

Dyer Red Pine Ecological Reference Area (ERA) Management Plan

Administrative Information

- Dyer Red Pine, also known as the Crawford Red Pine ERA
- Crawford County, T27N R01W, Sections 30 & 31
- AuSable Outwash Management Area
- Research and Military Special Conservation Area – Camp Grayling
- Grayling Forest Management Unit -
- Compartment 278 (2014 YOE) stand 13 -
- Compartment 280 (2019 YOE) stand 35 -
- State land under long term lease (L-1479) to the Michigan Army National Guard, Department of Military and Veterans Affairs



Photo by Joshua G. Cohen.

Conservation Values -

The Dyer Red Pine (EO ID 10262) is a high-quality example of a rare natural community, Dry Northern Forest, - and is 1 of 5 examples on State Forest Land in the Northern Lower Peninsula Ecoregion. -

- Natural Community Rank: G3, S3, vulnerable throughout range
- Element Occurrence (EO) Rank: BC

Dry northern forest is a pine- or pine-hardwood-dominated forest type that occurs on dry sandy sites lying mostly north of the climatic tension zone. This community occurs principally on sandy glacial outwash and sandy glacial lakeplains, and also commonly on sand ridges within peatlands on glacial outwash or glacial lakeplains. Two distinct variants are included within this community type, one dominated by jack pine (*Pinus banksiana*) or jack pine and hardwoods, and the other dominated by red pine (*P. resinosa*). Prior to European

settlement, dry northern forest typically originated in the wake of catastrophic fire. Frequent, low-intensity ground fires maintained red pine systems by removing competing hardwoods.

For more detailed information refer to the MNFI community abstract:
http://mnfi.anr.msu.edu/abstracts/ecology/Dry_northern_forest.pdf

ERAs should resemble pre-settlement forest conditions. This includes the presence of some larger diameter trees, a fire-maintained understory with conditions suitable for infrequent canopy fire, a relatively high native plant species density and diversity, and an unaltered (or mimicked) natural disturbance regime. This means a lack of evidence of grazing. In subsections where the remaining sites have been harvested, ERAs should be recovered from past harvests, meaning the age of dominant jack pine should be greater than 70 years, while red pine should be greater than 100 years.

Dry northern forest ERAs should be located in areas where they are the dominant community. These areas may also contain a mosaic of dry-mesic northern forest and barrens communities, or be represented as small patches (1- 50 acres) within a mosaic of either of the above communities or within peatland ecosystems.

Site Description

The Dyer Red Pine ERA is a small example (18 acres) of old-growth red pine (*Pinus resinosa*) occurring on a rise within pitted outwash plains with medium- to fine-textured acidic (pH 5.0-5.5) sands. The canopy closure ranges from 50 to 70% and canopy height is between 85 and 100 ft. Large (60-75 cm in DBH) old-growth (170-190 years old) red pines dominate the scattered canopy and supercanopy. Red pine, northern pin oak (*Quercus ellipsoidalis*), and red maple (*Acer rubrum*) are dominant in the subcanopy. Due to decades of fire suppression, red maple is prevalent in the tall shrub layer along with red pine and white pine (*Pinus strobus*) saplings. Balsam fir (*Abies balsamea*) subcanopy cover is concentrated along the swamp edge. Low sweet blueberry (*Vaccinium angustifolium*) dominates the low shrub layer and bracken fern (*Pteridium aquilinum*) dominates the herbaceous layer. Characteristic ground cover species include wintergreen (*Gaultheria procumbens*), Pennsylvania sedge (*Carex pensylvanica*), starflower (*Trientalis borealis*), and red maple seedlings.

Threats Assessment

Continued fire suppression could favor the eventual succession to red maple. The scattered canopy, level topography, and road passing through the site allow for easy access by off-road vehicle traffic. Trails passing through the forest provide conduits for invasive and weedy native species to establish and spread throughout the site. Canada bluegrass (*Poa compressa*), St. John's-wort (*Hypericum perforatum*), and redtop (*Agrostis gigantea*) were all noted, especially along the old roads. Deer herbivory could impede white pine regeneration. Windthrow could be increased if adjacent mature tree cover is harvested. The ERA is within an area leased to the Military for training purposes.

Management Goals

- Maintain and restore a high quality, red pine-dominated Dry Northern Forest natural community
- Maintain an absence of invasive species
- Ensure the ERA has representation of native plants, indicator species, and rare species
- Reduce threats of ORV damage and excessive deer browse
- Allow natural processes to operate unhindered

Management Objectives

- Reintroduce fire to set back natural succession
- Reduce the red maple seed source
- Limit the encroachment of invasive species
- Buffer the ERA to limit impacts of adjacent forest management
- Strengthen agreement with the Military by developing a formal MOU
- Allow blowdown/windthrow, fire, and insect mortality to occur without salvage harvest
- Assess forest regeneration within the planning period
- Assess EO quality every 10-20 years

