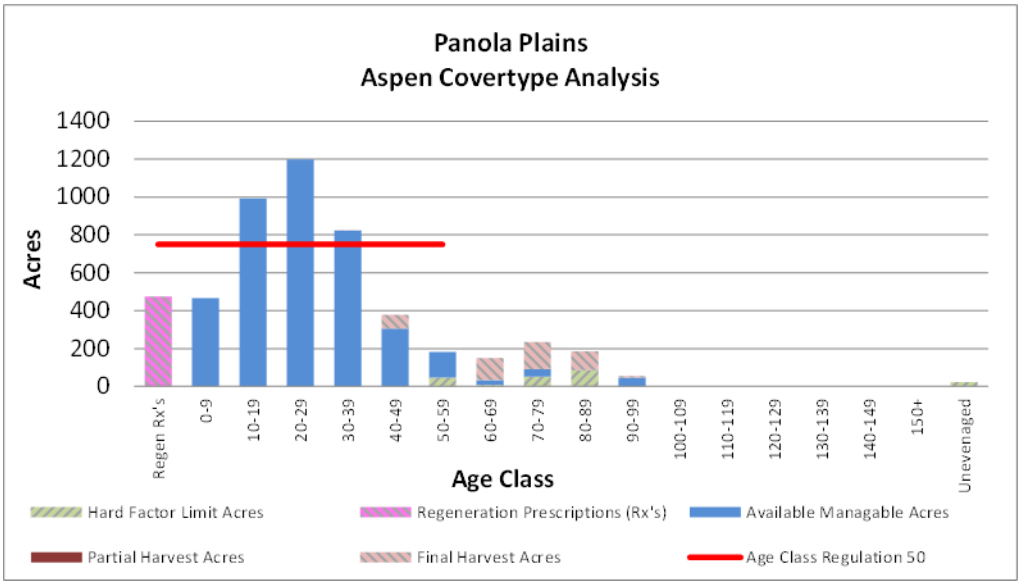

Figure 4.27.2. Graph of the age-class distribution for the aspen cover type on the Panola Plains management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

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

Long-Term Management Objective

- Once age classes are better distributed, harvest and regenerate approximately 750 acres each decade.

10-Year Management Objectives

- Harvest 618 acres over the 10-year planning period;
- Assess younger age classes for potential harvest acres;
- Harvest stands of 70-90 year-old aspen that are in decline;
- Two-aged stands with mature aspen over younger stands should be identified and scheduled for harvest; and
- Allow extended rotations on high-quality large-tooth aspen.

Red Pine Cover Type

Current Condition

There are 2,172 acres (16%) of the state forest in this management area is in the red pine cover type (Table 4.27.1). Red pine is poorly distributed across age classes spiking in the 50-59 year age class (Figure 4.27.2). Red pine stands occur on the same sites and soil conditions as aspen in this management area: dry-mesic sandy soils. Red pine is ideally suited for these types of sites. Nearly 67% of the red pine is of plantation origin.

