

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

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Property

295 acres and two dwellings
Worcester, VT
SPAN 788-251-10339
Map delineation based on VMP
Photo(s) 148212, 148208

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 Perdue Forest. It also qualifies 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 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 295 acre Perdue property is productive forestland that will be managed according to this plan. Its elevations range from 1110 to 1480 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

Ecological integrity, wildlife habitat, and biodiversity

Management should prioritize the protection of critical ecological functions, water resources, and threatened or rare plant and wildlife communities. Wetlands and stream-side riparian zones should be carefully delineated and protected; and management should give consideration to the habitat needs of native wildlife populations and to the relationship between the property, its neighbors and the larger landscape they are nested within. Management should be informed by and aim to improve landscape diversity, wildlife travel corridors, and habitat connectivity. Locally under-represented habitat types should be identified and promoted. Stand scale and sub-stand scale management should focus on developing or maintaining species-specific habitat needs, such as nesting sites, cover, mast production, preferred browse or other unique structural and compositional requirements.

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 September 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" dbh and larger were measured in each plot. In stands with even-aged structures, all main-canopy trees 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

Management Schedule

2022

- Area 1: Group selection harvest

2029

- Reinventory property

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 family or the foresters helping to manage their land.

Long-term management system

Group selection³

A group selection system (in which groups of trees are harvested at each entry) will maintain the uneven-aged structure that is present, generate regular logging revenue, and provide early successional habitat for grouse and other species. Approximately 1/6th of the stand area will be harvested in groups of 1/2 to 2 acres, every 15 years or so. This will allow groups to grow about 90 years before they are harvested. While these groups are on the small side for grouse habitat, they will be more aesthetically pleasing and will regenerate a diverse mix of hardwood and softwood species. Target diameters will be specific to species as follows: 24 inches for white pine, red spruce, sugar maple, yellow birch, and black cherry; 18 inches for other commercial hardwoods (with exceptions allowed for all veneer quality hardwood stems); 18 inches for hemlock; and 14 inches for fir.

Tending will be carried out in immature groups at each entry as well (those not being harvested), to promote the growth of the trees with the highest value-growth potential.

An uncut buffer should be maintained along Valley Lake and Little Dog Pond to protect water quality and for the coniferous cover it will provide for overwintering grouse.

Silvicultural prescription

Group selection harvest⁴

Year: 2022

About 1/6th of the stand (6 acres) and not more than 1/5th (7 acres) should be harvested in groups that are 1/2 to 2 acres in size. These groups should be located throughout the stand, and should be focused on releasing desirable advanced regeneration, removing concentrations of unacceptable growing stock, and triggering the establishment of new regeneration. Species targeted for release or establishment include sugar maple, spruce, yellow birch, black cherry, and some paper birch and aspen.

In the matrix between these group openings, a crown thinning should reduce the stocking to about 90 ft²/acre. This is a bit below b-line on the mixedwood stocking guide, but the stand is already 2/3rd hardwoods and we expect the thinning to push it further in that direction (b-line for a hardwood stand is about 70ft²/acre). Sugar maple, yellow birch, and spruce should be favored for retention, but the focus will be on removing unacceptable and lower quality growing stock and releasing the stems with the highest value-growth potential.

No group openings should be cut within 100 feet of the ponds or within 50 feet of streams, and only very limited thinning should be

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.

⁴ 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.

done in that area. In areas where the ground slopes steeply to the water, the buffer should be extended to prevent erosion and water sedimentation. Heavy equipment should be excluded from the pond buffers as well, except along the existing access road.

Area 1

Northern hardwood

NA legal acres | NA measured acres

Site-specific information

- **Soils:**
NA
- **Site Class:**
II (determined from soil mapping and field assessment)
- **Access:**
Good. Less than 1 mile
- **Stand history:**
Established c. 1940, possibly from abandoned pasture. Highgraded, most recently c. 1990.

