

**Massachusetts Department of Conservation and Recreation
Bureau of Forest Fire Control and Forestry
Forest Management Proposal
Name: Norway Spruce Removal / Pine Barrens Restoration**

Date Posted:	March 15, 2019
End of Comment Period:	April 29, 2019
Region:	South
Recreation District:	Cape Cod.
Forest Management District:	Southeast
State Forest:	Myles Standish State Forest
Closest Road:	Bare Hill Road
Town	Carver / Plymouth
Contact Information:	Paul Gregory 194 Cranberry Road P.O. Box 66 South Carver, MA02366 (508) 465-9372 paul.gregory@mass.gov

Overview:

The objective is to complete an ecological restoration of open pitch pine (*Pinus rigida*) and scrub oak (*Quercus ilicifolia*) communities, which are often referred to as ‘Pine Barrens’. These open natural communities are fire-adapted, and in the future mowing and possibly prescribed burning will be employed to maintain these unique communities. Human effort to exclude fire in these pine barrens areas over the past half-century have favored growth of Norway spruce (*Picea abies*) over pitch pine and scrub oak. Many plantations of exotic softwood trees were established on former pine barrens habitat or are adjacent to existing pine barrens. The project is located wholly within the designated Reserve of Myles Standish State Forest.

The ecological restoration project was selected for forest management at this time because:

- Non-native plantation removal is a high priority for pine barrens management in the 2011 resource management plan for the Myles Standish planning unit as well as in the 2007 Biodiversity of Myles Standish State Forest report from Natural Heritage and Endangered Species Program (NHESP).
- The existing non-native plantations are generally low in species diversity.
- Builds upon previous non-native plantation removal.

The Myles Standish State Forest ecological restoration project endeavors to:

- Restore native pitch pine-scrub oak barrens, pine barrens, to provide habitat for a diversity of endangered species as well as common species.
- Demonstrate harvesting techniques and silvicultural operations that restore native communities.
- Fulfill management approaches for Reserves as directed by the Forest Futures Visioning Process (2010) and subsequent Management Guidelines (2012). From page 20 of the Guidelines "... some situations may call for ecological restoration and vegetation management. Situations where some management may be appropriate include the removal of invasive species or for the protection of existing rare species. Fire adapted Reserves in Southeastern Massachusetts may require active restoration and management to maintain habitat for rare species and reduce the risk of catastrophic wildfire that can threaten human health and safety."

Project Area Description:

Stand Information:

There are two Norway spruce stands and isolated pockets of Norway spruce located in close proximity in Myles Standish State Forest, totaling approximately 62 acres. These plantations were planted after the 1957 wildfire. Understory vegetation consists mainly of black huckleberry (*Gaylussacia baccata*), low bush blueberry (*Vaccinium angustifolium*), and scattered scrub oak. The density of Norway spruce is highly variable across the plantations. Some areas have a high density of Norway spruce with little else growing, whereas other areas have scattered Norway spruce among Pitch pines. White pine (*Pinus strobus*) is found in these plantations at very low densities. Tree planter plough marks can still be seen from the planting of the Norway spruce. A buried gas line is just east of the project area.

Topography:

The plantations are composed of gentle to rolling terrain. Many small bowl-shaped depressions are found throughout the plantations.

Soil:

The soils of the Norway spruce plantations are classified mainly as coarse sands that are excessively drained. These are the result of glacial outwash.

Previous Silvicultural Treatments:

The Norway spruce plantations have no record of past silvicultural treatments. Adjacent red pine plantations were removed in 2014 and 2015.

Aesthetics, Recreation, Wetlands, Cultural, Rare Species and Wildlife Considerations:

Aesthetics:

As whole tree removal will occur, the resulting landscape will have a dramatic change in appearance as large clearings will be created. It is expected that only a small amount of slash will remain on site after the trees are removed. Forest roads and paved bike paths adjacent to plantations will be cleared of all debris following operations.

