

**Massachusetts Department of Conservation and Recreation
Bureau of Forest Fire Control and Forestry
Forest Management Proposal
Name: Goodale Lot Pine Sale**

Date Posted: November 27, 2012
End of Comment Period: January 11, 2013

Region: North
Recreation District: Metro West
Forest Management District: Northeast
State Forest: Sudbury – Marlborough State Forest
Closest Road: White Pond Road
Town: Hudson

Contact Information: Harris Penniman
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Overview

The Goodale Lot Forest Management Project is located in the central portion of the Sudbury - Marlborough State Forest in the town of Hudson (see Locus Map). The forest property is primarily the result of tree plantations on abandoned agricultural land. It is now in a generally suburban area of the state. It was selected as a forest management project because:

- The pine plantations are typically dense and offer little in terms of vegetative diversity.
- It offers an excellent opportunity to demonstrate and fulfill items listed above.
- Timber sale revenues and contractual requirements can be used to repair and prevent damages from illegal off road vehicles (ORV).
- It provides an opportunity in the suburban setting of the Sudbury - Marlborough State Forest to interpret forest management.

The Goodale Lot Forest Management Project seeks to:

- Demonstrate thinning to prepare an even age red and white pine plantation for regeneration of native white pine, oaks and other deciduous species.
- Demonstrate harvesting techniques and best management practices that protect forest productivity, soil and water resources.
- Increase local vegetative diversity by creating growing space for herbaceous plants and deciduous trees within the current plantation setting.
- Fulfill management approaches for Woodlands as directed by the Forest Futures Visioning Process (2010) and subsequent Management Guidelines (2012).

Stand Description:

The Goodale Lot is about a 104 acre isolated parcel of the Sudbury – Marlborough SF, in the Town of Hudson. The road frontage of the parcel is on Main Street (along the north) and White Pond Road (along the east). The remaining property lines are a discontinued railroad right of way (along the south) and lines that parallel Parmenter Road and Main Street behind house lots form the western boundary and part of the northern boundary. The proposal area is on an outwash plain with droughty soils, it is relatively flat with maybe 3+/- % slope, with a few isolated kettle-like wet areas. The soil types are Hinckley sandy loam, Windsor loamy sand, Carver loamy coarse sand, and Paxton fine sandy loam.

There are four stands that will make up this proposal. Stand 1 is a 14 acre red pine plantation. The trees are of 6-13 inch size and are about 75 years old. The stocking level of the stand is high with declining stand and tree vigor due to close spacing of trees. Little or no silvicultural work has been done since planting. Stand 2 is a 4 acre white pine stand with 8-15 inch diameter trees also with a high stocking level. Stand 3 is a 4 acre white pine – oak stand near Main Street to the north. It has 6 to 15 inch diameter trees and like Stands 1 and 2 has a high stocking level. Stand 4 is a 6 acre white pine – hardwood stand where there is medium stocking in 8 to 15 inch diameter trees with thick hardwood understory resulting from previous thinning operations.

Tree vigor is declining in stands 1-3, because the canopy is full, and stocking is high. Analysis of site history and conditions suggests low to moderate soil and forest complexity in stands 1 – 3. These even-age, lower complexity stands on poorer soils lend themselves to even-age management. Stand 4, which had a fuelwood harvest in 1983 now, has much regeneration present because of the harvest and consequently more within stand diversity than Stands 1 - 3.

The DCR Management Guidelines of 2012 stated that forest stands will be “classed . . . and considered for silvicultural treatments that generally fit their productivity, structural complexity (or potential thereof) and diversity”. An analysis of Stands 1 – 3 of the Goodale Lot site history (land use; agriculture/logging) and conditions (soil types, productivity; vegetation cover) suggests that these even-age, lower complexity stands on poorer soils lend themselves to even-age management. There is more within stand diversity in Stand 4 due to a fuelwood harvest in 1983 which resulted in abundant hardwood regeneration.

The most common species of the area are red pine, white pine, pitch pine, red oak, black oak, scarlet oak, and red maple. Trees are roughly 75 years old. The parcel except for the 200 foot strip along Main Street was acquired in 1934.

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

Aesthetic: The roads will be buffered to at least the Massachusetts Best Management Practices and Forest Cutting Regulations (buffer strips will extend 50 feet back from the outer edge of the roadway and no more than 50% of the basal area will be cut - standards to “maintain a forested appearance and attractive landscape”). All slash over 1” in diameter shall be lopped to lie less than 2’ above the ground. The forest is located in a town that is primarily a residential suburb of the

metropolitan Boston area; therefore aesthetics are a major consideration. Thinning will increase the depth of perception into the forest.

Recreation: Hiking and horseback riding are major uses in the area, along with some hunting. Woods roads and trails have been degraded by illegal ATV and Dirt bike use. Woods roads in the harvest area will be regraded. Existing trails and roads shall be kept in a passable condition at the end of each work day. Trees adjacent to trails shall be marked with double slashes of paint to aid in directional felling to minimize aesthetic impact on trails. Removal of potentially hazardous trees that may fall onto trails will improve public safety. The area will be closed to the public during active logging hours for safety. Some skid trails may be left open to enhance the existing trails system, with one of the goals being to aid in the layout a perimeter trail.

