BAY STATE FORESTRY SERVICE

Forest Stand Assessment
South Hadley Fire District #2
Elmer Brook Parcel, Amherst Road, South Hadley, Massachusetts

This assessment covers 31 acres of land owned by the South Hadley Fire District #2, located on Amherst Road. The parcel is identified as Map 58, Lot 20 on the South Hadley Assessors Maps. A forest inventory was completed on this parcel to identify the species composition, current timber volumes, and general condition of the forest. Two forest stands have been delineated, due to the size class and age of the trees in each area.

Stand 1 – White pine forest with oak and pitch pine

Stand 1 is a white pine forest making up most of the parcel, consisting of 27.5 acres of land. In this stand, white pine is the most common species, making up 83% of the sawtimber volume. Associated species include black oak, red oak, pitch pine and hemlock. This is an even-aged forest, consisting of trees that became established at the same time. The stand consists of mature, large diameter white pine. These trees often have forks or crooks, and usually have large dead limbs in the main stem. These characteristics greatly reduce the value of the timber. The smaller trees in the stand have better timber value, but these trees have very small crowns which is an indication of poor vigor. The pines are quite tall, indicating that this site is productive for white pine growth. Sandy soils occur on this flat terrain. The oak is of marginal quality for timber purposes due to the site conditions.

Stand 2 – White pine forest

Stand 2 is almost pure white pine, with an occasional black oak and pitch pine. This forest became established at some point after stand 1, as can be observed by the average size of the trees. The density of trees in this stand is very high. The trees are very tall, with small crowns that limit the growth rates of the trees. Quality is fair, with some good quality timber trees and some that have defects such as crooks or forks. A substantial part of this stand is made up of trees less than 12 inches in diameter. These trees can be utilized for pulp or chips, but are not large enough to be sold for sawtimber.

In both of these stands, forest management options are somewhat limited. Thinning or selective harvesting can be conducted, but will likely leave a forest that is very prone to windthrow of the residual trees. Since the trees are very tall and are growing in sandy soil conditions, it will be difficult to maintain stability in trees retained after harvesting. In stand 1, the larger trees are at or beyond their financial maturity, and are not expected to gain any value if given additional time to grow. The smaller trees have small crowns and poor vigor, and are not expected to respond well if given additional growing space. In stand 2, the very high stocking level has caused most of the trees to have small crowns. Risk of windthrow after a selective harvest is even greater in this area than in stand 1. Clearing all of the trees in these stands is an option for management, as there is significant standing timber volume at this time, and the potential for environmental harm is low due to the flat terrain and well drained soils. Advanced tree regeneration occurs at medium to high densities in much of the area, and these trees can develop into a healthy forest after clearing is completed, if the operator conducting the work is able to protect the regeneration while harvesting.

