

# **Nine Mile Complex ERA Plan**

**Michigan Department of Natural Resources**

**Forest Resources Division**

**Roscommon Forest Management Unit**



## Nine Mile Complex ERA Plan

### Administrative Information:

- Nine Mile Complex ERA occurs in 2 larger areas - the Long Crossway Swamp and the Nine Mile Hill Swamp
- Roscommon Forest Management Unit; Ogemaw Hills Management Area (MA) - Compartment 59; Au Sable Outwash MA – Compartments 61, 62, and 84; and Houghton Lake Wetlands MA – Compartment 85
- Roscommon County; T23N, R02W Sections 8-10, 15-17, 20, 21, 28
- Contact information
  - Plan writer: Dale Ekdorn, Forester, Roscommon FMU
  - Local Foresters & Biologists: Steve Anderson, Roscommon FMU, Unit Manager; Mark Boersen, Roscommon FMU, Wildlife Biologist
- State of Michigan owned lands
- Existing infrastructure/facilities: None
- Other documents related to this ERA: None

### Conservation Values

- **Nine Mile Complex ERA** includes the following natural communities:
  - Nine Mile Mesic Forest, Mesic Northern Forest, EO\_ID 18784, EO Rank – BC (Good or fair estimated viability), Last observed 9-1-2011
  - Nine Mile Muskeg, EO\_ID 18785, EO Rank – AB (Excellent or good estimated viability), Last observed 9-1-2011
  - Nine Mile Fen, Poor Fen, EO\_ID 18787, EO Rank – AB (Excellent or good estimated viability), Last observed 9-1-2011
  - Nine Mile Pines, Dry-Mesic Northern Forest, EO\_ID 18783 EO Rank – BC (Good or fair estimated viability), Last observed 9-1-2011
- **Mesic Northern Forest** is a forest type of moist to dry-mesic sites lying mostly north of the transition zone, characterized by the presence of northern hardwoods, particularly sugar maple and American beech. Conifers such as hemlock and white pine are frequently important canopy associates. This community type breaks into two broad classes: northern hardwood forest and hemlock-hardwood forest. It is primarily found on coarse-textured ground and end moraines, and soils are typically loamy sand to sandy loam. The natural disturbance regime is characterized by gap-phase dynamics; frequent, small windthrow gaps allow for the regeneration of the shade-tolerant canopy species. Catastrophic windthrow occurred infrequently with several generations of trees

passing between large-scale, severe disturbance events. Historically, mesic northern forests occurred as a matrix system, dominating vast areas of mesic uplands in the Great Lakes region. These forests were multi-generational, with old-growth conditions lasting many centuries. Optimal condition of this community type is large, contiguous blocks of forest, with characteristic native plant species exhibiting the full range of gap phase dynamics, and the presence of dead snags, stumps and coarse woody debris. Presence of all-aged structure, multi-cohort hemlock and/or white pine, canopy gap dynamics in deciduous and coniferous dominated areas. Hemlock 220-250+ years old and sugar maple greater than 170 years old. Quality sites have large diameter (>60 cm) snags and live trees (Cohen 2005); advanced regeneration and a diverse herbaceous layer present, with minimal evidence of excessive herbivory. Invasive species populations are minimal. Stands with little evidence of much grazing, and recovered from any affects. For more information refer to the MNFI Community Abstract

[http://mnfi.anr.msu.edu/abstracts/ecology/Mesic\\_Northern\\_Forest.pdf](http://mnfi.anr.msu.edu/abstracts/ecology/Mesic_Northern_Forest.pdf)