Management Actions

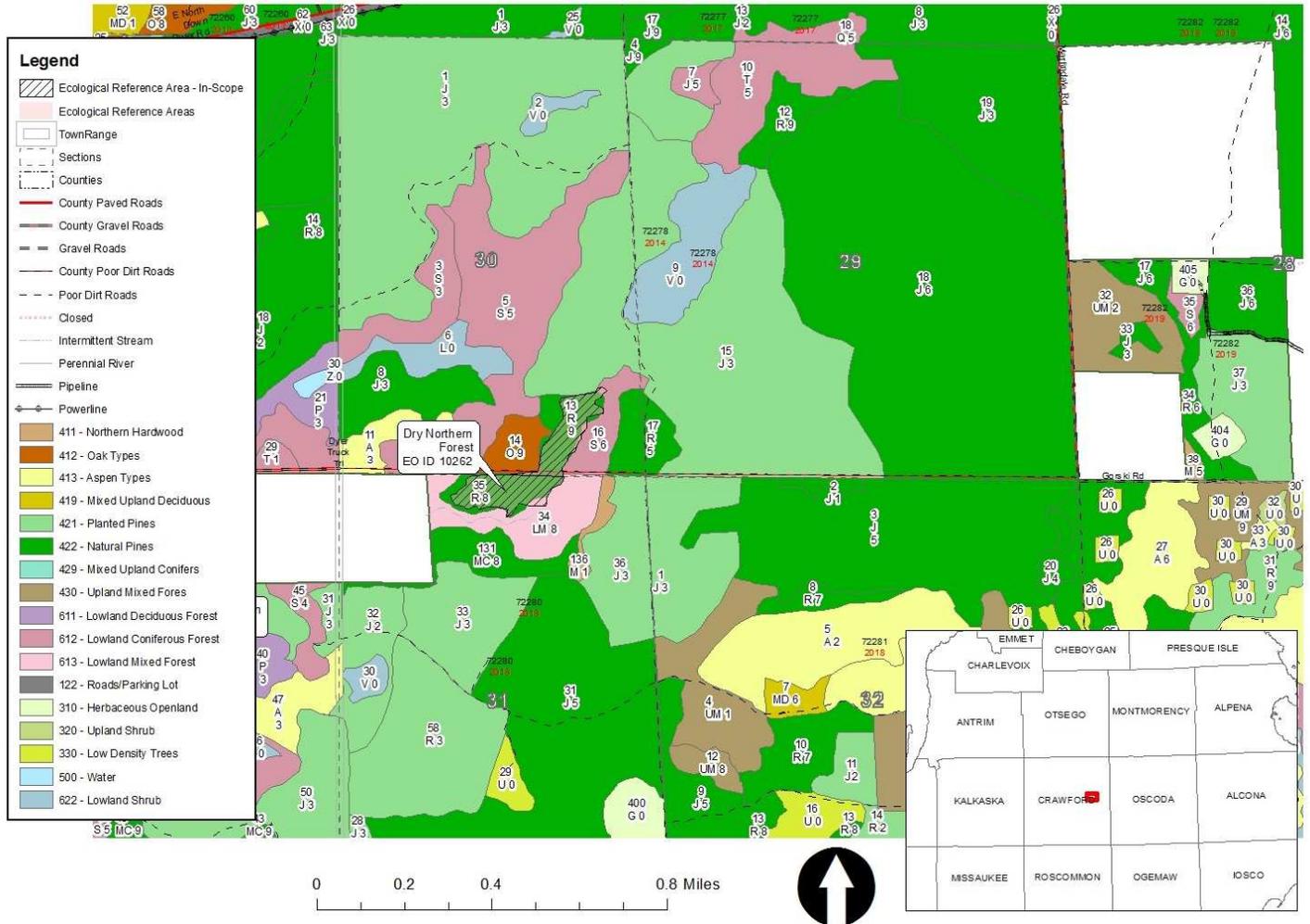
- Use periodic prescribed fire to mimic ground fires and maintain presence of native plant species, reduce invasives, and reduce woody encroachment (red maple and balsam fir)
 - Ideal/range fire return interval for ground fires is 5-20 years for restored sites to promote herbaceous diversity and stimulate regeneration, however due to the prevalence of red maple in the adjacent hardwood conifer swamp, prescribed fire may need to be employed every 3-5 years
 - Summer burning should be employed to simulate naturally occurring lightning season burns
- Prohibit camping under the old pines to minimize soil compaction and introduction of invasive species
- Girdle or remove red maple through manual cutting and/or herbicide to reduce the seed source and supplement prescribed burning
- Monitor for invasive species and take appropriate control measures
- Limit off-road vehicle access
- Design adjacent harvests to not increase the risk of windthrow

Monitoring -

Unless otherwise specified, monitoring is expected to occur once every 10-year cycle. -

Metric	Current Status	Desired Future Status	Assessment
Representative and rare species – species occurrences	Baseline EO Records; updated when EO's are updated	No decreases	TBD
Populations of invasive species – number and scope of species	Severity unknown; treatments should be monitored appropriately; detection monitoring opportunistically or every five years' maximum	Eliminated/fewer occurrences	TBD
Illegal ORV activity – number of new instances and number of citations issued	Moderate; monitored via patrols, reports or opportunistically	Eliminated/fewer occurrences	TBD
Change in EO rank	Various – see above	No decrease	TBD
Presence/Absence of trees > 150 years old	Baseline Forest Inventory, updated every 10 years	Increasing age	TBD
Distribution of understory vegetation	Baseline Forest Inventory, updated every 10 years	Increase in % abundance of pine, decrease in maple and fir	TBD

Dyer Red Pine ERA - General Area Map -



References

- Natural Community Surveys of Potential Ecological Reference Areas, 2008 Joshua Cohen
- MNFI Dry Northern Forest Natural Community Abstract
- 2007 Dyer Red Pine ERA Plan

Approvals

Forest Resources Division	Date	Wildlife Division	Date
Fisheries Division	Date	Parks & Recreation Division	Date -