Given the objective to remove the non-native plantations there will be no retention of road or pave bike path buffers. Visuals in the pave bike path area where harvest occurs will change from a forest canopy to an open woodland or a shrubland savannah. Because Norway spruce will be removed to promote native pitch pine, scrub oak, and shrubs, the landscape view will change from a single species forest monoculture to a more diverse and native shrubland or woodland community.

Recreation:

Basketball, bicycling, boating, canoeing/kayaking, dog walking, fishing, geocaching, hiking, horseback riding, hunting, nature study, picnicking, running/jogging, skiing- cross-country, snowmobiling, snowshoeing, swimming, and volleyball occur in Myles Standish State Forest throughout the year.

Bare Hill Road is near, but not directly abutting, the proposed project area. Three Cornered Pond Road, Jessup Road, and Musquash Road directly abut the proposed project area. A small section of the paved bike path abuts the proposed project area. No trails are abutting or within the proposed project area, but one illegal trail is within the western most parcel. A small dirt parking lot is just north of the project area. The bike path and the parking lot will be closed during harvesting activity. DCR Management Guidelines of 2012 state that all trails that interface with forest management will include a 50 foot wide corridor on each side of the road or trail. However, the Guidelines also state that if deemed appropriate by DCR and reviewed by the Forest Reserves Science Advisory Committee (FRSAC), removal of hazardous trees directly adjacent to official DCR trails and abutting properties may be allowed.

Wetlands:

All required BMP's set forth in the most recent edition of the "Massachusetts Forestry: Best Management Practices Manual" will be implemented across the project area. No wetland resources occur in the project area. A shrub swamp (an abandoned cranberry bog) exists south of the most southern parcel located on the west side of Jessup Road. The proposed timber harvest area is not within 100 feet of a certified vernal pool according to the Natural Heritage & Endangered Species Program (NHESP) datalayer downloaded September 14, 2018 available from MassGIS.

Cultural Resources:

Several charcoal pits exist within the project area. The project will have an archeological review and evaluation by DCR's archeologist. Any recommendations will be incorporated into the final silvicultural prescription.

Rare and Endangered Species & Wildlife

The proposed project area is within priority habitats of rare species as published in the current 14th Edition of the Massachusetts Natural Heritage Atlas. (<https://www.mass.gov/service-details/regulatory-maps-priority-estimated-habitats>.)

The pitch pine-scrub oak barrens within Myles Standish State Forest provide habitat for a diversity of state-listed animals and plants, including many species of moths and butterflies, tiger beetle species, and plant species. Most of these barrens species rely on a habitat with an open vegetation structure, such as scrub oak shrublands and heathlands. Per the 2007 Biodiversity of Myles Standish State Forest report from NHESP, plantation removal of non-native species is the highest priority recommendation for pine barrens management.

Myles Standish State Forest is also an Important Bird Area (IBA) as designated by Mass Audubon. An IBA is a site providing essential habitat to one or more species of breeding, wintering, and/or migrating birds. The state forest is a significant breeding site for regional high

conservation priority species such as: Whip-poor-will, Brown Thrasher, Prairie Warbler, Eastern Towhee, and Field Sparrow, all of which will benefit from the proposed treatment.

Animals noted in the project area were white-tailed deer, red squirrels, and chickadees. Refer to pages 165 to 179 of the Massachusetts Wildlife Action plan at: <https://www.mass.gov/service-details/state-wildlife-action-plan-swap>. This document provides detailed description of animals found in Pitch pine-Oak Upland forests.

Sale Layout and Harvesting Limitations:

Project access: Access to the project area will be from Bare Hill Road.

Landings: Three landings will be located on Three Cornered Pond Road. One of these landings is from the 2014/2015 red pine removal forest management project. Two landings will be utilized on Musquash Road. Both are from previous forest management projects. The western landing on Musquash Road was used back in a 2006 forest management project. The eastern landing on Musquash Road was used in the 2014/2015 red pine removal forest management project. Access to the most western landing on Musquash Road will be from Three Cornered Pond Road to Jessop Road. This is due to parts of Musquash Road being in rough condition.

