**Forestry Practice Plan for Sparta Mountain Wildlife Management Area (SMWMA)**

Practice Plan Date: June 16, 2020

Practice Plan for an activity prescribed in the approved
*Sparta Mountain Forest Stewardship Plan,* dated March 13, 2017

Practice Plan 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<br>Sussex County | Hardyston Township<br>Sussex County | Borough of Ogdensburg<br>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, 2.01, 2.02, 3.02, 17 | |

Practice Plan Prepared by: Don Donnelly, Forester
New Jersey Audubon Society
1024 Anderson Road, Port Murray, NJ 07865

Forester Signature: _____ Date: _____

# Table of Contents

Purpose ..... 3
Project Location ..... 3
Project Size ..... 4
Access ..... 4
Topography and Soils ..... 5
Wetlands ..... 5
Vernal Pools ..... 5
Streams and Water Bodies ..... 5
Rare Plants ..... 6
Rare Wildlife ..... 6
Equipment to be Used ..... 6
Project Vegetation ..... 7
Overstory Summary and Stocking Tables: (June 2020 inventory data) ..... 8
Basal area per acre ..... 9
Number of trees per acre ..... 10
Net cords per acre ..... 11
Net board-foot volume per acre, Scribner ..... 12
Treatment Description ..... 13
List of Attached Maps ..... 14

## Purpose

Using the broad management objectives outlined in the approved SMWMA Forest Stewardship Plan (hereinafter referred to as FSP), the purpose of this project is to regenerate patches of maturing forest by opening the canopy sufficiently for intolerant and mid-tolerant vegetation associated with the central hardwood oak-hickory forest type to germinate. Of primary importance is the development of early seral stage vegetation other than trees, including a variety of shrubs, sedges and forbs. The increased plant diversity and low-level structure will promote biodiversity and sustain a complexity of habitat types in the region while helping to perpetuate species that co-evolved with the ephemeral nature of stand replacement natural disturbances. Many such species have become increasingly less common in the northeast because of land use changes following European settlement, along with other subsequent anthropogenic influences on the forest. The early successional habitat being targeted as an outcome of this project will provide necessary breeding and/or foraging habitat for over 60 different bird species including the state endangered Golden-winged warbler (GWWA), which is a priority species for management in this area. The habitat will also serve a variety of mammals and reptiles that prefer young forest conditions. Monitoring done on previously managed sites like this has shown bird species diversity typically increases by nearly 100% within five years post-treatment, and 2020 marked the first confirmed sighting of a GWWA using a similar project site on Sparta Mountain that had been treated six years ago; sboth are evidence that these management tactics are beneficial for many wildlife species.

## Project Location

The project is within Sparta Township, situated approximately ¼ mile east of Hawthorne Lake Road and about ⅓ mile south of Edison Road (see attached project location map).

This site is located within Stand 12 of the FSP, which is an area recommended for management in year three of the FSP management schedule. The specific location for this project in Stand 12 was selected through a series of steps to minimize conflicts with other resources in the area. An initial office screening was completed by NJDEP Endangered and Non-game Species Program (ENSP) biologist Sharon Petzinger, using the results of the NJDEP rare plant survey to buffer rare plant locations in accordance with distances agreed upon by the Office of Natural Lands Management (ONLM). That was followed by eliminating all land mapped by the NJDEP as wetlands per NJDEP's 2015 Land Use/Land Cover streams per NJDEP's Surface Water Quality Standards layer, and areas within 400 feet of potential and certified vernal pools, per NJDEP's Landscape Project V3.3 vernal pool layer. The remaining land mass within Stand 12 was then field inspected to determine how the site might be accessed without building new roads, and if appropriate vegetation exists to manage for the targeted response, and what sections need to be avoided because of undesirable operating conditions or erosion prone soils. The locations deemed acceptable were then further inspected to confirm that unmapped wetlands, streams, and

vernal pools were not present. This process eliminated more than half of the stand acreage from consideration and necessitated positioning the project polygon adjacent to an expansive non-forest area associated with a utility right-of-way and Collins Pond. These non-forest features significantly decrease the site's desirability as GWWA breeding habitat (which is a primary management objective), and they increase the potential for invasive plants to migrate into the site over time.

The project polygon was then shared with outside parties like the NJ Highlands Coalition to solicit input on any resource information may have been overlooked during the site selection process before proceeding.

**Project Size**

The project area is 10 acres in size, which falls within the acreage range prescribed in the approved FSP. The area is delineated in the field by orange paint dots on the boundary trees facing into the harvest block (normally two dots per boundary tree).

