

**Practice Plan for Sparta Mountain Wildlife Management Area (WMA)**  
**Stand 33: Restore Old Growth**

This practice plan addresses a general activity provided for in year 2017-2018 of the management schedule within the approved *Sparta Mountain Forest Stewardship Plan*.

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 Practice Plan Date: February 1, 2018

Practice Plan being submitted on behalf of the New Jersey Department of Environmental Protection,  
 Division of Fish and Wildlife, PO Box 420 MC 501-03, Trenton, NJ 08625

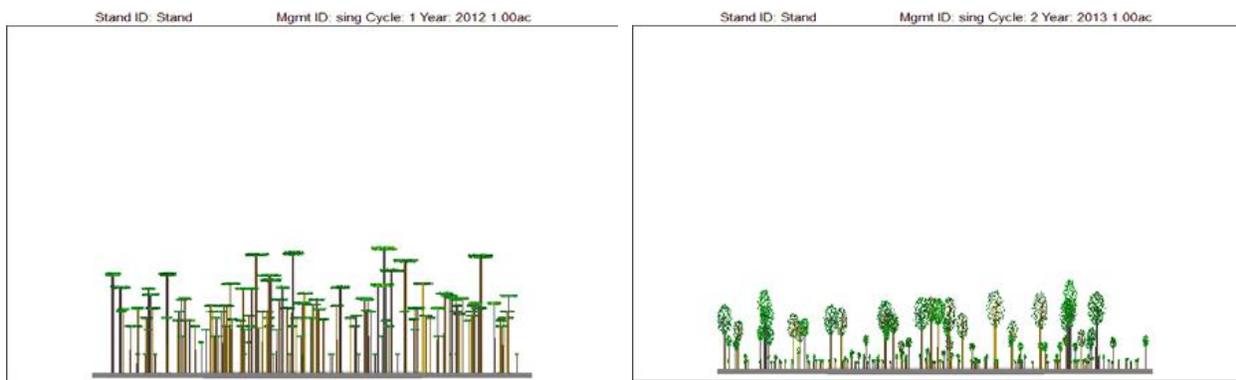
Property parcel data below as referenced in the approved Sparta Mountain Forest Stewardship Plan and on the original property deeds. Some township block and lot designations may have since changed.

Sparta Township Sussex County	Hardyston Township Sussex County	Borough of Ogdensburg Sussex County
Block 1, Lots 1.02, 1.03 & 2	Block 35, Lot 18	Block 1, Lot 1
Block 2, Lot 1	Block 59, Lot 1	Block 1, Lot 3
Block 3, Lots 1, 12, 13, 14 & 21	Block 60, Lot 1	Block 11, Lot 35
Block 7, Lots 2, 2.01, 16,17 & 90	Block 60, Lot 1.03	
	Block 60, Lot 2.01	
	Block 60, Lot 2.02	
	Block 60, Lot 3.02	
	Block 60, Lot 17	

**Purpose**

The management objective is to accelerate old growth attributes within a forest type that is better suited to developing a climax forest. This system mimics the natural regeneration processes of an old-growth forest through a concept known as “gap-phase replacement”. Gap phase replacement means that the small canopy gaps created via the death (natural or anthropogenic) of individual or small groups of trees provide opportunities to release preexisting shade tolerant trees, or to stimulate some new shade tolerant regeneration. The proposed treatment of this stand is aimed at maintaining its ecological integrity; specifically the shade tolerant and potentially moisture sensitive species composition. Uneven-aged management entails the continual recruitment of new cohorts of trees into the stand, eventually having three or more age classes existing at any given time. Proper implementation requires removal of trees from all size classes to avoid skewing the residual tree distribution into a singular stand structure. Trees targeted for removal

are those declining in health, or those unlikely to persist under the site conditions that are perpetuated under a climax forest ecosystem. The small openings also present opportunities for moisture sensitive herbaceous plants to benefit from additional, but moderate amounts of light that are often associated with increased flowering and seed production. In short, this system enhances stand complexity while buffering the short-term, but extreme, changes to the site conditions experienced under some other silvicultural and natural disturbances. Proactively manipulating the stand, rather than waiting for natural mortality to occur, helps to increase the forest's resiliency to the sometimes more severe impacts resulting from natural causes (e.g. severe storm events or widespread pathogen outbreaks). Below find a Stand Visualization Simulator (SVS) depiction of pre- and post-treatment, respectively.