Skid Road and Trails: Portions of existing forest roads will be utilized as skid roads. Additional skid trails will also need to be created. Portions of existing forest roads will require gravel to stabilize soft sandy areas for equipment and log and chip trucks.

Wetland & Stream Crossing: None at this time.

Road and Trail Buffers: The bike path will be closed during harvesting activity. DCR Management Guidelines of 2012 state that all trails that interface with forest management will include a 50 foot wide corridor on each side of the road or trail. However, the Guidelines also state that if deemed appropriate by DCR and reviewed by the Forest Reserves Science Advisory Committee (FRSAC), removal of hazardous trees directly adjacent to official DCR trails and abutting properties may be allowed.

Equipment limitations: Timber harvesting equipment will be restricted to its ability to process whole trees. There will be whole tree harvesting. Skidding will be permitted to provide scarification for Pitch pine and scrub oak regeneration.

Excluded areas: Charcoal sites will be marked to exclude equipment. Trees along the edges of charcoal sites will be removed. Trees within the interior of charcoal sites will be girdled to eliminate seeding and to provide snags for a variety of wildlife.

Erosion and Sedimentation: All work will be limited to dry, frozen, or otherwise stable soil conditions. Unwanted movement of soil will be controlled by following recommendations in the Massachusetts Forestry: Best Management Practices Manual.

Site Restoration: Upon completion of harvest activity all forest roads, skid roads, and skid trails and landings will be stabilized with water bars to the recommendations found in the Massachusetts Forestry: Best Management Practices Manual.

In-kind Services: Three Cornered Pond Road from Bare Hill Road west to the DCR gate is in need of maintenance and repair. Services may include gravel, grading, and drainage work where needed.

Proximity to Designated Forest Reserves: The project is within the Myles Standish Reserve. It has been reviewed and approved by the FRSAC.

Silviculture:

Primary and secondary goals: The primary silvicultural goal is to establish native Pitch pine and scrub oak regeneration in areas lacking such species, and to release these native species currently under Norway spruce. A secondary goal is to increase the structural and native species

diversity of the forest. These objectives will provide habitat and food for rare and common wildlife species.

Silvicultural Method: Norway spruce will be removed by whole-tree harvesting and chipping, with all chips removed from the site to allow for future use of prescribed fire and/or mowing in maintaining the pine barrens habitat. From page 65 of the Landscape Designations for DCR Parks & Forests: Selection Criteria and Management Guidelines (2012) “On DCR harvests this tool [Whole Tree Harvesting and Woody Biomass Removal] may be used in limited circumstances in order to:...Intentionally impoverish site conditions and reduce fuel loads when converting plantations on sand-plain ecosystems to native scrub oak, tree oak and pitch pine vegetation communities.”

Desired Future Conditions: The desired condition is to establish regeneration of pitch pine, tree oak, scrub oak, and other native shrubs and plants. Existing patches of native species will be free to grow.

Anticipated Future Treatments:

Short Term

The objective is to restore these stands to native open woodlands or shrublands characterized by pitch pine, tree oaks, scrub oak and associated native shrubs. Portions of the Norway spruce plantations have pitch pine scattered within the canopy and scrub oak, and native shrubland species underneath. Removing the Norway spruce will result in an open shrubland habitat in some areas, and an open Pitch pine woodland in other areas. Both will provide a benefit to a variety of rare, declining, and common species. White pine interspersed within the plantations will be removed as well. Approval from the DCR Commissioner will be required for openings above 1/3 acre that harvest all merchantable trees.

Long Term

Future silvicultural treatments will be prescribed burning, mowing, and a combination thereof to kill white pines that typically sprout in such areas and to stimulate sprouting and growth of native shrubs. Active management using these methods will be planned in coordination with NHESP and done at variable frequencies and intensities to encourage a mosaic of pine barrens, shrublands, and woodland communities.

Attached: Topographic map showing project details. Locus map showing project location within regional context.