Wetlands: There is a bog and a shrub swamp near Main Street, two non certified potential vernal pools just south of a main woods road and 1 acre wetland in the southeastern section of this lot. All vernal pools, whether certified or non-certified, will be treated as certified. There will be a 50' no – cut buffer surrounding vernal pools. The bog and shrub swamp near Main Street and the wetland to the southeast will also have 50' no – cut buffers. Trees adjacent to buffers shall be marked with double slashes of paint to aid in directional felling away from wetlands to minimize impacts. No equipment will operate in wetlands, or buffers except on pre-existing woods roads. There will be no wetlands crossing and there are no streams in the proposed area.

Cultural Resources: There are no stone walls or foundations in the area. The Praying Indian village, Okamniakamesit, was located on the northeast side of Boone Pond which is north of this site. The general area was part of the battles of the King Philip War. An old Boston and Maine Railroad track lays to the southeast of this parcel.

Rare and Endangered Species: The NHESP atlas has been checked and there are no sightings of rare and endangered species or rare plants in the proposed area.

Wildlife: There was not any rare animal or critical habitat noted in the NHESP web site. There are signs of deer using the area. Small mammals and numerous birds are expected to inhabit this site. Rabbit sign was noted in stand 3 and turkey were seen in stand 4. Large sized trees with wildlife cavities, live snags and known nest trees shall be retained for wildlife. Any raptor nests found will be buffered. Browse and cover is expected to improve within two to five years after harvest for the benefit of wildlife. The increase in diversity of tree species should also be beneficial to wildlife. At this time the deer presence should have minimal affect on regeneration.

Sale Layout and Harvesting Limitations: The landing will be internal to lot off White pond Road. It will accommodate cut to length processing and will be adjacent to the woods road to allow tractor trailers to be loaded. The area where the landing will be located is level with the roadway and stand, and should not present any limiting factors. The use of a cut to length system, with a feller buncher and a forwarder, will be used to treat this site. The roads and trails will have trees cut up to the edge buffered with 50% or less BA removed, including potentially hazardous trees. All wetland areas and vernal pools are excluded from harvest area. Vernal pools, certified or non-certified, will be treated as certified and will be treated the same with 50' no cut buffers. NHESP recommendations will be followed, if made. The main skid trails, buffer zones, vernal pools, and

wetlands shall be delineated by marking trees with paint or flagging prior to harvest. The landings shall be stabilized after harvest. Woods roads in the area will be regraded. The harvest area has minimal slope so erosion should not be a problem. There are no streams on this sale so no bridges will be needed. If there is an extended wet period that affects the site the work shall be closed for the duration of the adverse conditions. Once the lot has been marked a decision will be made to see if a gate or gates could be installed. Access to this lot by motorized vehicles may be the most sensitive issue at this time. This use is not allowed but there has been a fair amount of activity in the past.

Silviculture: The goal of this harvest is to maintain the growth of the best quality trees in portions of the parcel and to regenerate and release established regeneration in other areas by way of the shelterwood system. The shelterwood system will gradually reduce the stand density in a series of cuts or thinning over several years. Gradual reduction of stand density protects understory trees and provides a seed source for stand regeneration. Shade is important for the survival of regeneration and herbaceous layer because of the dry sandy soils in the area. The red pine stand will be thinned to promote white pine regeneration. White pine is moderately shade tolerant where the red pine prefers full sun. The white pine stand will be thinned to promote growth of the better quality stems, maintaining the white pine type. The droughty soils favor white pine in this area as seen in the general landscape of the flats in the area. Trees will be marked to be felled and left for coarse woody debris (CWD) that will provide for soil nutrient development and wildlife habitat. Per DCR guidelines a minimum of two cords per acre of CWD will be left.

Primary goal of these treatments is to thin the canopy to increase sunlight, provide conditions for seedling germination, increase species diversity and structural diversity and give the stand a chance for the tree crowns to expand. Some secondary goals will be to change the red pine stand to white pine (most likely the dominant, native species to this site), to create some diversity with some hardwoods occupying the site after treatment, increase lower level vegetation layers, and create some species diversity with the fauna by leaving coarse woody debris on the forest floor.

The methods to accomplish the goals will be to thin the stands to reduce the density of trees to lower stocking levels that will allow more growth on a smaller number of trees. The residual trees should develop larger, healthier crowns and be more vigorous and healthy. Stand 4 will be thinned to increase the stand's age and structural unevenness further increasing its diversity.

Long term desired conditions will be to convert the red pine plantations to a white pine stand with a hardwood component. These treatments are the first step in a multi step process to grow red pine, white pine and mixed hardwoods. There will be one more thinning in 15 to 20 years and then a decision will be made on future approaches to fully regenerate the stands.