- Description from the Element Occurrence Record for **Nine Mile Mesic Forest**: Closed-canopy (85-100%) dominated by American beech with canopy associates including sugar maple, red oak, and hemlock. In addition, white pine, white ash, and paper birch are scattered in the canopy. Most canopy trees are 30-50 cm in DBH with some scattered 60-80 cm sugar maple and American beech. Hemlock and white pine are concentrated at the northern end of the island. The sparse understory is characterized by hornbeam, American beech, and sugar maple. The low shrub layer is also sparse with American beech and sugar maple. The ground cover is patchy to sparse with characteristic species including sugar maple seedlings, Canada mayflower, beech drops, downy Solomon's seal, partridgeberry, stiff clubmoss, various Carex species, wintergreen, rice grass, and bracken fern. The soils are characterized shallow (5-8cm) acidic (pH 4.5) organics over fine-textured acidic (pH 4.5-5.0) sands.
- Other High Conservation Values Present: Old forest/mixed age stand that includes trees >120 years old (Possible Type 1 or 2 Old Growth)
- Other Values for Consideration: None
- **Muskeg** is a nutrient-poor peatland characterized by acidic, saturated peat, and scattered or clumped, stunted conifer trees set in a matrix of sphagnum mosses and ericaceous shrubs. The community primarily occurs in large depressions on glacial outwash and sandy glacial lake plains. Fire occurs naturally during periods of drought and can alter the hydrology, mat surface, and floristic composition of muskegs. Windthrow, beaver flooding, and insect defoliation are also important disturbance factors that influence species composition and structure. High-quality occurrences are virtually undisturbed and should exclude portions of the muskeg damaged by ditching and road building. Stable hydrology is the most important characteristic of muskegs and other peatlands. Changes in hydrology can lead to muskegs becoming bogs or poor

conifer swamps. Larger sized muskegs (200+ acres) that are part of even larger peatland complexes (1000s acres) that have natural disturbance such as beaver, fire, insect, and windthrow occurring without significant anthropogenic disturbance are of the highest quality. For more detailed information see the MNFI abstract.

<http://mnfi.anr.msu.edu/abstracts/ecology/Muskeg.pdf>

- Description from the Element Occurrence Record for **Nine Mile Muskeg**: The open canopy of the muskeg is characterized by scattered and stunted black spruce, tamarack, and white pine with occasional jack pine and paper birch. Pines are most common near the upland margins. Canopy closure ranges from 5-40% but is typically 5-25% and canopy trees range from 2-15 cm DBH and 1-8 m in height. The understory is characterized by sapling black spruce, tamarack, and white pine, red pine, and jack pine along with mountain holly and purple chokeberry. The transitional margins of muskeg to poor fen and northern shrub thicket are characterized by a slight minerotrophic influence as indicated by the presence of bog birch and speckled alder. The low shrub layer is dominated by dense ericaceous shrubs including leatherleaf, bog rosemary, pale Laurel, various *Vaccinium* species, Labrador tea, mountain holly and purple chokeberry. The ground cover is characterized by sphagnum species, few-seed sedge, beaked sedge (especially near the transition from muskeg to poor fen), American beech. The soils are characterized by deep (80cm to > 1 m) saturated peats that are acidic (pH 4.6). Along the margins of the muskeg, the peats are shallower (80cm) and overlie wet sands with a lens of clay (pH 5.0). Sphagnum hummocks and hollows are prevalent in the muskeg and provide microsite diversity by creating small-scale gradients in soil moisture and soil chemistry.
- Other High Conservation Values Present: None
- Other Values for Consideration: None
- **Poor Fen** is a sedge-dominated wetland found on very strongly to strongly acidic, saturated peat that is moderately influenced by groundwater. The community occurs north of the climatic tension zone in kettle depressions and in flat areas or mild depressions on glacial outwash and glacial lake plain. High-quality poor fens are undisturbed and associated with high quality wetlands and upland communities. Native plant diversity is characteristic of species documented in baseline surveys (Cohen et al. 2008) and MNFI community descriptions and exhibit the full range of vegetative zonation appropriate for the landscape. Invasive species populations are minimal. Hydrology is unimpeded by ditching, diking, or damming, and there should be no evidence of past plowing. The upland area that feeds groundwater into the fen is protected and maintains the quality of groundwater (chemicals, nutrient levels, etc.).