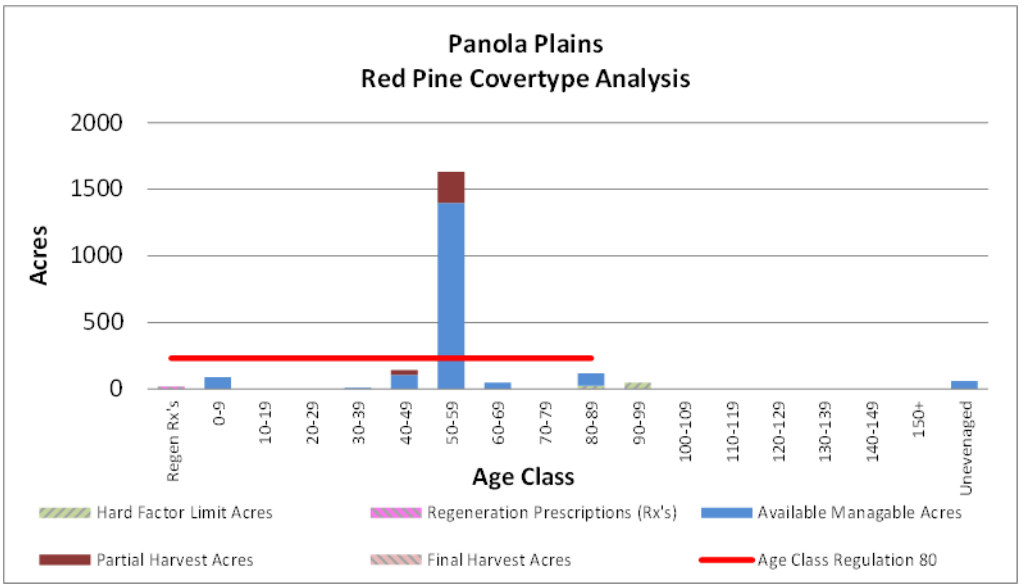

Figure 4.27.3. Graph of the age-class distribution for the red pine cover type on the Panola Plains management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Maintain the current level of red pine cover type, both naturally occurring and red pine plantation; and
- Maintain the current ratio of red pine plantation acres (67%) to naturally occurring red pine acres (33%).

Long-Term Management Objectives

- Plantation stands will be managed on an 80-year rotation with intermediate harvests (thinning) resulting in 233 acres of final harvests and 1,259 acres of partial harvests each decade;
- Manage natural origin stands on a 150-year rotation using natural regeneration techniques with shelterwood or patch clearcuts and scarification as needed; and
- Thin stands as necessary.

10-Year Management Objectives

- Begin working on the age class spike in the 50-59 year old age-class to try and create a better age-class distribution (Figure 4.27.1);
- Thin 817 acres of red pine in this planning period; and
- Regenerate 682 acres of red pine in this planning period; prioritizing those stands that are over rotation age or in poor health.

Jack Pine Cover Type

Current Condition

The jack pine cover type comprises about 1,690 acres (13%) of the management area (Table 4.27.1). Lots of harvesting has occurred in the past decade, creating a spike in the 0-9 year-old age classes (Figure 4.27.4). There a few acres with factor limitations in the 70-79 year-old age class and a noticeable absence of acres in the 30-39 and 40-49 year-old age classes. Hard factor limited acres have been removed from the total number of manageable acres available for harvest calculations.

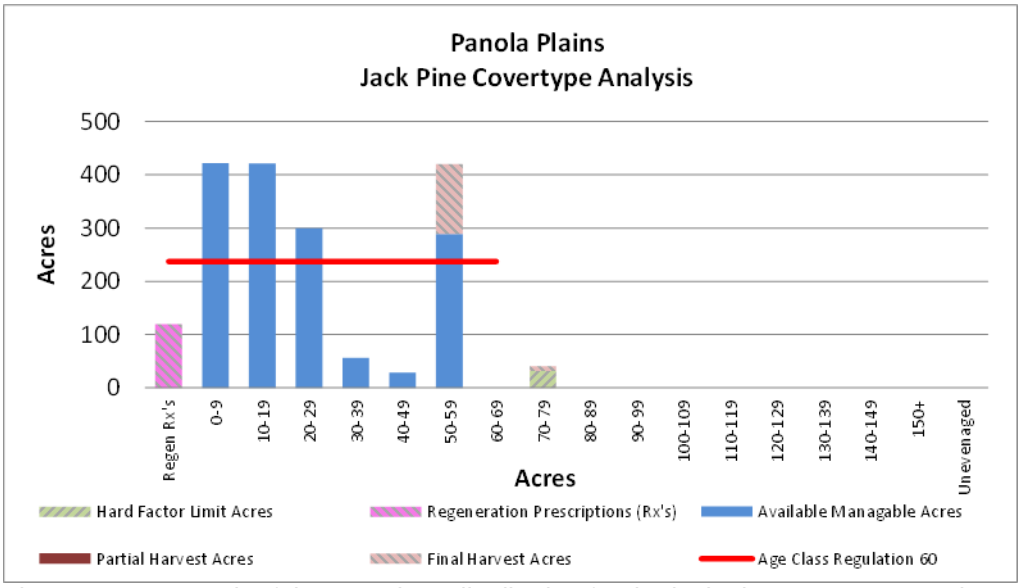

Figure 4.27.4. Graph of the age-class distribution for the jack pine cover type on the Panola Plains management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Balance age classes to provide an even, sustainable flow of forest products
- Provide for a mix of habitat conditions for a variety of wildlife; and
- Provide for a variety of hunting-type opportunities.