**Access**

The project will be accessed from an existing parking area on Edison Road, then following an existing woods road used by the utility companies to maintain the right-of-way. The access road is currently gated to restrict unauthorized use and has sections that have been previously improved (rough grading and crushed stone placement) for utility access. The access road leaves the right-of-way and re-enters the forest at the north end of the project. Utilizing this road will alleviate the need to construct new access or to cross through any sensitive or environmentally regulated features (see attached access map).

Logs will be transported from the project site to a staging area positioned near the gate at the parking area off Edison Road, with two alternate locations within the right-of-way for temporary log storage. A crushed stone tracking pad will be installed in the parking area to avoid dirt and mud tracking onto Edison Road. The stone pad will be similar to the tracking pads constructed in prior years at projects throughout SMWMA. To this author's knowledge, there have been zero complaints by the local community regarding problems arising from log trucks leaving any project site at SMWMA since forestry work began in 2011.

The existing dirt roads within the project area, like many in SMWMA, are visible in the 1930s aerial photographs and have remained generally stable after more than 100 years of use because of the high rock content in the soil. The roads in the project area are not maintained by the utility companies, but they do experience all-terrain vehicle and bicycle traffic that keeps them open. The roads will be maintained in a passable condition at the close of the project.

## Topography and Soils

The project sits on a gently sloping hillside that is predominantly east facing. As per USDA Natural Resources Conservation Service (NRCS) soil mapping, the primary soil type here is RokD - Rockaway-Chatfield-Rock outcrop complex, with a small area of HncD - Hollis-Rock outcrop-Chatfield complex found in the west near the right-of-way. These are moderately productive soils that contain a relatively high proportion of stone fragments of variable sizes, which helps to mitigate the erosion and compaction hazards that can arise when using equipment (see attached soil map). Other than a few isolated rock outcroppings in the west, there are no prominent landforms where soil depth changes dramatically. As with most places in SMWMA, there is evidence of prior resource extraction activities in this area, including mining/charcoal pits and decayed tree stumps.

## Wetlands

The original project boundaries were established using the NJDEP 2015 Land Use/Land Cover wetland mapping data to maintain a buffer between the project and suspected wetlands. A field inspection was also completed to ensure that the wetland edges are indeed buffered from the project boundaries. The interior of the project was physically walked to verify that no unmapped wetlands exist within the site. This project will have no effect on wetland resources (see attached access map for wetland locations).

## Vernal Pools

There are no certified vernal pools in the vicinity of the site, but a suspected pool exists in the forest to the north of the project. In accordance with ENSP recommendations and other supporting guidance, the project should be positioned at least 400’ from the pool to avoid impacting the amphibian life surrounding the pool. Unlike some vernal pools that exhibit a gradual transition zone between the pool and surrounding uplands, the area in question has a distinct “hard edge” that demarcates the area of inundation. To ensure that at least 400’ exist between the pool edge and the project, a waypoint was established at both locations and a distance calculation done. The project boundary was found to be greater than 400’ from the suspected vernal pool (see attached map for vernal pool location).

## Streams and Water Bodies

The project boundaries were compared against NJDEP GIS stream and water body layers. Collins pond is the only classified waterbody in the vicinity of the project, and it has been buffered in accordance with the riparian requirements of the Flood Hazard Area Control Act based on its Surface Water Quality Standard designation. There appears to be an unclassified intermittent drainage outside of the project in association with the wetland complex to the east. This drainage feeds into a larger wetland complex to the north that does not have a classified

waterbody in it. This project will not affect the reach and flow of any waterway or affect water resources (see attached map).

**Rare Plants**

This author has no knowledge of rare plant locations as they pertain to this project. However, the project location and general activity parameters have already gone through the NJDEP Land Management Review (LMR) process, and as part of that process, the ONLM has determined that rare plants are buffered appropriately and will not be directly impacted by the project.

**Rare Wildlife**

This author has no knowledge of rare wildlife locations as they pertain to this project. However, the project location and general activity parameters have already gone through the NJDEP Land Management Review (LMR) process, and as part of that process, the ENSP has determined that rare wildlife will not be affected by the project as long as the tree felling occurs between November 15th to March 31st.

**Equipment to be Used**

1) Skidder and/or mechanical felling equipment similar in size to typical construction equipment such as a backhoe or excavator. The equipment will be offloaded from a trailer at the parking area off Edison Road at the beginning of the project, then left on-site during the project and hauled out on a trailer at the end of the project. Additionally, a tractor sized forwarder may be utilized to transport logs to the staging area instead of skidding them on the access road.

2) Log transportation away from the staging area will be done using a truck that complies with municipal and NJ Department of Transportation (DOT) requirements; similar in weight capacity to other vehicles commonly encountered on public roads such as garbage trucks, moving trucks and heating oil delivery vehicles. In total, log trucks will transport the equivalent to approximately 200 cords, or roughly 20 truckloads of logs, out of the access road onto Edison Road over the course of 2-12 months. All transportation vehicles and operators will be aware of and follow weight restrictions and operating rules for the roads they travel.