This harvest will demonstrate how cut to length and forwarding minimizes soil disturbance and debris at the landing, and higher retention of nutrients by leaving branches, needles and leaves dispersed in the harvest area. It will also show how by thinning to allowing more sunlight to the forest floor regeneration is encouraged.

District Forester: *David P. [Signature]*

Date: 11-1-12

Field Operations Team Leader
Or Park Supervisor: *Jeff Cato*

Date: 11-1-12

Regional Director: *Susan Hamilton*

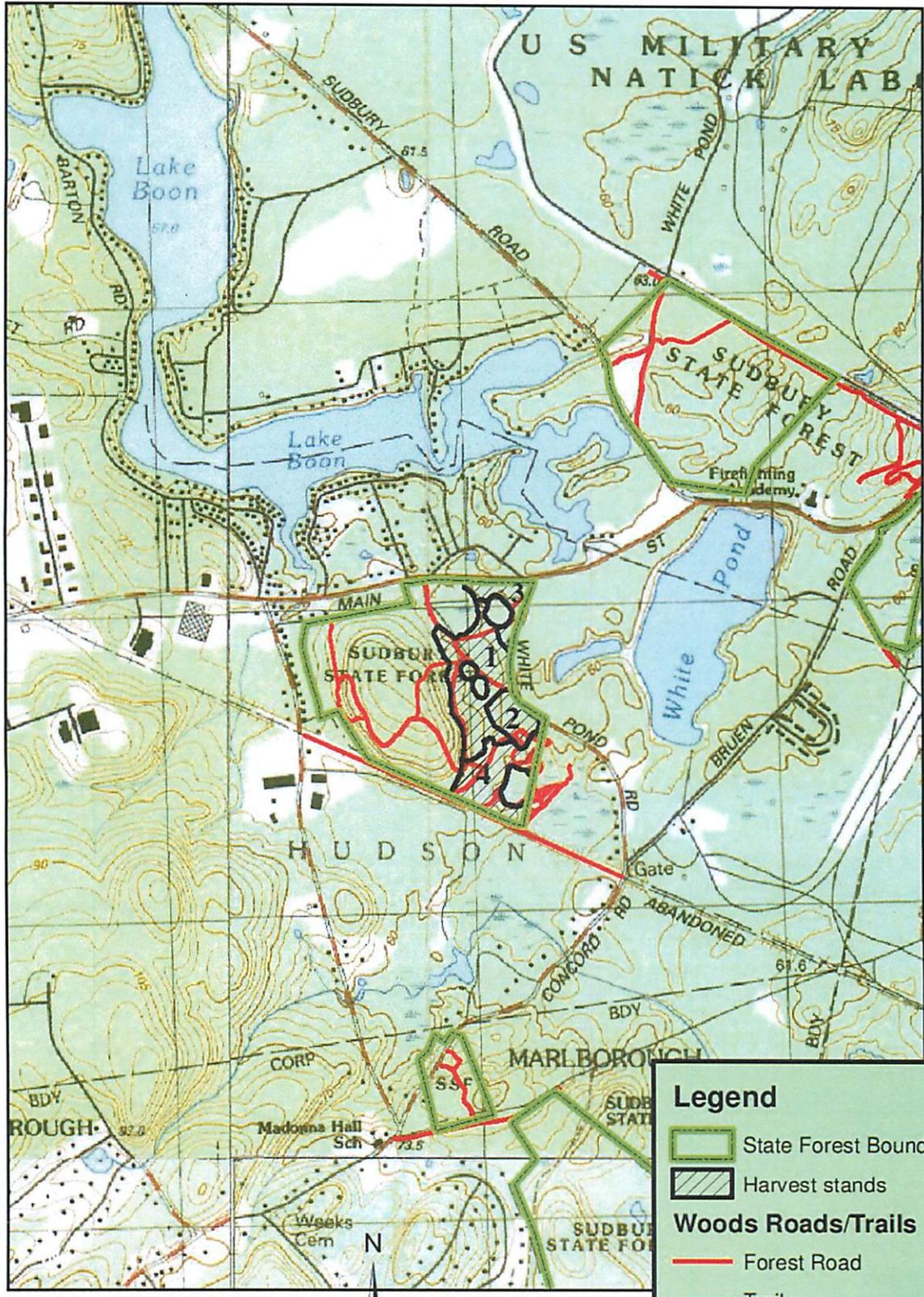
Date: 11/2/12

Management Forestry
Program Supervisor: *[Signature]*

Date: 11/2/12

Attached: Topographic map and Locus Map showing location of Forest Products Sale Area

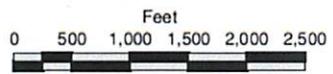
Goodale Lot Pine Sale



Legend

- State Forest Boundary
- Harvest stands
- Forest Road
- Trail

Woods Roads/Trails



Goodale Lot Pine Timber Sale, Marlborough - Sudbury State Forest - Locus Map