Long-Term Management Objectives

- Manage jack pine on a 60-year rotation; and
- Once age classes are balanced, harvest and regenerate 237 acres of jack pine each decade.

10-Year Management Objective

- Harvest and regenerate zero acres during this 10-year planning period.

Lowland Conifers Cover Type

Current Condition

The lowland conifer cover type constitutes about 776 acres (6%) of the state forest land in this management area (Table 4.27.1) These stands grow on poorly drained sites and support mixed stands of cedar, black spruce, tamarack, balsam fir, white birch and balsam poplar. Due to the wet site conditions, they are more susceptible to rutting damage from logging equipment and present difficult operating conditions for harvesting. There are 365 acres of hard factor limited acres and they have been removed from the total number of manageable acres available for harvest calculations. Lowland conifers are poorly distributed across age classes, spiking in the 80-89 year age class (Figure 4.27.5). Little harvesting has been done in this type over the past 60 years.

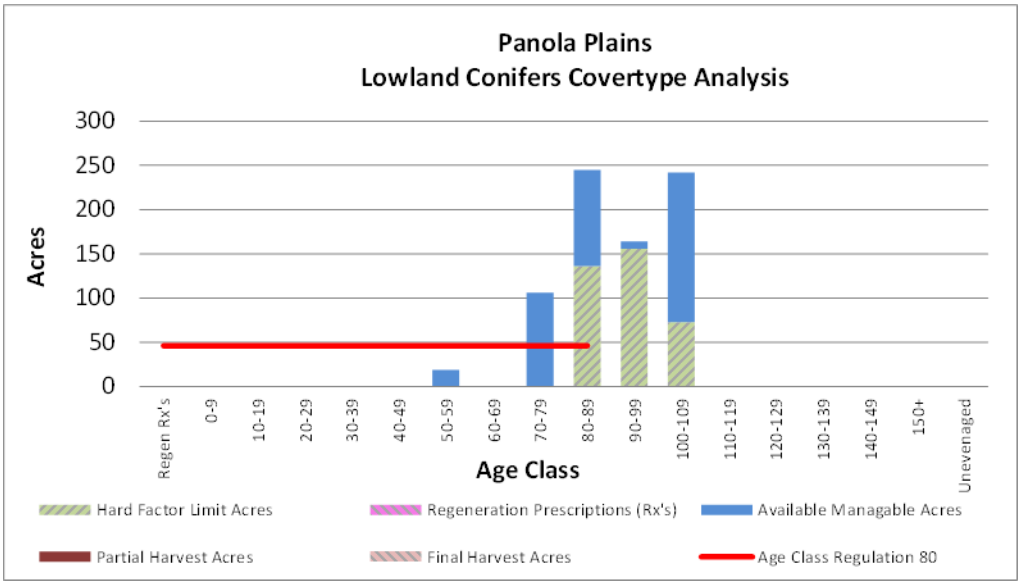

Figure 4.27.5. Graph of the age-class distribution for the lowland conifer cover type on the Panola Plains Management Area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Closed canopy stands interspersed with patches of all age classes; Sustainable regeneration and recruitment of seedlings and saplings;
- Mixed lowland conifer stands provide important winter habitat for deer and it is necessary to maintain the closed canopy (>70%) structure in many stands for that purpose; and
- Harvesting will be planned to regenerate stands before widespread mortality occurs.

Long-Term Management Objectives

- Manage stands on an 80-year rotation providing 46 acres of final harvest each decade;
- Regenerate stands to a species-mix similar to the pre-harvest conditions preferring cedar, hemlock, black spruce and balsam fir; and
- Harvesting will be done using small clearcuts or strips with clumped retention.

