

Damon Forest Biodiversity Stewardship Area

Introduction

The proposed 26,366 acre Damon Forest Biodiversity Stewardship Area (BSA) is in the high, dry, frosty glacial outwash area of northwest Ogemaw County, part of the larger Grayling Outwash Plain sub-section (Figure A-1). There are 22,723 acres of the BSA located on state forest land. The Damon Forest BSA represents a matrix-scale dry northern forest community (Kotar plant habitat classes: PVCd and PARVHa). There are two variants of dry northern forest represented in the BSA, the jack pine-hardwood (dominated by jack pine and northern pin oak), and the red pine variant. There is the potential for restoration of the pine barren community, which historically occurred in some parts of the BSA.

The predominant cover types on state forest land are jack pine (15,465 acres, or 68%); grass (1,928 acres, or 8%); aspen (1,503 acres, or 7%); red pine (1,099 acres, or 5%), and oak (1,018 acres, or 5%). Approximately 300 acres of the BSA are classified as wetland cover types.

Much of the jack pine-hardwood variant has been managed for timber and as Dedicated Critical Habitat for the Federally endangered Kirtland's Warbler, with harvests and regeneration directed by the 2001 Kirtland's Warbler Habitat Management Strategy. Habitat management has been conducted to maintain large, even-aged blocks aggregating into many thousands of acres of young jack pine dominated forest. The area also supports numerous other wildlife species associated with jack pine dominated dry northern forest. Notable species include Lincoln's sparrow, common nighthawk, upland sandpiper, clay-colored sparrow, wild turkey, spruce grouse, ruffed grouse, American woodcock, white-tailed deer, and black bear.

The red pine variant of dry northern forest is primarily located in the northwest portion of the BSA, and contains the Roscommon Red Pines, which is a legally dedicated state Natural Area as well as a small patch Ecological Reference Area. Pine species in natural area include 230+ year old red pine with an average diameter of 22 inches, and 200+ year old white pine with an average diameter of 27 inches. Many other red pine stands were planted in the BSA in the 1930s and are greater than 12 inches in diameter. Over 300 acres was planted to red pine in the mid-1980s. Naturally regenerating white pine is common in the understory of most of these stands. Aspen stands in this area have been actively managed from the 1960s through the present. Red and mixed oak stands in this area were established around 1920, and have white pine regeneration in the understory.

The proposed BSA has experienced regular large fires, both of natural and prescribed origin.

Oil and natural gas development is prevalent and concentrated in the central and southern portions of the BSA. There are also active but undeveloped oil and gas leases in the north central and northwest portions of the BSA. An ORV trail passes through the northeast corner of the BSAs, and snowmobile trails pass through the west and south sides of the BSA. There are no State Forest campgrounds or boating access sites in the BSA.

Damon Forest BSA
(26,366 Acres)