Periodic fire disturbance is maintained. For more detailed information see the MNFI Community Abstract [http://mnfi.anr.msu.edu/abstracts/ecology/Poor\\_Fen.pdf](http://mnfi.anr.msu.edu/abstracts/ecology/Poor_Fen.pdf)

- Description from the Element Occurrence Record for **Nine Mile Fen**: The open canopy of the shrub fen is characterized by scattered and stunted tamarack, black spruce, and white pine. Canopy closure ranges from 10-25% and canopy trees range from 2-15cm DBH and 1-6m in height. The understory of the shrub fen is 15-40% and is dominated by bog birch with associates including mountain holly and sapling tamarack, black spruce, and white pine. The low shrub layer is 50-70% dominated by leatherleaf, pale Laurel, bog Rosemary, Labrador tea, and bog willow. The ground cover of the shrub fen is characterized by sphagnum species, woolly-foot sedge, various cotton-grasses, various Vaccinium species, twig rush, starry false Solomon's seal, common cat-tail, water horsetail, flat-leaved bladderwort, dwarf iris, purple bladderwort (pitcher plant), marsh cinquefoil, rose pogonia, bog buckbean, bog goldenrod, and water arum. The graminoid-dominated portion of the poor fen occurring within the water track is dominated by beaked sedge and woolly-fruit sedge with ground layer associates including large cranberry, small cranberry, twig rush, few-seed sedge, common cat-tail, and cotton-grass. This portion of the fen is much wetter than the shrub fen and is virtually treeless and shrubless with scattered woody species including bog birch, leatherleaf, bog rosemary, pale laurel, black spruce, white pine, and tamarack. Within the graminoid-dominated fen the soils are characterized by inundated to saturated acidic (pH 5.0 and 90cm deep) peats over wet acidic sands (pH 5.2-5.5). The soils of the shrub fen are characterized by saturated to inundated peats that are acidic (pH 5.5-6.0 and >1 meter deep). Scattered sphagnum hummocks and sedge tussocks provide microsite diversity by creating small-scale gradients in soil moisture and soil chemistry.
- Other High Conservation Values Present: None
- Other Values for Consideration: None
- **Dry-Mesic Northern Forests** are pine or pine/hardwood dominated communities, principally occurring on sandy glacial outwash, sandy glacial lake plains, and less often on inland dune ridges, coarse-textured moraines, and thin glacial drift over bedrock. Prior to settlement, it originated in the wake of catastrophic stand replacing fire, and was maintained by frequent, low intensity ground fires. Dry-mesic northern forests are typically dominated by white pine and/or red pine, with hemlock, red oak, white oak, black oak, beech, and red maple as common associates. Aspen components should be minor and declining, with recruitment of pine likely or already occurring. Older and larger diameter red and white pine (and hemlock when present) should be present. For more detailed information refer to the MNFI Community Abstract: [http://mnfi.anr.msu.edu/abstracts/ecology/Dry-mesic\\_northern\\_forest.pdf](http://mnfi.anr.msu.edu/abstracts/ecology/Dry-mesic_northern_forest.pdf)

- Description from the Element Occurrence Record for **Nine Mile Pines**: Closed-canopy dominated by white pine and red pine with canopy associates including red oak, red maple, and paper birch. Canopy dominates typically range in DBH from 40-65cm with some white pines reaching 65-85cm. The scattered sub-canopy is characterized by red maple, white pine, and balsam fir. White pine regeneration is locally dense within the understory. Additional understory species include balsam fir, red maple, various spruce species, and red oak. The low shrub layer is patchy and is dominated by black huckleberry and Vaccinium species with red maple, white pine, mountain holly, and red maple saplings common. The ground cover is patchy to sparse with characteristic species including bracken fern, bunchberry, goldthread, Canada mayflower, wild sarsaparilla, starflower, Pennsylvania sedge, and red maple seedlings. The soils are characterized by a needle mat of variable depth (15-20cm in flat areas and 2-10cm higher up on the ridge) over moist fine-textured acidic (pH 4.5-6.5) sands.
- Other High Conservation Values Present: Natural Origin Pine Stand and Old forest/mixed age stand that includes trees >120 years old (Possible Type 1 or 2 Old Growth)
- Other Values for Consideration: None