10-Year Management Objectives

- Harvest about 161 acres over the 10-year planning period focusing on the use of “low impact” harvesting systems and successful, reliable regeneration techniques; and
- Additional harvesting may be desired to improve age-class distribution.

Oak Cover Type

Current Condition

The oak cover type is present on about 505 acres (4%) in this management area (Table 4.27.1). It is an important species to wildlife for mast production. Most of the oak is over 60 years old and little harvesting has occurred. This has created an absence of younger age classes. Over 50% of the oak is factor limited. The red oak is of fair quality.

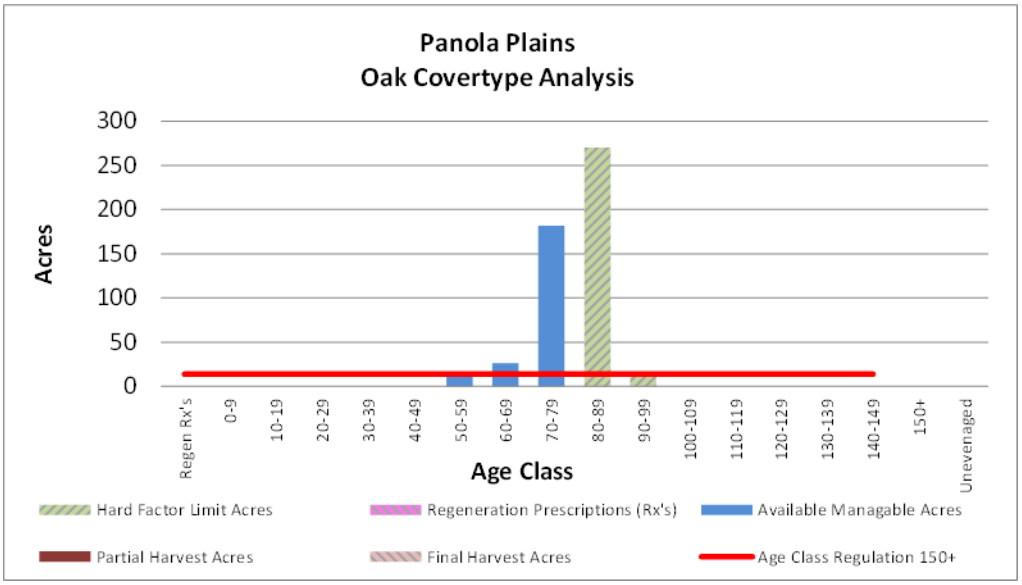

Figure 4.27.6. Graph of the age-class distribution for the oak cover type on the Panola Plains management area (2012 Department of Natural Resources inventory data).

Desired Future Condition

- Maintain the current component of oak in mixture with natural red and white pine.

Long-Term Management Objectives

- Maintain oak as a component of mixed upland types;
- Red oak stands will be regenerated on a 150-year rotation resulting in 14 acres of final harvest and 101 acres of thinning each decade; and
- Monitor oak stands for oak wilt.

10-Year Management Objectives

- Thin 71 acres of oak to increase hard mast production;
- Harvest and regenerate 48 acres of red oak; and
- In oak stands affected by oak wilt, convert to a pine type or oak barrens.

Other Forested Cover Types

Current Condition

Other forested types make up 1,556 acres and are made up of lowland spruce/fir (456 acres), upland spruce/fir (354 acres), cedar (198 acres), upland conifers (146 acres), white pine (118 acres), natural mixed pines (75 acres), lowland deciduous (64 acres), northern hardwoods (64 acres), upland mixed forest (36 acres), mixed upland deciduous (30 acres), hemlock (10 acres) and lowland poplar (5 acres). Together these types make up about 5% of the management area.

Desired Future Condition

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

Long-Term Management Objectives

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

10-Year Management Objectives

- Harvest those stands without harvest limitations adjacent to other planned harvest activities and where stand and habitat conditions indicate that harvesting is appropriate; and
- Expected harvests in these types will be less than 277 acres during this 10-year planning period.

