Massachusetts Department of Conservation and Recreation
Division of Water Supply Protection, Office of Watershed Management
Forest Management Project Proposal Summary

Site Information

Proposal Summary Item	Item Information/Description
Lot Proposal ID	**WA-19-328**
Fiscal Year	2019
Watershed	**Wachusett**
Town(s)	**Sterling**
Acres	62.3
Nearest Road	Justice Hill Road
Natural Heritage Atlas overlap?	No
Public Drinking Water Supply Watershed?:	Yes
Forest Types	White pine/oak; Mixed oak; Hemlock/hardwood
Soils	Primarily Chatfield-Hollis-Rock outcrop complex along with some Paxton fine sandy loam, extremely stony, Woodbridge fine sandy loam, extremely stony and the poorly drained Ridgebury fine sandy loam, extremely stony.
Wetland Resources	A narrow wetland sits at the bottom of the south facing slope and this drains to the southeast into a larger stream which is a tributary of Rocky Brook. A short stretch of Rocky Brook forms the far western boundary of this proposed sale area.
Vernal Pools	There are no known vernal pools.

NARRATIVES

General Description/Forest Composition/History:

The area is comprised of three properties purchased by DCR since 2016. The far western parcel shows no signs of having been logged within the past few decades. The primary species in the overstory is red oak along with white oak, black birch, red maple and scattered, large, dominant white pines. Nearer to Rocky Brook there is more yellow birch and white ash. This area is extremely rocky with a decent amount of advance regeneration, which due to the higher stocking of the overstory is far less well developed compared to the rest of the proposed area. The understory is comprised of maple-leaved viburnum, highbush blueberry and striped maple.

The far eastern parcel was logged about twenty years ago prior to DCR acquisition. There is excellent advance regeneration beneath most of the white pine, red oak, white oak and red maple overstory. Many of the white pine, especially in the northern end, are very large, bully trees.

The majority of the proposed sale area is the middle parcel that was purchased in 2017. This area was also logged about 20 years and, as a result, has an excellent understory of advance regeneration comprised of red oak, white pine, red maple, black birch, hickory, sassafras and hemlock. In the higher elevations to the north, there is also a significant component of chestnut oak in the understory. The overstory on the south facing slope is very diverse, comprised of red oak, white oak, chestnut oak, white pine, hemlock, black birch red maple, hickory and sassafrass. Understory shrubs present are maple-leaved viburnum (very tall), lowbush and highbush blueberry, mountain laurel and arrowwood. There is black gum in the wetland at the base of the slope along with red maple, yellow birch and hemlock. On the hill in the southern, narrow part of the sale area, the overstory is dominated by hemlock, red oak, red maple and white pine. Hemlock wooly adelgid is present in this forest and is having a noticeable impact on the health of the hemlock.

Across the entire sale area, sampling found that there is adequate advance regeneration present in 60% of the plots with marginal regeneration in and 17%. Native shrubs are at interferring levels in only 2% of the plots.

The age structure for this area is as follows; 0% 0-20 years old, 0% 21-40 years, 0% 41-60 years, 0% 61-80 years, 62% 81-100 years and 38% >100 years old. The oldest stands in the western end of the area originated in about 1899 making them about 119 years old.

Site Selection:

The ideal watershed protection forest is one which best serves the function of the land as a producer of high quality drinking water in both short- and long-term. This forest must be vigorous and diverse in tree species and ages, be actively accumulating biomass and actively regenerating. Such a forest will be ideally suited to be resilient to and quickly recover from small- and large-scale disturbances such as diseases, insect infestations, ice storms and hurricanes.

This area was selected for management because of the lack of age diversity both in these 62.3 acres as well as in the 2,189 DCR-owned acres from which water flows into Rocky Brook and ultimately into the Wachusett Reservoir. There is no young forest and no forest less than 80 years old while 62% of the forest is between 81 and 100 years old and 38% is more than 100 years old.. This harvest will contribute as much as 21 acres or 33% of young forest towards the ideal protection forest which would have at least 3 distinct age classes of trees distributed throughout this sale area.

Silvicultural Objectives:

One of the management practices that is being tested in this experiment is that no more than 25% of the total stocking in any subwatershed will be removed in any given 10-year period. The typical subwatershed that this rule is applied to is hundreds to thousands of acres in size and numerous individual management operations take place within any given 10-year period. In this case, this 169 acre subwatershed will represent the typical much larger subwatershed and this single forest management operation will represent several operations spread across time. Normally the goal of our operations is to create a new young age class on about 1/3rd of any given management area assuming there is adequate regeneration present well-distributed throughout the area. Partial cutting may also occur as well on some proportion of the area. In this case, however, the total area regenerated plus the acreage of the partially cut areas multiplied by the fraction of the stocking removed, cannot exceed 25.5 acres which is 25% of the 102 acres that DCR owns in this subwatershed.

With perhaps 20 acres of openings, which is reasonable given the amount and distribution of good regeneration present, partial cutting can occur on up to 16.5 acres if 1/3rd of the stocking is removed in these areas or on up to 11 acres if half of the stocking is removed as in an establishment cut. What will happen is a combination of openings, improvement/thinning cuts and establishment cuts that when all added together, do not exceed the 25.5 prorated acres.