Current forest information

- **Age Class Structure:**
Even-aged
- **Species (% stocking):**
hard maple (28%), soft maple (20%), yellow birch (15%), ash (14%), beech (12%), hemlock (7%), red oak (2%), black cherry (1%), paper birch (1%), spruce (1%)
- **Regeneration:**
Well established beech understory.
- **Forest health:**
Beech bark disease (probably coupled with high deer browse pressure) is a severe impediment to regeneration. Overstory health and quality are low because of past highgrading. No exotic invasives noted.
- **Volume/ac:**
0.2 MBF veneer, 3.3 MBF sawtimber, 1.7 MBF tie logs, 7170 cds pulp
- **Size class structure (%BA):**
6-10": 30% | 11-16": 60% | 17-22": 10% | 23+": 1%

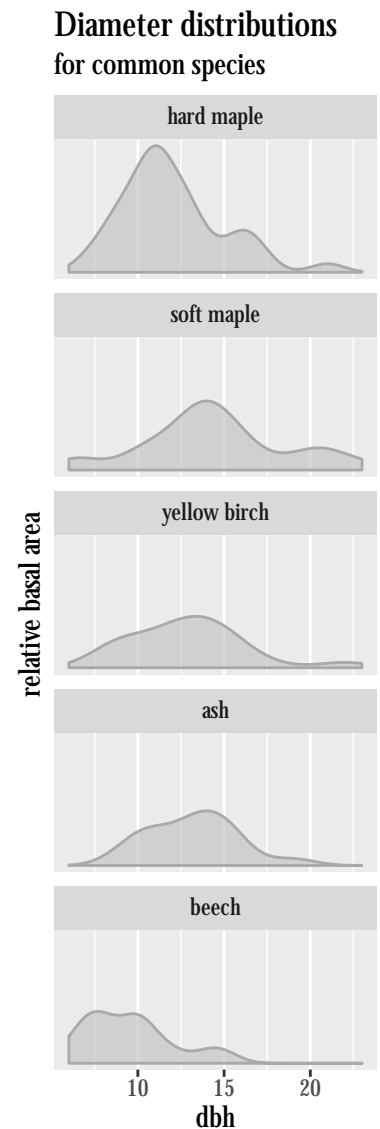


Figure 1: Distributions are approximated with kernel density estimation. Common species are those that account for at least 8 percent of the total stocking and areas under each curve represent species basal areas.

Inventory information

- 11 points, 10 BAF, September, 2019

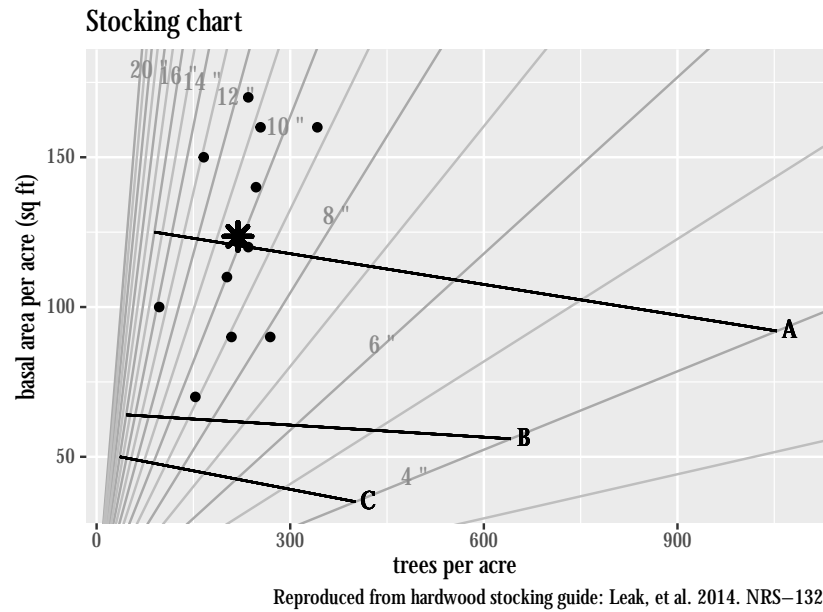


Figure 2: Points represent individual plots. Asterisk represents stand average. Radial lines are quadratic stand diameters.

	Total	Acceptable
Basal area (sqft/ac)	124	79
QSD (in)	10	11
Stems/ac	219	121

Table 1: Measures of stocking for all live trees (total), acceptable growing stock, and investment-grade growing stock (which is a subset of acceptable growing stock).