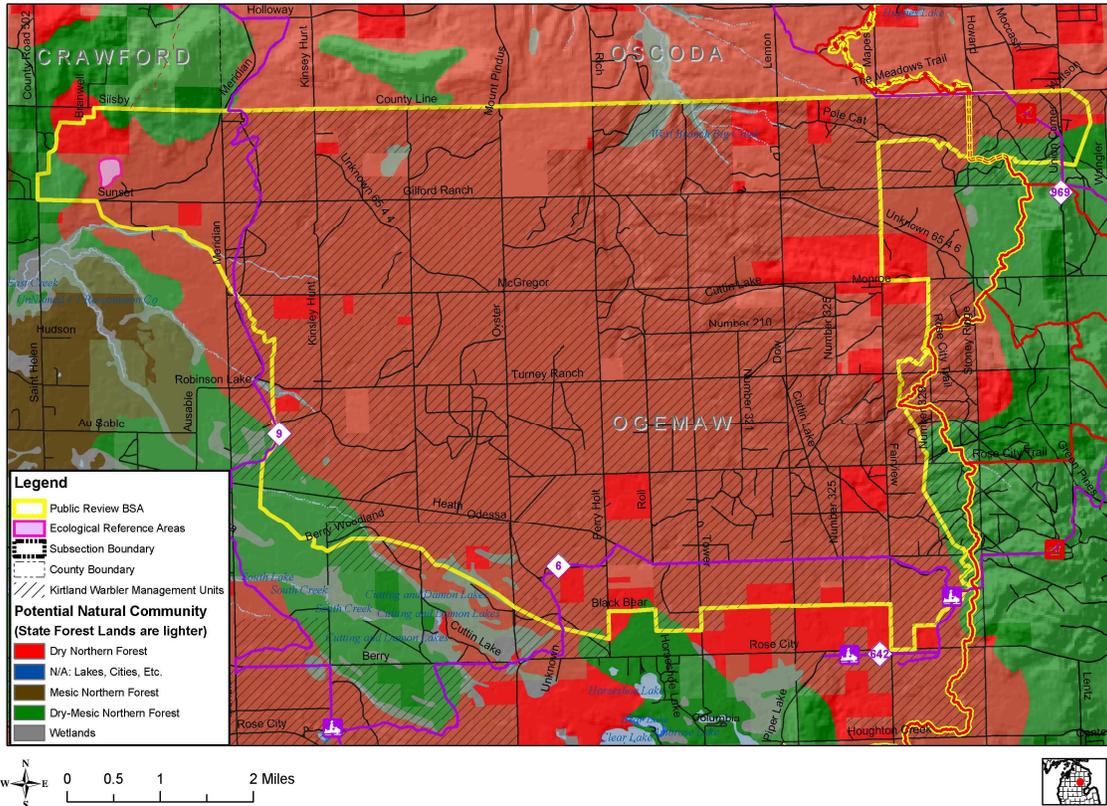


Figure A-1. The proposed Damon Forest Biodiversity Stewardship Area.

Desired Future Conditions

Desired future conditions are essentially vision statements for the desired future composition, structure, function, and stressors/threats for the major natural communities that occur in this BSA. The following desired future conditions apply to the proposed BSA:

Dry Northern Forest (Jack Pine-Hardwood Variant)

Jack pine stands are located on coarse-textured, well sorted, excessively dry sand soils, Kotar plant habitat class PVCd.

The ideal condition and composition of the jack pine-hardwood variant of dry northern forest in this BSA is as follows:

- Natural regeneration and recruitment of tree species is occurring, with supplemental planting as needed for reintroduction of specific species where natural seed sources are lacking. Early-successional stands comprise approximately 5% of the variant area and are dominated by sedge and grass species with jack pine regeneration.
- Mid-successional stands comprise approximately 10% of the variant area with the following composition:

- Dominated by dense 6-15 years old jack pine seedlings or saplings, with scattered northern pin oak and aspen-birch saplings.
- Presence of scattered individuals and groves of super-canopy red pine that survive catastrophic fire events.
- Eight-five percent of the variant area is late-successional stands, with the following composition:
 - Dominated by 15-70 year old jack pine, with variable 70-100% canopy cover.
 - Presence of scattered individuals and groves of mature red and white pine (>100 years old) and occasional mature northern pin oak.
- The structure of the landscape is two-tiered, with dense even-aged jack pine stands and a scattered super-canopy of red and/or white pine.

The ideal natural disturbance regime to be emulated is as follows:

- Low intensity ground fire is relatively rare but naturally occurs or is initiated through prescribed fire.
- Catastrophic disturbance (predominantly stand replacing fire, or insect-caused mortality) naturally occurs (as limited by legal fire suppression requirements), or is mimicked by timber harvest with a return interval of about 50 years.
- The landscape context drives variable but relatively large patch configuration of fire or timber harvest, with super-canopy red and white pine cohorts persisting in the overstory for several rotations of jack pine.
- High threat invasive species populations are low or absent. The incidence of naturally occurring jack pine budworm mortality is ideally below epidemic thresholds.

Dry Northern Forest (Red Pine Variant)

Red pine stands are located on ice-contact features within outwash plains, Kotar plant habitat class PArVHa.

The ideal condition and composition of the red pine variant of dry northern forest in this BSA is as follows:

- Early successional stands comprise about 15% of the variant area, with the following composition:
 - Stands are dominated by <30 year old red pine seedling/saplings.
 - Natural regeneration and recruitment of red pine is occurring, with supplemental planting where natural seed sources are lacking.
 - Jack pine seedlings are a minor component.
- Mid-successional stands comprise 60% of the variant area, with the following composition:
 - Stands are dominated by 30-75 year old red pine.
 - Some white pine regeneration is present in the understory.
- Twenty-five percent of the variant area is late-successional, with stands of red pine forest (75-300 years old), with the following composition:
 - Canopy cover is variable from 25-70% closure.
 - The dominant species is red pine, with minor species including white pine and jack pine.
 - Stand structure is less dense and even-aged (single cohort).

The ideal natural disturbance regime to be emulated is as follows:

- Low intensity ground fire (frequently associated with fire events in the adjacent landscapes) naturally occurs naturally or is prescribed with a return interval of 30-70 years.
- Catastrophic disturbance (predominantly stand replacing fire, or insect-caused mortality) naturally occurs (as limited by legal fire suppression requirements), or can be mimicked by timber harvest, with a return interval ranging from 100-200 years.
- Windthrow disturbance is very infrequent (1,200 year return interval).
- High threat invasive species populations are low or absent.

Pine Barrens

Pine barrens are located on excessively-drained sand soils (NLP Kotar habitat type PVCd), and should be correlated with records indicating the presence of circa-1800 barrens.