## Threats Assessment

Primary threats include:

- Creating roads/access points where they do not currently exist increasing the potential for invasive species encroachment and hydrologic change
- Fire suppression of light intensity fires within the complex which are needed to maintain the ERA
- Addition of ditching, diking, or culverts which alter the natural hydrology of the area
- Timber harvest within the adjacent uplands which have the potential to alter the hydrology of the area

Potential long-term threats include:

- Development of the private parcel in the NWNW of Section 15 contiguous to the Muskeg and Mesic Northern Forest portion of the ERA
- Mineral development on the site as parts of this area have been identified for potential potash mining leases.

## Management Goals

- Management goals for the Muskeg and Poor Fen portions of the ERA complex
  - Manage for intact and functioning hydrology
  - Maintain an absence of invasive species

- Allow natural processes to occur
- Management goals for the Mesic Northern Forest and Dry Mesic northern Forest portions of the ERA complex
  - Manage for an un-fragmented forest with a closed canopy and large, old (>120 years) trees
  - Maintain an absence of invasive species
  - Ensure a representation of native plants, indicator species, and rare species
  - Allow natural processes to occur

## Management Objectives

- Allow natural processes to take place including fire
- Maintain road-less aspect of the area by allowing no new roads or access points
- Maintain hydrology of the area by allowing no new ditches, dikes, or culverts
- Limit timber harvest within the ERA itself and limit silvicultural activities on the perimeter of the ERA to ones which maintain the hydrology of the area
- Monitor for and address invasive species

## Management Actions

- Write a wildfire plan to (1) incorporate a “Let Burn” policy on all fires within the ERA where safety concerns allow; and (2) limit/confine fire suppression to the upland buffer around the ERA
- Write access/hydrology plan limiting or discouraging new roads/access points and new dikes/ditches/culverts
- Write any necessary prescriptions for stands within the 2019 YOE compartment (71061) which preserve the areas hydrology. The rest of the stands in adjacent compartments will be handled during their YOE compartment review process
- Assess area for invasive species as needed
- Purchase outright, use a Conservation Easement, or work with adjacent landowner to manage portion of ERA on private property in the NWNW of Section 15

## Monitoring

- Wildfire Plan written and approved
- Access/Hydrology plan written and approved
- Prescriptions written and approved
- Private parcel in state ownership or conservation easement or other ERA management agreement with the landowner obtained