Assessment prepared by:
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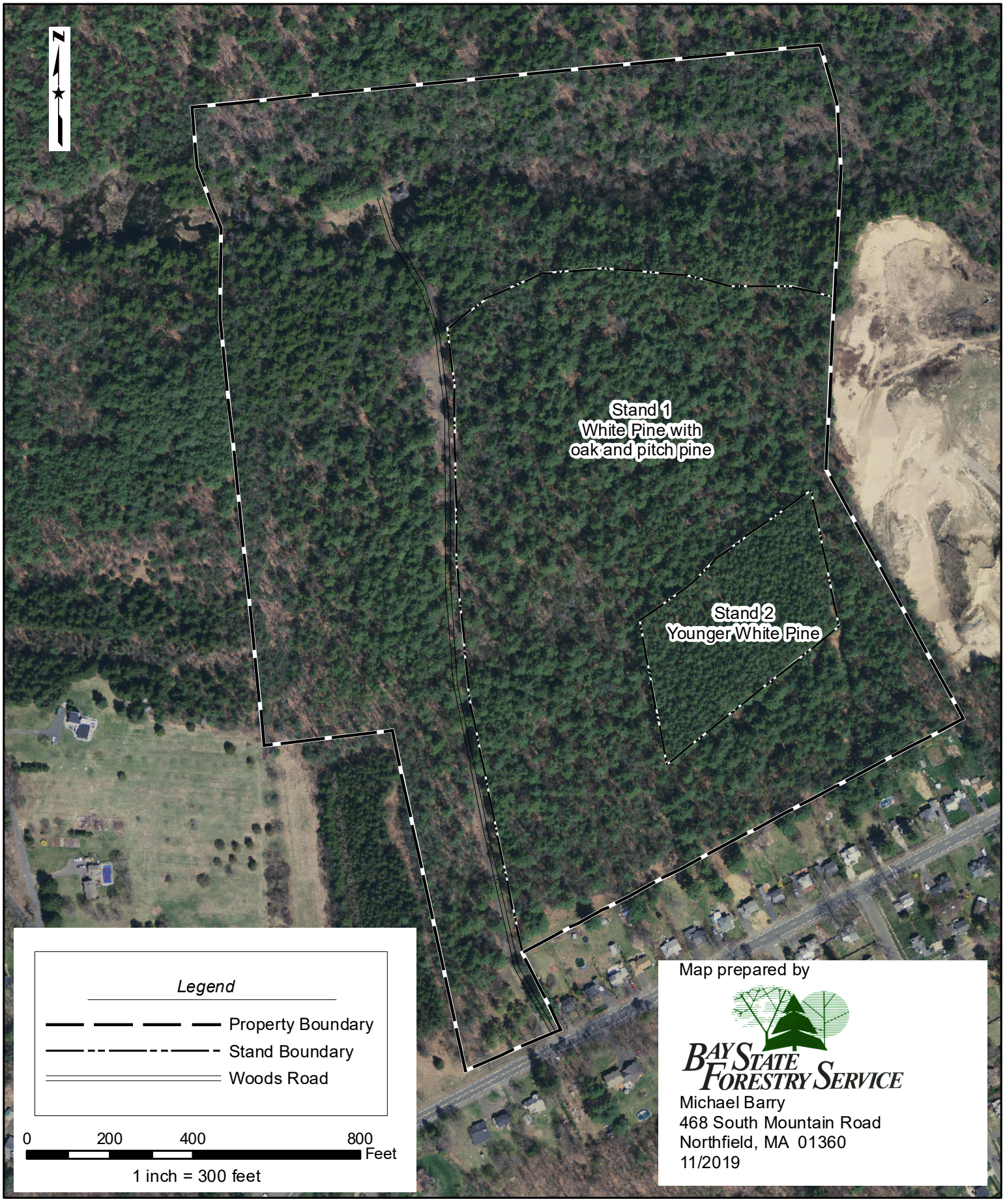
Forest Stand Map

Elmer Brook Parcels, South Hadley Fire District
Located on Amherst Road, South Hadley, Massachusetts



Map prepared by

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11/2019

Inventory Summary for Stand 1 of the South Hadley Fire District #2 Property in South Hadley, MA

Product Volumes

		Per Acre Totals		Trees to Retain		Trees to Cut	
Species	**Grade**	**BF Volume**	**Cords**	**BF Volume**	**Cords**	**BF Volume**	**Cords**
Hemlock	Sawlog	143	0.1	143	0.1		
Hemlock	Pulpwood		0.1		0.1		
Oak, Black	Sawlog	483		483			
Oak, Black	Cordwood		1.3		1.3		
Oak, red	Sawlog	508		508			
Oak, red	Cordwood		1.1		1.1		
Oak, Scarlet	Sawlog	79		79			
Pine, pitch	Sawlog	309		309			
Pine, pitch	Pulpwood		1.8		1.8		
Pine, white	Sawlog	8,331	0.5	8,331	0.5		
Pine, white	Pulpwood		1.8		1.8		
Poplar, aspen	Sawlog	125		125			
All Species		**9,978**	**6.8**	**9,978**	**6.8**		

Stocking and Quality

Species	**Basal Area/Ac**	**Mean Stand Diam**	**Trees/Acre**	**% Acceptable**
Pine, white	79	20.9	54	77
Oak, Black	13	14.9	17	46
Oak, red	11	16.0	9	55
Pine, pitch	11	12.5	15	27
Hemlock	3	13.3	5	67
Oak, Scarlet	1	16.0	1	100
Poplar, aspen	1	13.0	1	100
All Species	**119**	**18.7**	**101**	**67**

Inventory Summary for Stand 2 of the South Hadley Fire District #2 Property in South Hadley, MA

Product Volumes

		Per Acre Totals		Trees to Retain		Trees to Cut	
Species	**Grade**	**BF Volume**	**Cords**	**BF Volume**	**Cords**	**BF Volume**	**Cords**
Oak, Black	Sawlog	549		549			
Pine, pitch	Pulpwood		1.5		1.5		
Pine, white	Sawlog	13,712	8.6	13,712	8.6		
Pine, white	Pulpwood		12.2		12.2		
All Species		**14,261**	**22.3**	**14,261**	**22.3**		

Stocking and Quality

Species	**Basal Area/Ac**	**Mean Stand Diam**	**Trees/Acre**	**% Acceptable**
Pine, white	167	14.2	189	76
Oak, Black	7	20.0	3	100
Pine, pitch	7	11.0	10	0
All Species	**180**	**14.3**	**203**	**74**