The ideal condition and composition of pine barrens in this BSA is as follows:

- Early-successional stands comprise approximately 15% of the barrens area, with the following composition:
 - Dominated by Pennsylvania sedge, poverty grass, and little bluestem with scattered jack pine regeneration (0-5 years).
 - Natural regeneration and recruitment of tree species is occurring, supplemented by planting as needed.
- Mid-successional stands comprise approximately 25% of the barrens area, with the following composition:
 - Barrens are grasslands with a patchwork of clumped jack pine regeneration seedlings, or;
 - Sapling stands with scattered 6-15 year old red pine and northern pin oak and isolated paper birch and aspen.
- About 60% of the barrens areas is late-successional, with the following composition:
 - Half of the late-successional barrens area is 40-70% open canopy grasslands, dominated by Pennsylvania sedge, poverty grass, and little bluestem.
 - There are scattered patches of mature jack pine within the grassland, with an average of 8 scattered mature trees or clumps of trees (>6 inch DBH) per acre.
 - There is scattered supercanopy red and white pine trees within the grassland.
 - Jack pine snags are present.
 - 10% of the late-successional barrens area is dominated by 15-100 year old closed canopy jack pine forest.
 - Minor species include red pine (common), white pine (uncommon), and stunted northern pin oak, black cherry, and aspen.

The ideal natural disturbance regime to be emulated is as follows:

- Low intensity ground fire naturally occurs naturally or is prescribed with a return interval of 15-50 years.
- Catastrophic stand replacing fire (return interval of 50-60 years) naturally occurs (as limited by legal fire suppression requirements), or is mimicked by timber harvest and post-harvest prescribed fire.
- High threat invasive species populations are low or absent.
- The incidence of naturally occurring jack pine budworm mortality is ideally below epidemic thresholds.

Short Term Management Direction (within 10 years)

- Actively manage single-species dominated pine stands (red pine and white pine) through selective or thinning harvests with retention of hardwood species to create a more natural stand appearance and structure, and to accelerate the conversion to mixed-pine stands.
- Final harvest mature jack pine dominated stands, which are starting to decline, with retention of white and red pine.
- Do not conduct thinnings or other harvests in aspen, pine, or oak stands with existing well-stocked advanced regeneration of white pine and/or red pine in the understory until the regeneration reaches pole size.
- Identify areas where the pine barren community can be restored, conduct timber harvest to facilitate restoration, and prioritize prescribed fire for these areas.
- Employ modified fire suppression tactics based on fire location, weather conditions, resource availability, safety, and property considerations.
- Place high priority on control of high risk invasive species.
- Maintain existing developed oil and natural gas well pads.

Long Term Management Direction (100+ years)

- Maintain up to 5% of the jack pine-hardwood variant areas as early successional jack pine (<5 years old).
- Maintain up to 15% of the red pine variant areas as early successional red pine (<30 years old).
- Manage up to 10% of the jack pine-hardwood variant as mid-successional (6-15 years old) jack pine.
- Manage up to 60% of the red pine variant as mid-successional (30-75 years old) red and white pine, and mixed red pine-jack pine-oak.
- In aggregate, manage approximately 20% of the jack pine-hardwood variant area in the 5-20 year age classes at any given time for Kirtland's warbler habitat.
- Manage approximately 85% of the jack pine-hardwood variant as late-successional jack pine (15-70 years old).
- Manage approximately 25% of the red pine variant as late-successional red pine and white pine stands in even-aged cohorts that range in age from 100-300 years, with a mixed pine-hardwood sub-canopy.
- Manage red and white pine dominated stands to:
 - Convert to mixed pine stands through thinning or selection harvests.
 - Encourage development of multiple even-aged cohorts
 - Retain a supercanopy of red and/or white pine.

- Manage oak-dominated stands to:
 - Encourage greater dominance by red and/or white pine through shelterwood or final harvests with retention of pine seed trees,
 - Use prescribed burns in combination with harvests to encourage natural regeneration of pine and oak.
 - Re-plant red pine where natural regeneration fails.
- Manage aspen stands to passively or actively convert/succeed stands to pine- or mixed pine-oak dominated stands.
- Retain or augment snags and coarse woody debris (CWD) in all stands in greater amounts than under standard retention guidance, maintaining a diversity of species and diameter classes and in various stages of decomposition.
- Passively manage wetlands with little to no active prescriptions.
- Maintain the existing recreational trail infrastructure.
- Remediate oil and gas sites to a forested condition through active planting when wells are depleted and capped.
- Allow new oil and natural gas well development on currently leased lands and lands with a current lease classification of “Development” or “Development with restrictions”.

Standards

- Michigan DNR Strategy for Kirtland’s Warbler Habitat Management, October 5, 2001

Guidelines

- Use DNR BSA silvicultural guidelines for management of forest cover types within natural communities.
- Michigan Natural Features Inventory community abstract for Dry Northern Forests and Pine Barrens.