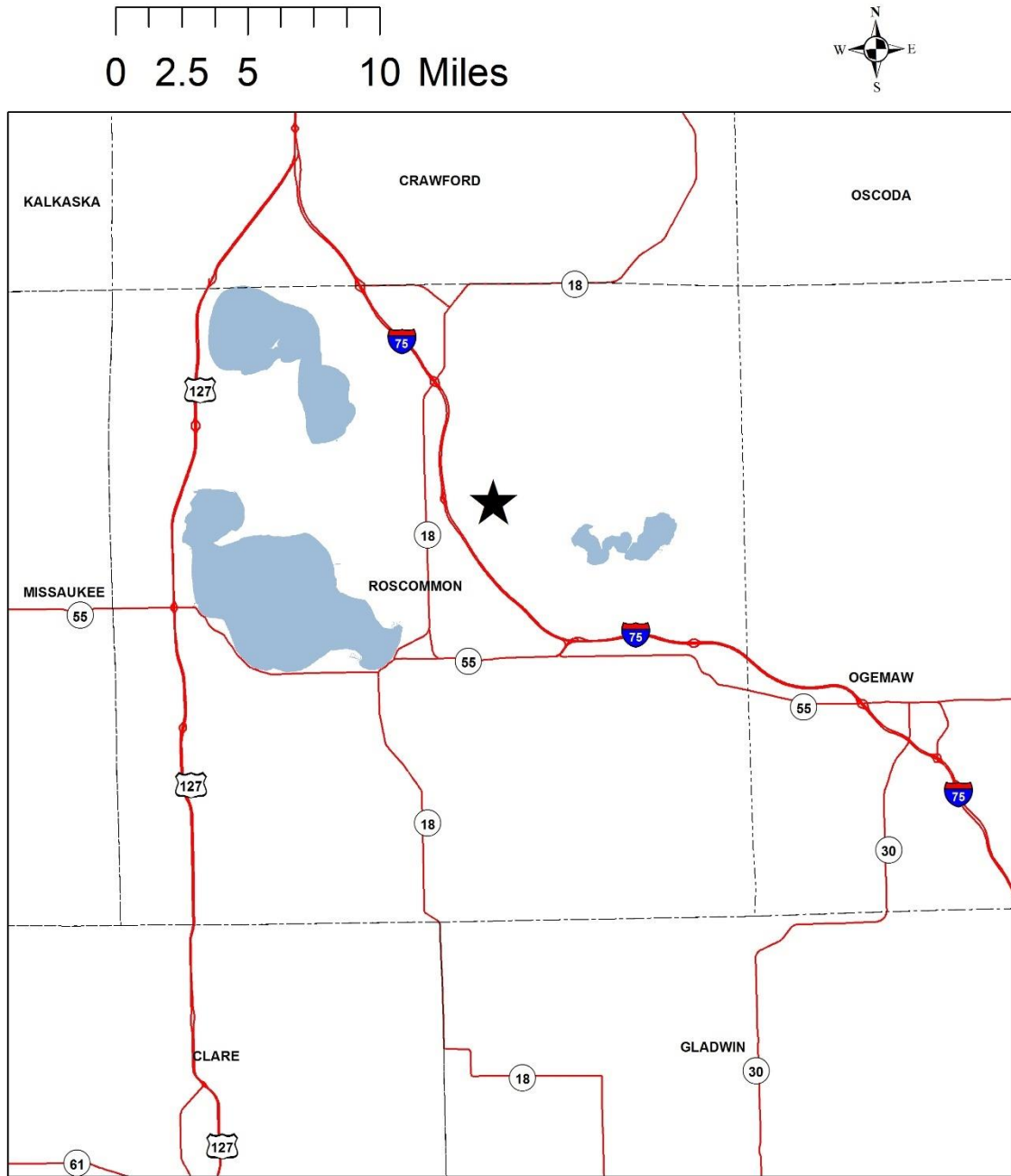
Indicator	Current Status	Desired Future Status	Summary Assessment
Wildfire Plan	None	Approved Plan	TBD
Treatment Rx's	None	Approved at 2019 CR	TBD
Access Plan	None	Approved Plan	TBD
Land Acquisition	Private Ownership	State Owned, Cons. Easement, or other agreement obtained	R-4077 Filed