Other Non-forested Cover Types

Current Condition

The following non-forested cover types are found on this management area: upland open/semi- open lands (1,137 acres – 9%), lowland open/semi-open lands (474 acres – 4%) and miscellaneous other (water, local, urban) (154 acres – 1%).

Desired Future Condition

- These areas will be maintained in the current condition.

Long-Term Management Objective

- Grass (open/semi-open lands) will be burned or mowed to prevent forest encroachment.

10-Year Management Objective

- Grass-types (open/semi-open lands) will be treated for opening maintenance as needed.

4.27.2 – Featured Wildlife Species Management

Early successional forest types, openings and oak dominate the Panola Plains management area. The red and jack pine and lowland conifer stands provide some cover for wintering deer. In general, the aspen in this management area should be harvested on a slightly shorter rotation because of the quality of the soils. Oak should be promoted at every opportunity and opening complexes should be maintained with fire. The primary focus of wildlife habitat management in the Panola Plains management area will be to address the habitat requirements identified for the following featured species: American woodcock, black bear, eastern bluebird, Kirtland's warbler and ruffed grouse. Based on the selected featured species, some of the most significant wildlife management issues in the management area are: early successional forest conditions (associated with alder, riparian zones or forested wetlands), mast (hard and soft); habitat fragmentation; early successional forest; large open land complexes (with snags in open lands); and mast (soft). 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 maintaining early successional habitat associated with riparian zones and forested lowlands.

Wildlife habitat specifications:

- Maintain aspen cover type within the management area 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.

Black Bear

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

Wildlife habitat specifications:

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

Eastern Bluebird

The western Upper Peninsula goal for bluebirds is to maintain or improve habitat. State forest management efforts during this planning period will focus on maintaining or expanding open land conditions, protection of snags or dying standing trees associated with openings and managing opening complexes/savanna with prescribed fire.

Wildlife habitat specifications:

- Maintain herbaceous open-land complexes within the management area using prescribed burns or mowing and consider the spatial arrangement; and
- Protect snags or dying standing trees within the open-lands. If nest cavities are not present, consider: leaving standing live trees (e.g., aspen) trees in final harvest timber sales and/or planting scattered oak.

Kirtland's Warbler

The western Upper Peninsula goal for Kirtland’s warbler during this planning period is to provide suitable breeding and foraging habitat within this management area. Management will focus on providing large patches (300-550 acres where possible) of early successional jack-pine forest with appropriate structural and compositional diversity on droughty outwash plains. When possible, large blocks should be created by managing several smaller harvest blocks adjacent to each other simultaneously.

Wildlife habitat specifications:

Develop landscape level plans for Kirtland’s warbler habitat within and across management areas to ensure suitable habitat is provided at any point in time across management areas within the ecoregion. Jack pine should be harvested in a manner that attempts to mimic both the size and structure of the stands that would result from fire.

- Develop harvest plans in the context of landscape-level plans. Strive to increase patch size to meet Kirtland’s warbler habitat needs. Consider current and desired future patch size, age-class distribution and distance to other jack pine stands. When developing harvest plans, identify opportunities for increasing patch size:
    - Review state forest inventory in management area and identify adjacent stands with similar age classes that could reasonably be combined into one stand.
    - Collaborate in planning of the spatial arrangement and timing of harvest with willing major landowners within this outwash plain (e.g., U.S. Forest Service, Michigan Technological University).
    - Large blocks of regenerating jack pine adjacent to herbaceous openings are desirable as they function as open-lands until the trees are 3-4 feet in height and benefit open-land species as well.
- Post-disturbance legacies include simulated skips or fingers of jack pine; snags; and larger diameter, fire-tolerant trees such as red pine. These features should be left in stands of harvested jack pine as retention to benefit Kirtland’s warbler.
- Scarify stands quickly after stands are harvested or use prescribed fire where feasible to maintain jack pine and to ensure maximum stem density.

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.

White-tailed Deer

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

Wildlife habitat specifications for deer wintering complexes:

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

4.27.3 – 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 six listed species and no natural communities of note occurring in the management area as listed in Table 4.27.2. 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.

