Headlands Farm Forest

Forest Management Plan

2019-08-26

This forest management plan is a blueprint for responsible land stewardship. It is the result of a planning process that incorporated an assessment of the history and current conditions on the property, consideration of the various courses of future development that the forest could follow, and discernment as to which outcomes best suit my particular objectives.

By signing below, I certify that I approve of—and agree to manage my forestland according to—the following management plan. I further certify that any of my forestland that is enrolled in Vermont's Use Value Appraisal program is under active long-term forest management in accordance with the state's minimum acceptable standards for forest management. These standards include following Acceptable Management Practices to maintain water quality on logging operations.

Prepared by

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Owner

Daphne E. Hallowell
130 Headlands Way
Westport, NY 12993

Property

519 acres NA
Westport, NY
Parcel IDs:
66.2-2-9.110; 66.2-2-8.00; 66.2-2-9.120; 66.2-2-12.000
480a Certification Number: 15-009

Effective date of plan

April 1, 2020

_____ _____

Landowner Date

_____ _____

Landowner Date

_____ _____

Landowner Date

_____ _____

Landowner Date

This forest management plan meets the standards promulgated by the Vermont Department of Forests, Parks and Recreation as required for eligibility in the Use Value Appraisal Program.

_____ _____

County Forester Date

Introduction

This plan covers the ten year period from 2020 to 2029. It lays out the near- and medium-term actions that should guide the development of the Headlands Farm Forest Forest. It also qualifies portions of the property for Use Value Appraisal (UVA) and commensurate reduction in property taxes.[1] Owners participating in the Use Value Appraisal program are obliged to manage enrolled portions of their property according to the plan and to make any reasonable investments for improvement that the plan recommends.[2] Its recommendations were developed in accordance with the principles and practices of scientifically sound forestry, as described in the relevant management guidelines, textbooks and academic journals.

[1] Further information about UVA and current valuations can be found at the Vermont Tax Department's website: `https://tax.vermont.gov/property-owners/current-use`.

[2] UVA management plan standards are determined by the Department of Forests, Parks, & Recreation and are available at `https://fpr.vermont.gov/forest/your_woods/use_value_appraisal` or through a County Forester.

Property Description

NA of the 519 acre Headlands Farm Forest property is productive forestland that will be managed according to this plan. Its elevations range from 95 to 740 feet above mean sea level. NA NA Soils, forest health, and other pertinent topics are discussed in the individual stand area descriptions that follow.

Principles, Goals & Strategies For Forest Management

Conservation

The ecological functioning, productive capacity and biological diversity of the forest resource should be maintained or improved over time so as to provide opportunities for the current or future landowners to continue to enjoy and use the property. A management strategy that is sustainable in the long-term and viable in the short- and medium-terms offers a strong measure of protection against future development or conversion.

Resilience

The overarching objective of management is to bolster the resilience, dynamism, and adaptive capacity of the forest as a component of a complex ecological system. This guiding principle is motivated by a commitment to maintaining the productivity and ecological function of the land even in the face of accelerating environmental change. Specifically, management planning should directly address the threats global climate change poses—increased risks of drought, prolonged heat waves, catastrophic ice and wind storms, pest irruptions, flooding—and minimize the risks associated with unplanned forest cover loss or

degradation. The primary risk mitigation strategies operate across spatial scales: property-wide, the aim is to develop or further entrench the attributes associated with complex adaptive systems, including diversity, connectedness, and diffused system boundaries; at the stand-scale resilience emerges from the functional redundancy and complementarity of complex arrangements of species, age-classes, and stand structures; at the sub-stand scale, attention should be directed toward improving the health and vigor of individual trees to best position them to resist or recover from individual stressors.

Timber management

Management should provide regular returns from timber harvesting. Long-term value growth is provided by maintaining full site occupancy with investment-grade stems: healthy trees capable of producing high quality sawtimber or veneer and worth retaining in the stand until they reach their full, site- and species-specific target diameters. Tree species which yield sought-after, high-value wood should be promoted within each stand or, when regenerating a new stand, attention should be paid to providing the stand conditions which favor the establishment of those species. At a property-wide scale, a variety of species should be maintained, providing options for seizing future market opportunities and a hedge against species-specific market depreciation. Among desired species, additional preference should be given to individual trees of sufficient vigor and grade-potential for strong future value growth. Consideration of economic efficiency should inform the timing and coordination of infrastructure investments and stand maintenance, improvement and harvest operations.

Stand Descriptions & Management Recommendations

Presented below are detailed stand-by-stand descriptions of the forest, the long-term structural, compositional and functional goals for each stand, and the near-term silvicultural treatments or management activities that have been prescribed to advance each stand toward those goals. The data presented in the following pages was obtained from a field examination of the property in August of 2019. General conditions were assessed qualitatively in conjunction with quantitative sampling. Observational notes and sample summary statistics together provide the basis for the area descriptions and management recommendations. All sampling was done using a systematic sample and variable radius plots. In stands with uneven-aged structures, all trees 6" in diameter at breast height (dbh) and larger were measured in each plot. In stands with even-aged structures, all main-canopy trees

Management Schedule

2023

- Area 2: Shelterwood establishment
- Area 3: Continuous cover irregular shelterwood

2029

- Reinventory property

were measured in each plot.

When contractors are used to implement silvicultural prescriptions, they should be highly skilled, properly equipped, fully insured, and closely supervised. A professional forester should prepare and administer commercial treatments, and logging operations should be timed to coincide with favorable weather conditions (working on wet soils only when they are frozen, for instance) and favorable timber markets. Use Value Appraisal program guidelines allow any management activities prescribed in this plan to be carried out up to three years before or after the date indicated. Landowners in the Use Value Appraisal program must file a Forest Management Activity Report with the County Forester by February 1st if any commercial logging occurred in the previous year.