### **Site Description**

This project site is located in the far northeastern section of property, roughly 500+/- feet west of Tamarack Lake in Hardyston Township. The treatment site's primary access is from Route 23 in the north. The area is a gently sloping hillside roughly 17 acres in size, has an irregular border, and is predominately oak/hickory. The stand is comprised of Hollis Rock Outcrop/Chatfield Complex soils with scattered large boulders. The soil is generally rocky, well rooted and highly unlikely to erode post treatment. Most trees are pole to small sawlog sized. The configuration of the treatment follows both land contours and clear forest type boundaries. Topography is mostly gentle, with some undulations in terrain and areas with large rock outcrops and boulders. The northern extent of the site is flat and has an established access road.

Wetlands, streams, and water bodies: The project boundaries were compared against NJDEP GIS 2012 wetland mapping as well as stream and water body layers. Franklin Pond Creek is >150 feet from the project boundary except where the stream runs adjacent to State Highway 23. North and west of the project area, freshwater wetlands are >50 feet from the project boundary with an existing old woods road in between. East of the project area freshwater wetlands are >35 feet from the project boundary. Areas within the project boundary that are within 150 feet of freshwater wetlands will maintain >75% canopy cover and Forestry and Wetland BMPs will be

implemented as necessary. No heavy machinery or herbicides will be used in the project area. The entire project area was also physically walked to field verify if unmapped wetlands exist, and none were found

Rare plants: Review of information in the Natural Heritage (Biotics) Database, as well as review of the results of field surveys performed in the Sparta Mountain WMA during 2017 but not currently documented in Biotics, has indicated one potential occurrence of a State Endangered plant species in the project boundary. No activity will be conducted within 100 feet of the potential occurrence.

Rare Wildlife: Review of information in NJDEP’s Landscape Project (v3.3) has indicated the project area likely contains habitat for Indiana bat hibernacula, maternity roosts and foraging. The proposed tree felling period (Nov 16 – March 31) aligns with USFWS recommendations that all cutting of vegetation/trees with  $\geq 5''$  DBH (using machinery and/or by hand/on foot) occur between October 1 and March 31 to minimize harm to roosting Indiana bats. Efforts will be made to retain trees and shrubs  $> 5$  meters high with sloughing bark and/or bark with cavities/cracks/crevices as potential maternity roosts.

The proposed tree felling period aligns also with recommendations from NJ Fish and Wildlife’s Endangered and Nongame Species Program to minimize harm to breeding songbird, raptor, reptile, and insect species of concern documented in the area. The area is  $>500$  feet from documented raptor nests and  $>400$  feet from documented vernal pools.

**Forest Description**

Preliminary site visits indicate that the general location has a relatively diverse woody shrub understory, native grasses and other herbaceous plants. Most of the advanced tree regeneration is comprised of shade intolerants awaiting release. The site has very few non-native invasive species, so any post treatment germination will be highly controllable before becoming widespread. Inventory data suggests the following forest composition:

	Total	Red Oak	Ches Oak	Red Mpl	Mock Hick	Wh Oak	Beech	Wh Ash	Bl Birch	Sug Mpl
Basal Area	110.8	38.1	31.2	9.2	8.1	5.8	4.6	3.5	3.5	3.5
Stems/Ac	270.5	86.2	40	30	17.3	9.8	17.7	9.6	18.4	37.3
Quad. DBH	8.7	9	11.9	7.5	9.2	10.4	6.9	8.1	5.9	4.1
Net Bdft/Ac	3,772	1,779	1,462	92	168	89	0	0	0	92
Net Cords/Ac	21	8	7	1	1	1	1	1	0	0.5

## Treatment Description

Variable retention forest management using a combination of single tree selection and group selection is prescribed in Year 1 of the Sparta Mountain WMA Forest Stewardship Plan for < 17 acres in Stand 33 (see pages 64-67 in the plan). Chainsaws or hatchets will be used to mechanically girdle or fell trees, and all felled trees will be left on site. Trees marked for felling/girdling are either in declining health or unlikely to persist under the site conditions of a climax forest ecosystem. Primary access will be from Route 23 in the north. No heavy machinery or herbicides will be used. Forestry and Wetland BMPs will be implemented as necessary. Herbicide treatment for invasive plants is not needed. Tree felling will be conducted prior to April 1, 2018 but may resume after November 15, 2018.

