Massachusetts Department of Conservation and Recreation
Bureau of Forest Fire Control and Forestry
Forest Management Proposal
Name: Northfield State Forest – Birnam Road

Date Posted: June 30, 2021
End of Comment Period: August 14, 2021

Region:	**Central**
Recreation District:	**CT Valley**
Forest Management District:	**Eastern CT Valley**
State Forest:	**Northfield State Forest**
Closest Road:	**Birnam Road and School Street**
Town	**Northfield**

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Overview:

Northfield State Forest consists of approximately 3,529 acres and is predominantly located on the eastern edge of the town of Northfield. In 2016, through a collaboration with the Trust for Public Land, DCR acquired a +/-1,200 acre parcel located in the north east portion of Northfield from the Northfield Mount Hermon School. This large tract of forested land has a rich history of forest management and recreational use. The proposed forest management project area will be located within this larger parcel and is expected to encompass approximately 165 acres, between Birnam Road and School Street.

The intent of this forest management project is to further diversify forest conditions by implementing group selection as well as a variable density thinning across the project area. This project will also provide for an opportunity to collaborate with the University of Massachusetts – Amherst to both study the interaction between vegetative diversity, forest management, and forest carbon stocks and flux; and to engage in outreach on those interactions with the general public as well as regional land stewardship professionals; and research permits will be sought as needed.

All of Northfield State Forest is designated as “woodland”, per the “Landscape Designations for DCR Forests and Parks: Selection Criteria and Management Guidelines”. This project will aim to achieve an array of ecosystem services as they are described in the above mentioned document; including diversification of forest structure, consideration and enhancement of carbon sequestration and storage, and sustainable production of renewable wood products, among others.

Project Area Description:

Stand Information

This project area has a history of more recent forest management, with harvests occurring in different portions of the area in 1997, 2005, 2010, and 2013. No earlier records pertaining to forest management were readily available for review, with the exception of a 1989 forest stand map which indicated a small stand of white pine recommended for liberation. Each of the entries occurred in slightly different locations and their overall goals varied from emergency salvage, to selective thinning, to crop tree release with group selection.

Stand conditions vary across the project area. Dominant overstory species present include eastern white pine (*Pinus strobus*), northern red oak *(Quercus rubra*), black oak (*Quercus velutina*), eastern hemlock (*Tsuga canadensis*), black birch (*Betula lenta*), and red maple (*Acer rubrum*), among other less-prevalent hardwood species. Species composition varies throughout, with white pine being present across all stands. Previous forest management has diversified forest conditions across the project area and allowed for the establishment and release of regeneration. Further stand mapping, delineation, and assessment will occur across the project area, along with the implementation of a comprehensive forest inventory. This initial inventory will be designed in collaboration with staff from the University of Massachusetts – Amherst.

Several invasive species were identified during preliminary field work, including glossy buckthorn (*Frangula alnus*), Oriental bittersweet (*Celastrus orbiculatus*), multiflora rose (*Rosa multiflora*) and Japanese barberry (*Berberis thunbergii*). Densities varied throughout the project area, with higher densities observed along the edge of Birnam Road. Some level of control measures will be implemented in conjunction with forest management activities.

Topography and Soils

The USGS topographic maps indicate that this site consists of south and west facing slopes. Soils present on this site include Walpole sandy loam, Ridgebury fine sandy loam, Chatfield-Hollis complex, Canton-Chatfield-Hollis complex, Hinckley loamy sand, Sudbury sandy loam, Agawam fine sandy loam, Montauk fine sandy loam, Scituate fine sandy loam, and Canton fine sandy loam. Drainage classes for these soil types range from poorly drained to excessively drained, with the majority of them being well-suited for forest management.

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

Aesthetics: Visual buffers will be implemented along publicly maintained roads; see below for additional information about buffers and outreach along designated trails. Slash, as a result of forest management operations, will be lopped and in compliance with current slash law regulations.

Recreation: There is an extensive trail system located within the larger parcel, with several of these trails crossing the proposed project area. These trails are used for hiking, biking, and skiing, among other recreational activities. No ATV use is permitted within the state forest. Sections of trails will be closed temporarily during active harvesting operations but will be cleared of debris post-harvest.