The Panola Goose State Wildlife Management Area is a special conservation area within this management area as shown in Figure 4.27.7.

There are no high conservation value areas or ecological reference areas identified in this management area as illustrated in Figure 4.27.7.

Table 4.27.2. Occurrence information for special concern, rare, threatened and endangered communities and species for the Panola Plains 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								
Common loon	*Gavia immer*	T/G5/S3-4	Confirmed	HV	Very High	Emergent Marsh	Lowland open/semi-open	N/A
						Bog	Lowland open/semi-open	N/A
Bald eagle	*Haliaeetus leucocephalus*	SC/G5/S4	Confirmed	IL	Moderate	Bog	Lowland open/semi-open	N/A
						Hardwood-conifer swamp	Lowland Mixed	Mid
						Northern hardwood swamp	Black Ash	Late
						Poor conifer swamp	Tamarack	Late
						Floodplain forest	Lowland mixed	Mid
						Dry northern forest	Jack Pine, Red Pine	Early
						Dry-mesic northern forest	White Pine	Late
						Mesic northern Forest	Northern Hardwood	Late
Butterflies								
Freija fritillary	*Boloria freija*	*SC/G5/S3S4*	Confirmed	HV	Low	Bog	Lowland open/semi-open	N/A
						Patterned fen	Lowland open/semi-open	N/A
Frigga fritillary	*Boloria frigga*	SC/G5/S3S4	Confirmed	HV	Low	Bog	Lowland open/semi-open	N/A
Red-disked alpine	*Erbia discoidalis*	*SC/G5/S2S3*	Confirmed	MV	Low	Bog	Lowland open/semi-open	N/A
						Northern wet meadow	Lowland open/semi-open	N/A
						Pine barrens	Jack Pine	Early
						Muskeg	Lowland open/semi-open	N/A
						Patterned fen	Lowland open/semi-open	N/A
						Poor fen	Lowland open/semi-open	N/A
Mullusk								
Slippershell mussel	*Alasmidonta viridis*	T/G4G5/S2S3	Confirmed	EV	Very High	Headwater Stream	Aquatic	N/A
						Mainstem streams	Aquatic	N/A
						Inland lake	Aquatic	N/A