Cultural Resources:

This area will be assessed by the DCR Archeologist for both known sites of cultural or archeological importance as well as for potential use by pre-Contact Native Americans.

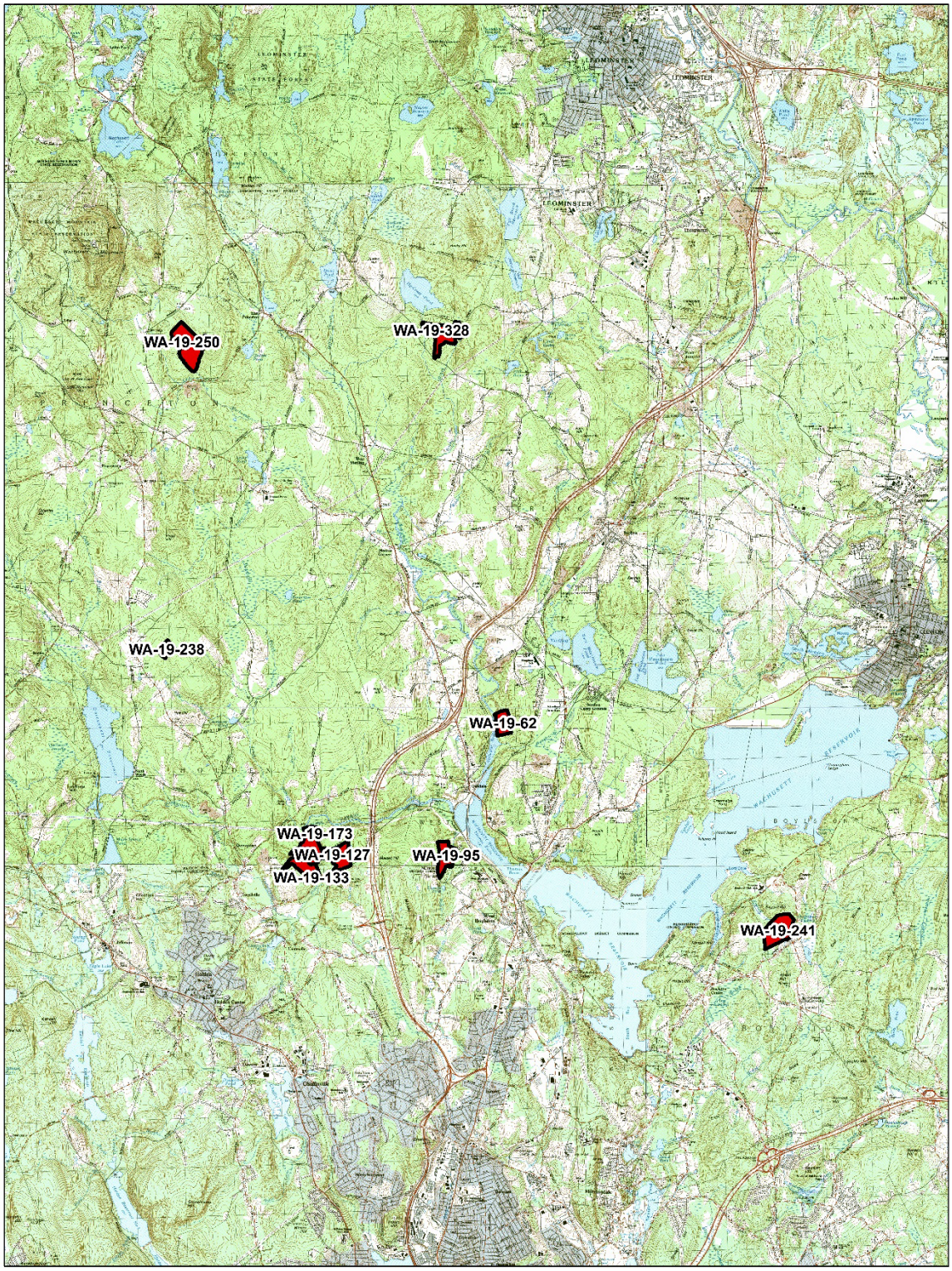
Wildlife/Rare or Endangered Species:

All DWSP Best Management Practices for wildlife management such as the protection and enhancement of wildlife habitat features will be an integral part of the silviculture and job layout. Diverse hard and soft mast species will be retained and the healthiest trees will be released to improve seed production, which will promote tree seedlings and food for wildlife. Large snags, den trees, logs and nest trees will be retained whenever possible as valuable habitat. No stick nests were observed, but if they are identified in the further steps of this process they will be protected. Where they occur; streams, wetlands, seeps and vernal pools will be protected for water quality and wildlife habitat.

DCR - Wachusett Reservoir

Proposed Timber Sales FY 2019

Locus Map (Scale 1:72,000 - 1 inch =6,000 feet)



DCR - Wachusett Reservoir
Timber Lot Proposal WA-19-328

1 inch = 300 feet

Outline of Proposed Area (Working Unit)

DCR Property Lines w/wo walls

Stone walls

Streams

Wetlands

Vernal Pools-Verified

Vernal Pools-Potential

Landing/s

NHESP Priority Habitats (semi-transparent)

DCR Gate/s

0 180 360 720 Feet