Some aesthetic buffers may be waived along designated trails to allow for future opportunities to demonstrate and interpret forest management practices that occur on DCR – Division of State Parks and Recreation properties.

Wetlands: It is expected that several wetland resources are present within the proposed project area; including forested wetlands, possible vernal pools, intermittent and perennial streams, and wet seeps. At this time, no harvesting is expected to occur within identified wetlands or within 50 ft. of regulated stream courses. All wetland resources will be mapped and identified in the field.

Cultural Resources: There are currently no cultural resources identified within the proposed project area. Prior to implementation, this project will be reviewed by DCR Archeology staff. Any cultural resources discovered throughout future field work will be identified, mapped and brought to the attention of DCR Archeology staff for additional review.

Rare and Endangered Species: According to the most recent Natural Heritage and Endangered Species Program (NHESP) layer available at www.mass.gov/mgis, there are no current concerns regarding Estimated or Priority Habitat. This project will be reviewed by NHESP prior to implementation.

Wildlife: Wildlife sign observed during preliminary reconnaissance include deer, turkey, moose, and several bird species, among others. It is anticipated that several upland wildlife species may be present at any given time. The following wildlife habitat considerations will be implemented with this forest management project, as required by the DCR Management Guidelines document:

- Retention of at least 1 to 3 large diameter trees (where possible >18 in. dbh) and 4 live 10in. -12 in.dbh trees per acre that have the potential to serve as cavity and den trees and future snags.
- Retention of all dead snags and stubs in the harvest area as safe operating conditions allow.
- Retention of on average one of the oldest, largest diameter, well-formed dominant trees (where possible > 18 in. dbh) per acre in harvest area to serve as legacy trees.
- Maintain a minimum of 256 cubic feet per acre of coarse woody material (CWM) within the harvest area.

Sale Layout and Harvesting Limitations:

At this early phase of the project there are no limitations on possible equipment used for forest management operations. Equipment limitations may be implemented as more information on the overall site and forest conditions become available. Care will be given to protect all existing regeneration, except in areas designated by the forester. Operations will only occur in dry, frozen, or otherwise stable ground conditions. Multiple landing locations and access points may be necessary to minimize disturbance to wetlands or otherwise sensitive areas. These access points will most likely occur along Birnam Road and/or School Street.

All best management practices, as described in the most recent "Massachusetts Forestry – Best Management Practices Manual", will be met or exceeded. It is expected that the total actively managed acreage will be reduced due to the exclusion of areas deemed too steep, sensitive, or otherwise inoperable.

Improvements are expected to occur within the state forest as a result of in-kind services provided through forest management activities, including but not limited to invasive species control, road maintenance, infrastructure improvements, etc.

Silviculture:

Silviculture implemented on this site is expected to occur in the form of group selection and variable density thinning. Group opening sizes will be limited to less than 1 acre and are intended to create conditions favorable for the regeneration of an array of species. Per the guidelines described in the DCR Landscape Designations document, Commissioner approval is required prior to the implementation of forest management strategies which employ canopy openings exceeding 1/3 acre in size. Variable density thinning will occur between the group openings throughout the project area and will focus on the removal of less vigorous or poorly formed individuals. This thinning will result in increased productivity in residual trees and an increase in available resources for the residual stand. Alterations to the above mentioned silviculture may occur as more information pertaining to current stocking levels and forest conditions is obtained through an intensive forest inventory.

It is expected that this stand will continue to develop as an uneven-aged stand with a variety of mid-tolerant and intolerant tree species present. Future monitoring will be conducted to evaluate an array of forest conditions; including presence and abundance of regeneration, residual stand conditions, and the status of invasive species present. Future management strategies are expected to include further diversification of forest structure and condition and will most likely include continued invasive species control.