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

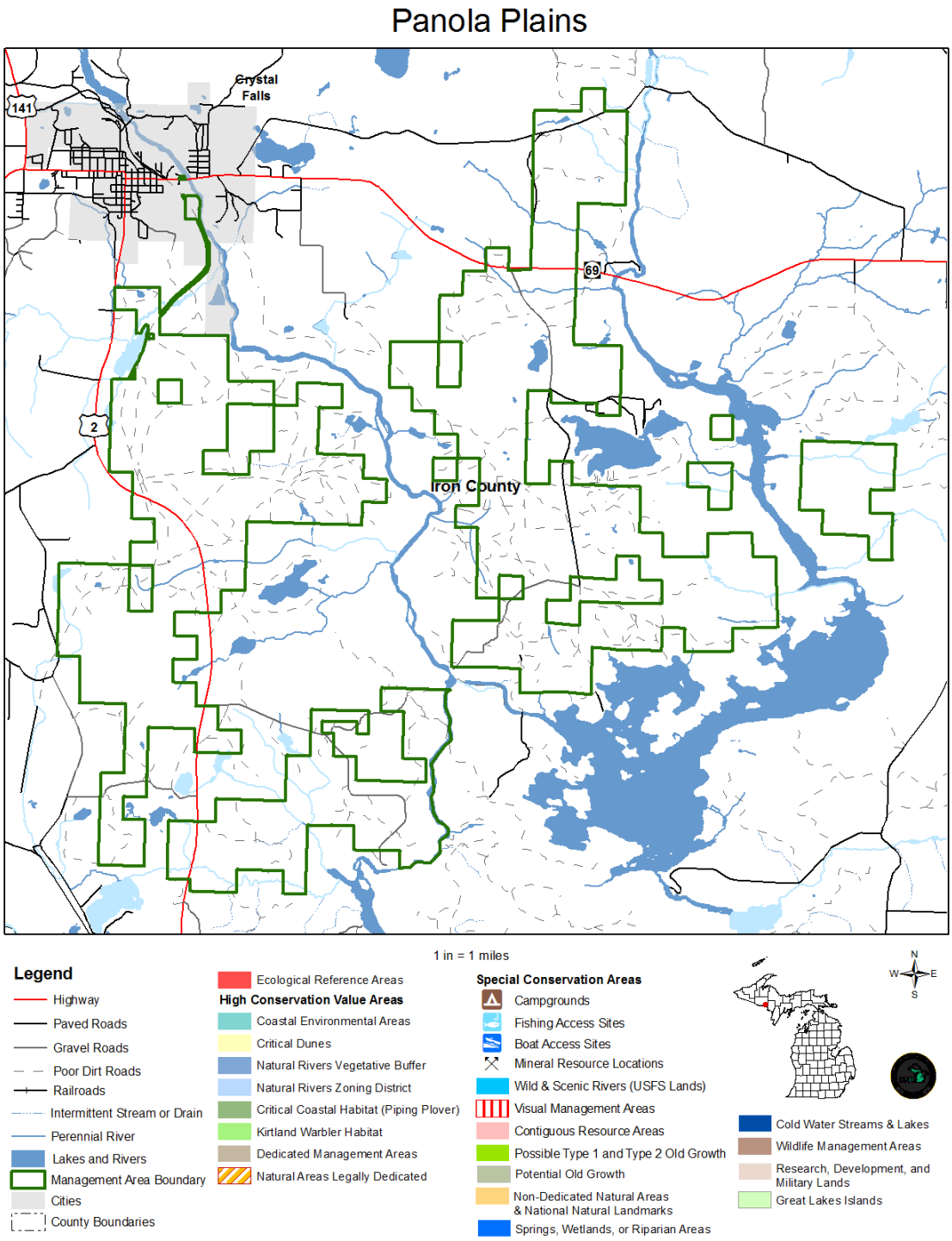

Figure 4.27.7. A map of the Panola Plains management area showing the special resource areas.

Management goals during this planning period:

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

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

4.27.4 – 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
- Jack pine budworm
- *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.

- Common buckthorn
- Japanese barberry
- Japanese knotweed
- Purple loosestrife
- Spotted knapweed.

4.27.5 – 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 4.27.1.

4.27.6 – Fire Management

Dominated by dry, sandy outwash soils, this area was probably subject to frequent, stand replacement fires. The result was likely a mixture of barrens and dry northern forest.

- This area falls within the Panola-Lake Mary Plains Zone Dispatch area. Initial attack is pre-planned, based on fire danger level, calling for elevated readiness and aggressive response to reported wildfires during periods of VERY HIGH and EXTREME fire danger.
- With considerable development on private lands between and adjacent to state forestlands, home hazard assessment and mitigation programs can effectively augment suppression efforts and control of prescribed burns.
- Public access at Glidden Lake State Forest Campground, at the state rest area along U.S.-2 and at the township parks at Dawson Lake and Dead Man’s Lake provide good opportunities for prevention messages for forest users.

4.27.7 – Public Access and Recreation

This area has good public and management access. The Glidden Lake State Forest Campground is located in this area (Figure 4.27.7). Associated with this campground are a boating access site and the Lake Mary Plains Ski Trail/Pathway. Two snowmobile trails cross this area on the north and west as shown in Figure 4.27.1.

- Work to expand public access and recreation facilities as opportunities arise.

4.27.8 – Oil, Gas and Mineral Resources

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

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and coarse-textured till in places thin to discontinuous. The glacial drift thickness varies between 50 and 100 feet. Sand and gravel pits are located in the management area and there should be potential for additional pits.

The Precambrian Badwater Greenstone, and the Dunn Creek, Michigamme and Hemlock Formations subcrop below the glacial drift. These rocks do not have a current economic use.

Old iron mines are located just to the north and west of the management area. Metallic mineral exploration has occurred in the management area in the past, and there could be additional potential.