**Imagery:**

- Site Location



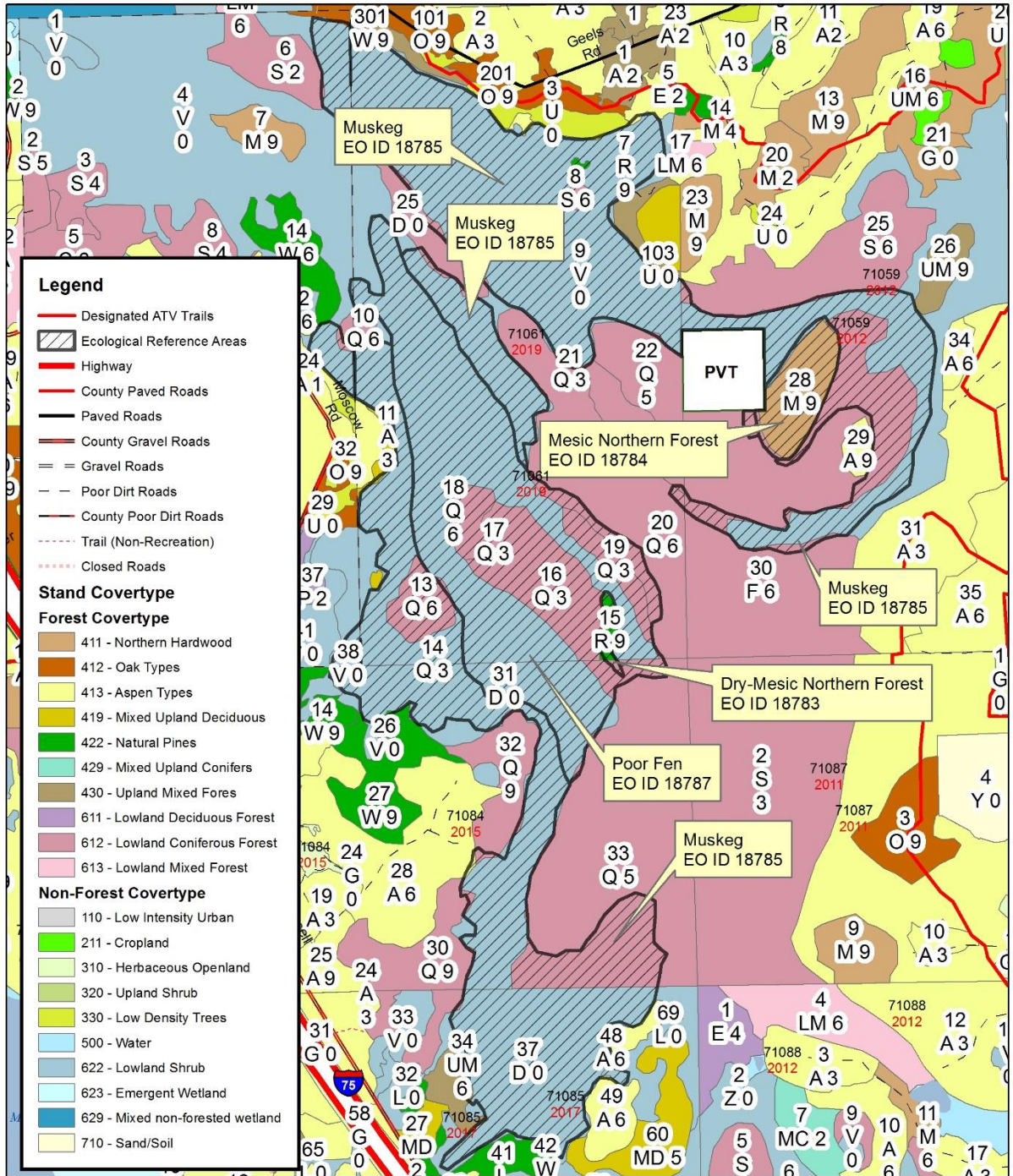
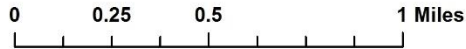
# Nine Mile Complex ERA Locator Map



D. Ekdorn 11-28-2016

- Site Map

# Nine Mile Complex ERA Site Map



D.Ekdom 11/29/2016

**Signatures & Approval Date:**

- Each plan will require formal approval from all relevant resource divisions this will be accomplished during the compartment for the Roscommon unit
- This meeting is scheduled for September 20<sup>th</sup> 2017 at the Roscommon Customer Service Center