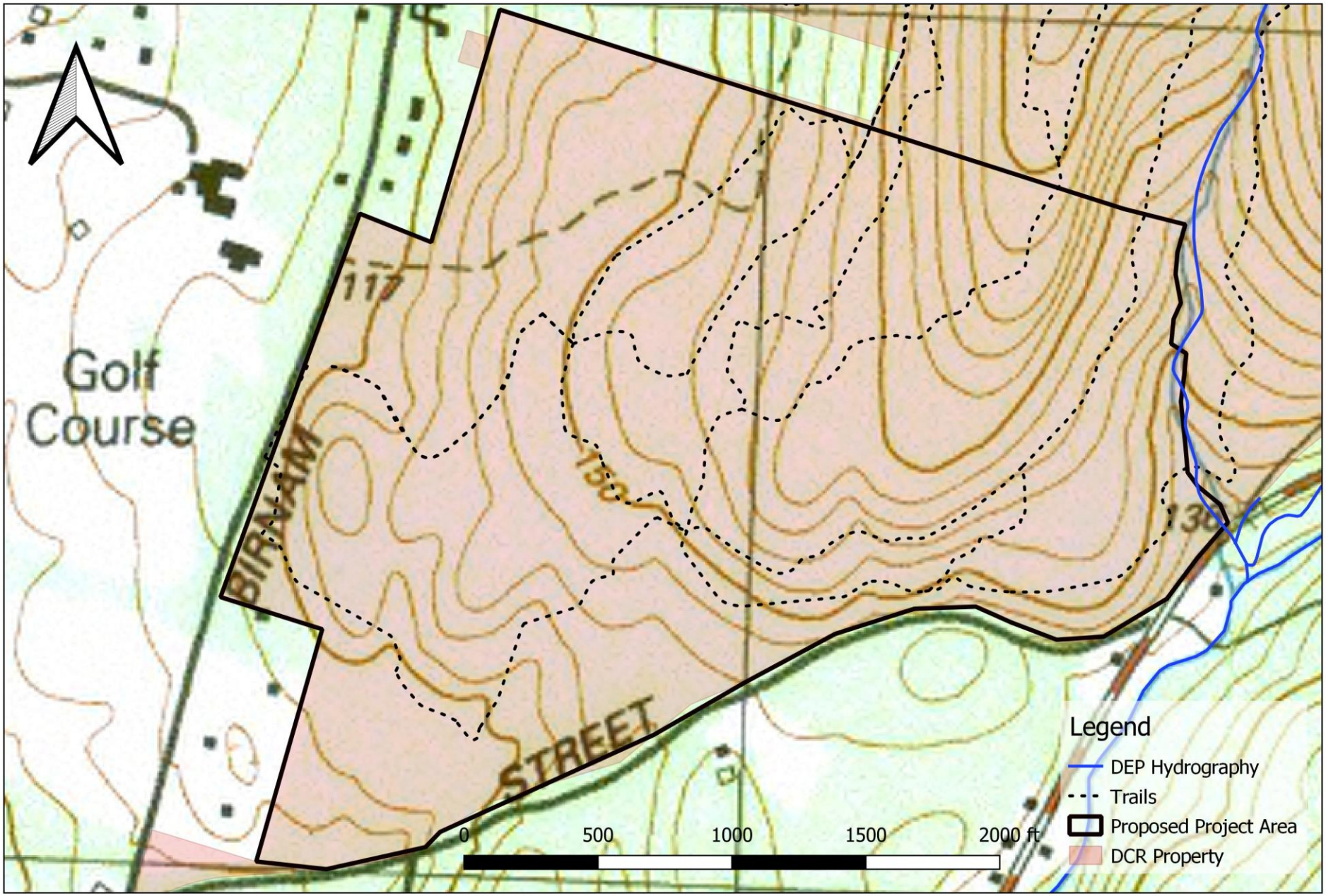
District Forester: _____ **Date:** 6/24/2021

Field Operations Team Leader Or Park Supervisor: _____ **Date:** 6/23/2021

Regional Director: _____ **Date:** 6/24/2021

Management Forestry Program Supervisor: _____ **Date:** 6/25/21

Project Map : Northfield State Forest - Birnam Road Proposed Project 02/04/2021



Locus Map : Northfield State Forest - Birnam Road Proposed Project 02/04/2021