The property should be reinventoried in 2029 and the findings brought to bear on a reassessment of the goals and strategies proposed in this plan, leading to a formal management plan update. At any point over the course of this management period, this plan may be updated to incorporate new information and to reflect any new thoughts, concerns or considerations on the part of the owners or the foresters helping to manage their land.

Area 1

Mixedwood
NA legal acres | 17.89 measured acres

Site-specific information

- **Soils:**
  NA
- **Site Class:**
  II (determined from soil mapping and field assessment)
- **Access:**
  Less than 1 mile
- **Stand history:**
  NA

Current forest information

- **Age Class Structure:**
  Even-aged
- **Species (% stocking):**
  hemlock (28%), red oak (28%), white pine (16%), beech (7%), hard maple (7%), soft maple (6%), ash (3%), yellow birch (3%), hophornbeam (1%)
- **Regeneration:**
  NA
- **Forest health:**
  NA
- **Volume/ac:**
  0.4 MBF veneer, 5.6 MBF sawtimber, 2.5 MBF tie logs, 4240 cds pulp
- **Size class structure (%BA):**
  6-10": 16% | 11-16": 44% | 17-22": 32% | 23+": 7%

Inventory information

- 6 points, 10 BAF, August, 2019

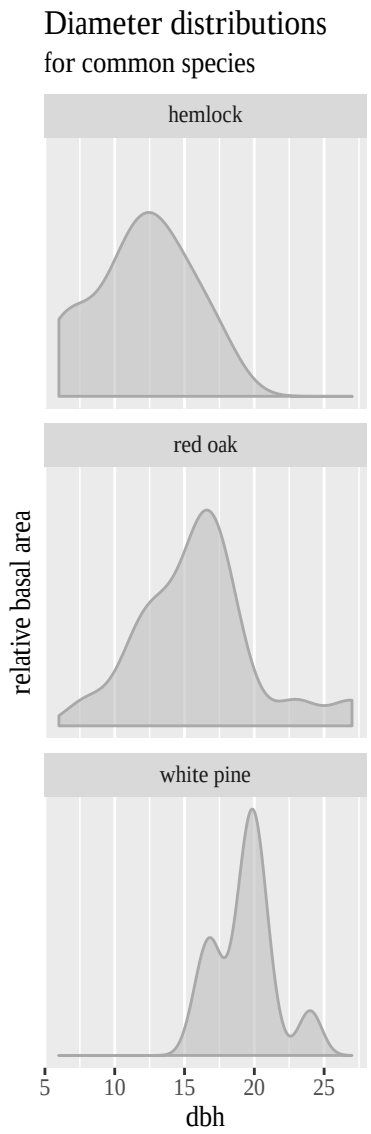

Figure 1: Distributions are approximated with kernel density estimation. Common species are those that account for at least 8 percent of the total stocking and areas under each curve represent species basal areas.

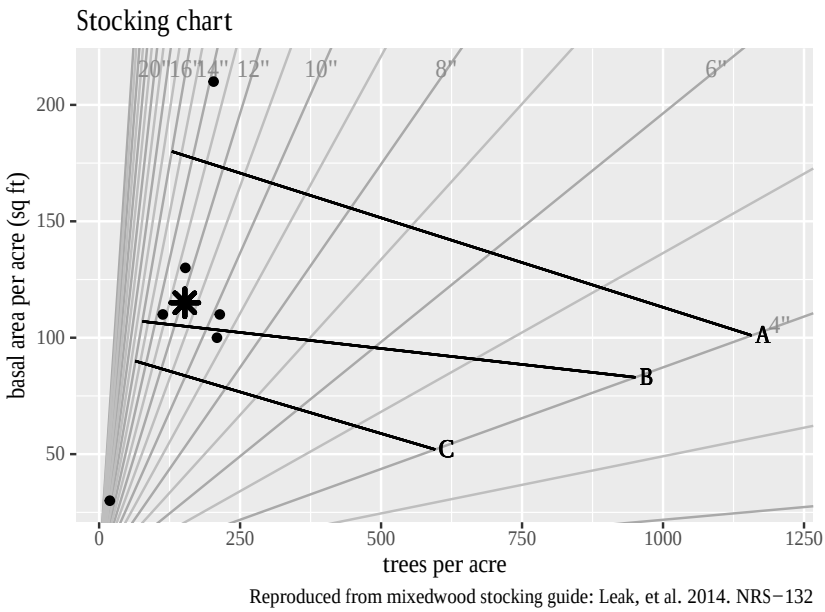

Figure 2: Points represent individual plots. Asterisk represnts stand average. Radial lines are quadratic stand diameters.

Table 1: Measures of stocking for all live trees (total) and acceptable growing stock.

	Total	Acceptable
Basal area (sqft/ac)	115	NA
QSD (in)	12	NA
Stems/ac	152	NA

Long-term management system

Even-aged management[3]

This area should be maintained as an even-aged stand and grown to an age of about 100 before it is regenerated (we believe it's about 80 now). Regular tending, every 15 years or so, should focus growth on the highest quality stems and favor desirable species; namely sugar maple, red maple, and spruce. A component of hemlock should be kept too, for its contribution to wildlife habitat.

[3] Leak, W.B., M.Yamasaki, and R. Holleran. 2014. Silvicultural Guide for Northern Hardwoods in the Northeast. USDA For. Serv. Gen. Tech. Rep. NRS-132.

Silvicultural prescription

No work is needed over the next decade, as the stocking accrues. The owners may wish to cut firewood for their own use. Removals should be limited to a handful of cords per year from unacceptable growing stock.