District Forester: Paul Gregory

Date: 12/13/18

Field Operations Team Leader
Or Park Supervisor: JHC Robert

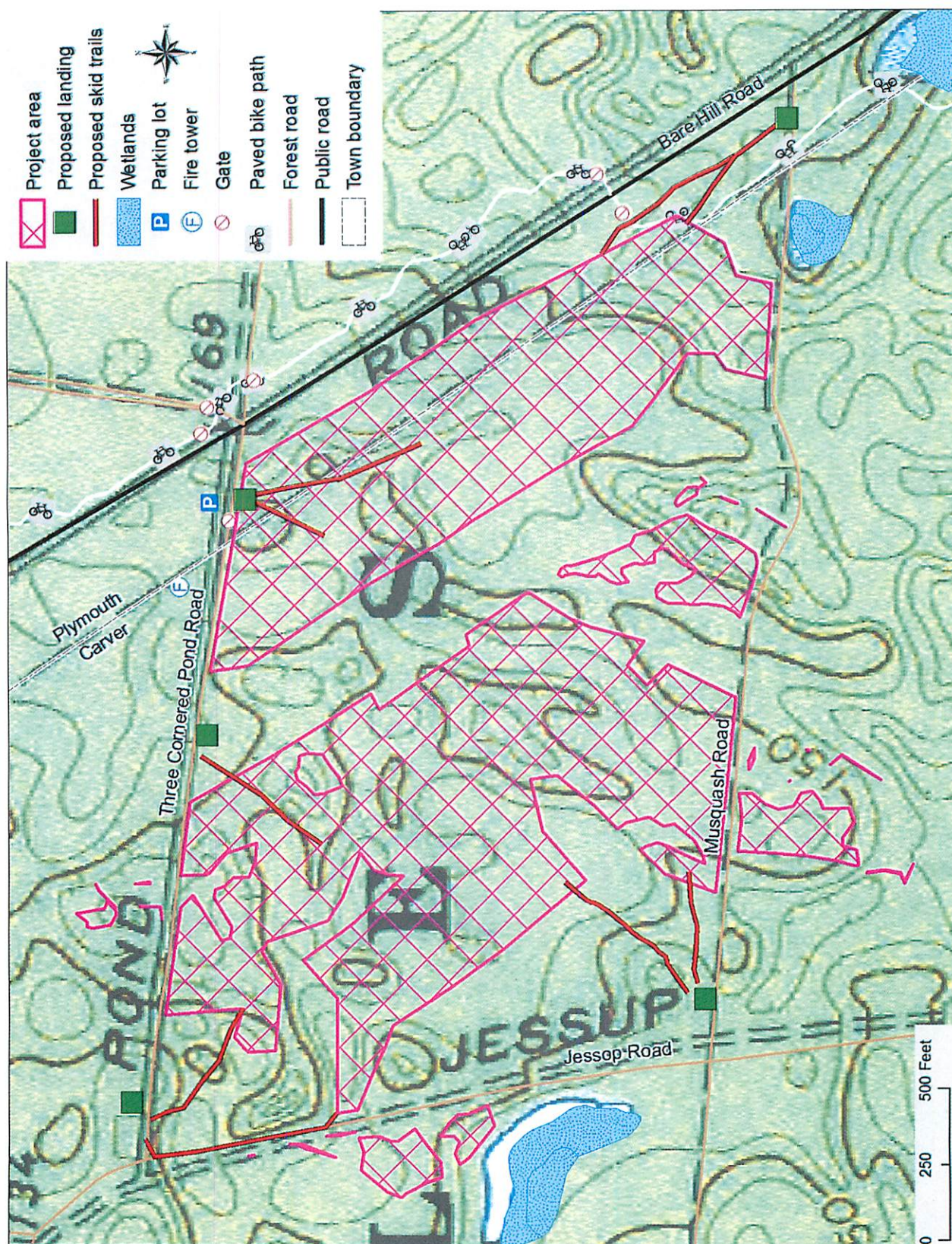
Date: 12/13/18

Regional Director: Tom Rosta

Date: 12/17/18

Management Forestry
Program Supervisor: William Hill

Date: 1/2/2019



Norway Spruce Removal / Pine Barrens Restoration Myles Standish State Forest - Locus Map