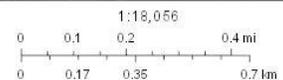
## Treatment Maps

Sparta Mountain WMA Forest Stewardship Year 1 Activities: Stand 33



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Stand 33 - Sparta\_forest\_mgmt

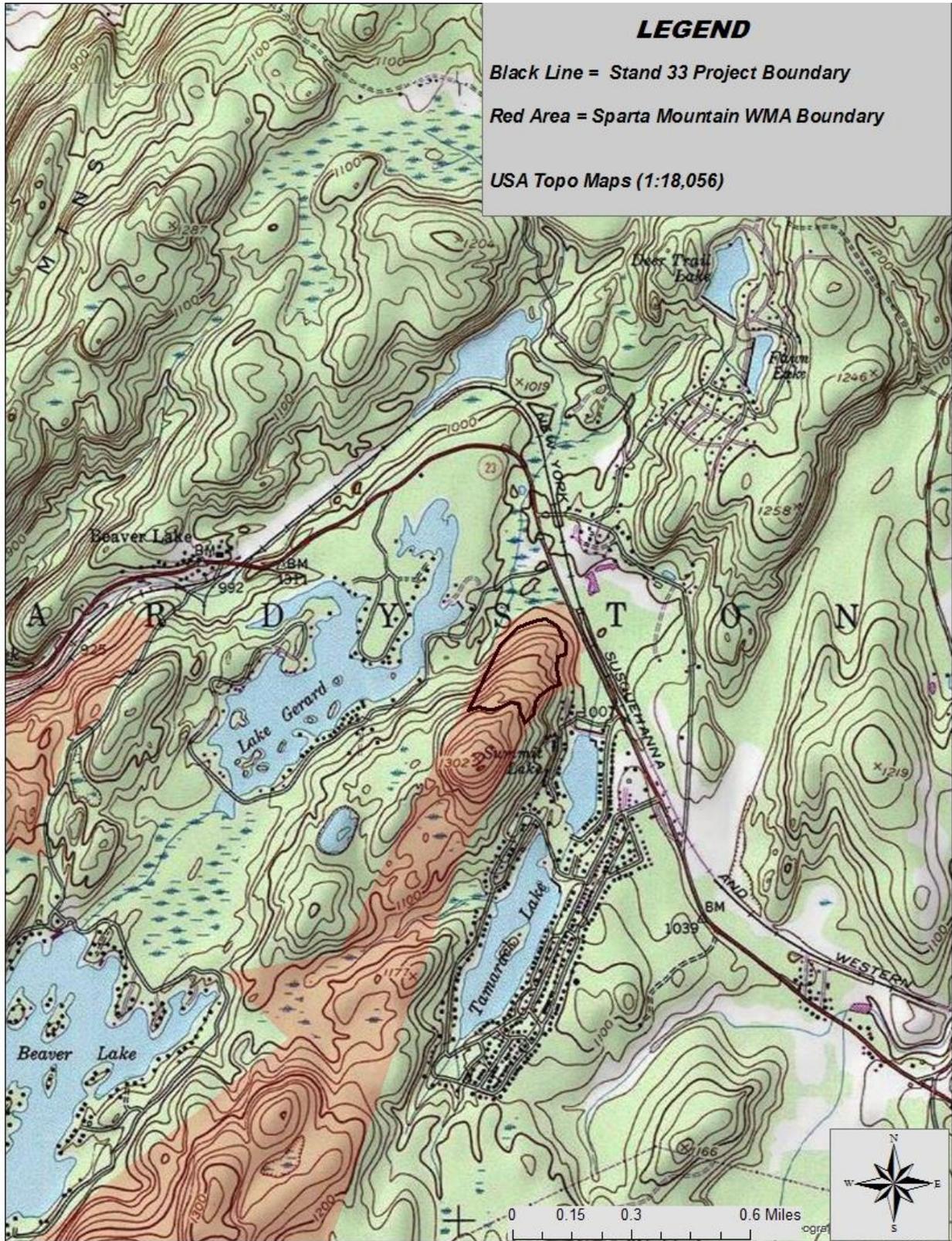


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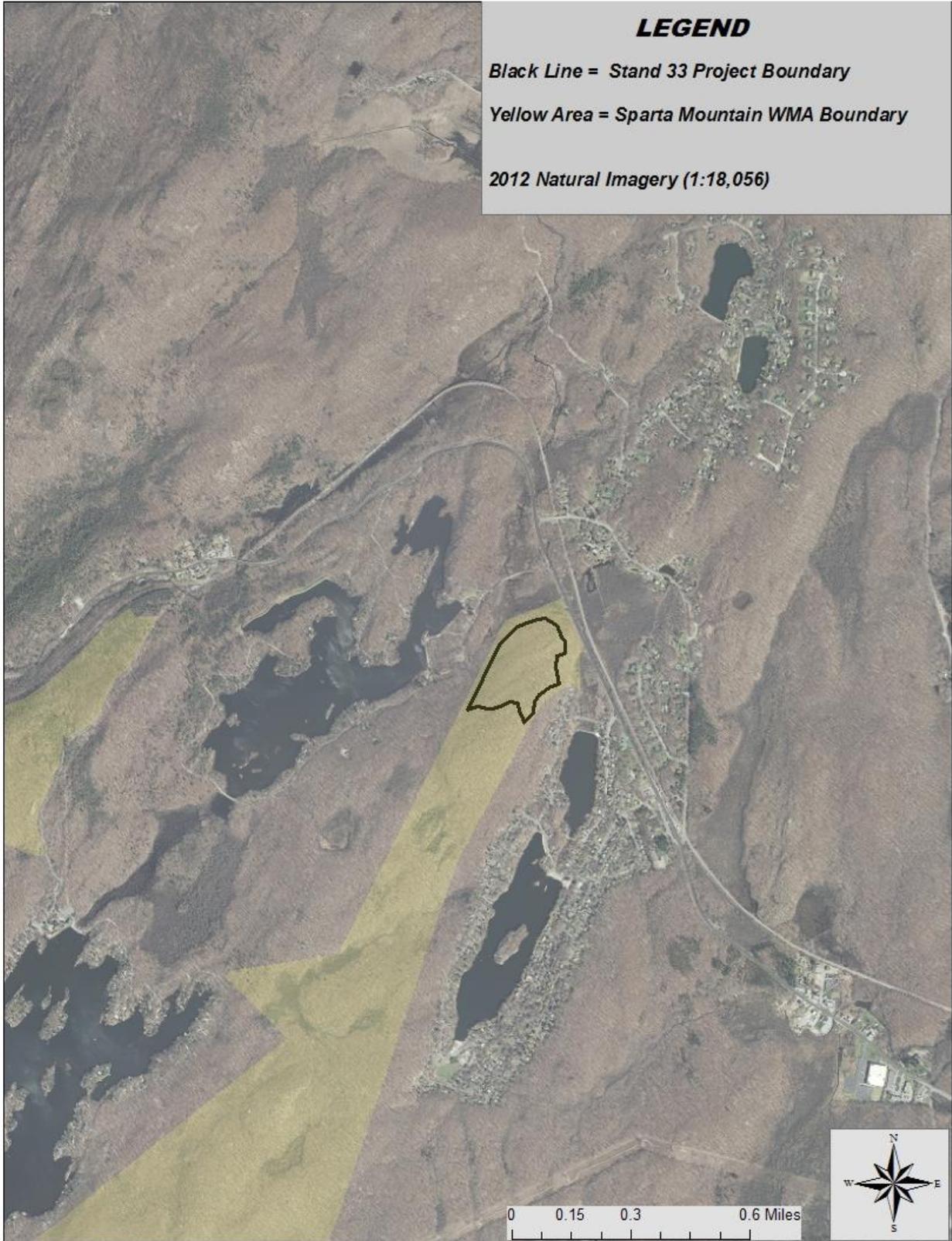
Web AppBuilder for ArcGIS

Source data provided by NJ Department of Environmental Protection, Division of Information Technology, Bureau of Geographic Information Systems, | New Jersey Office of Information Technology (NJ-OIT), Office of Geographic Information Systems | New Jersey

# Sparta Mountain Stand 33 Project Location and Topography



# Sparta Mountain Stand 33 Project Location and 2012 Imagery



# Sparta Mountain Stand 33 Project Location and Wetlands