## Project Vegetation

The 10-acre project area was inventoried in June 2020 for site-specific vegetation data. Eleven, evenly spaced inventory plots were measured using a 10 BAF prism. The resulting data was processed using a 90% confidence, yielding a mean basal area of 132.7 +/- 13.9 square feet per acre (10.4% of mean). The area in question is part of a mixed upland oak stand and the site is dominated by red oak in the co-dominant size class. It is considered a small – medium sawtimber size stand with co-dominant stems ranging from 9”- 19” DBH. The average medial diameter is 13.1 inches. Red oak accounts for 43% of the stocking, followed by hickory (mostly mockernut) at 13%. Other tree species that are present include sugar maple, chestnut oak, red maple, black oak, black birch, white ash, serviceberry, white oak, black cherry, sassafras, scarlet oak, hop hornbeam, tulip poplar, beech, and basswood (the last five species occurring so infrequently that they were not captured as part of the sampling). The sapling size classes is dominated by red maple, serviceberry, hickory, and black birch. The effective stand age is 80-90 years old. The shrub layer is sparse in most places, consisting of mostly huckleberries, witch hazel, and some laurel in the southern end. Ground cover is unremarkable, consisting of typical woodland herbs and forbs with occasional sedge patches. Woodland ferns and other potential interfering vegetation are either absent or in low abundance, and lianas are also low in abundance. Seedling regeneration of various species is present in adequate quantities but are generally suppressed at less than 12” height due to overstory density (relative density = 99%). Leaf litter and organic matter on the forest floor is less than 2” and should not inhibit post-harvest germination. Invasive plants found in the project site include ailanthus (3 stems), Japanese barberry (< 8 plants) and multiflora rose (1 plant). All invasives were culled during the inventory.

## Overstory Summary and Stocking Tables: (June 2020 inventory data)

**Composition - BA, percent BA, trees per acre**

| | all species | all oaks | NRO | H | SM | CO | RM | BO | SB | WA | SVB | WO | BC | SAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total BA** | **132.7** | **78.2** | 57.3 | 17.3 | 12.7 | 11.8 | 10.9 | 6.4 | 4.5 | 3.6 | 2.7 | 2.7 | 1.8 | 0.9 |
| **Percent BA** | **100** | **59** | 43 | 13 | 10 | 9 | 8 | 5 | 3 | 3 | 2 | 2 | 1 | 1 |
| **Trees per acre** | **663** | **71.4** | 45.6 | 122.1 | 51.4 | 17.6 | 217.0 | 4.5 | 57.5 | 5.9 | 93.8 | 3.7 | 42.5 | 1.7 |

**Quality - percent in Acceptable Growing Stock**

| | all species | all oaks | NRO | H | SM | CO | RM | BO | SB | WA | SVB | WO | BC | SAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Saplings** | **68** | **0** | 0 | 33 | 100 | 0 | 71 | 0 | 100 | 0 | 67 | 0 | 0 | 0 |
| **Poles** | **44** | **15** | 29 | 100 | 100 | 0 | 20 | 0 | 100 | 0 | 0 | 0 | 0 | 0 |
| **Small sawtimber** | **82** | **75** | 76 | 100 | 100 | 60 | 0 | 100 | 100 | 0 | 0 | 50 | 100 | 0 |
| **Medium sawtimber** | **100** | **100** | 100 | 100 | 100 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Large sawtimber** | **100** | **100** | 100 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| **All sizes** | **77** | **78** | 84 | 89 | 100 | 46 | 50 | 100 | 100 | 0 | 67 | 33 | 50 | 0 |

**Diameters and Ages - inches, years**

| | all species | all oaks | NRO | H | SM | CO | RM | BO | SB | WA | SVB | WO | BC | SAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Medial diameter** | **13.1** | **16.4** | 17.3 | 10.4 | 10.0 | 12.9 | 4.5 | 17.1 | 7.2 | 11.0 | 2.7 | 12.0 | 8.0 | 10.0 |
| **Quadratic mean diameter** | **6.1** | **14.2** | 15.2 | 5.1 | 6.7 | 11.1 | 3.0 | 16.0 | 3.8 | 10.7 | 2.3 | 11.7 | 2.8 | 10.0 |
| | | | | | | | | | | | | | | |
| **Effective age** | **82** | **88** | 86 | 79 | 78 | 86 | 34 | 114 | 67 | 55 | 0 | 80 | 70 | 67 |

**Relative density - percent**

| | all species | all oaks | NRO | H | SM | CO | RM | BO | SB | WA | SVB | WO | BC | SAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rel. Density** | **99** | **51** | 31 | 13 | 13 | 11 | 11 | 6 | 4 | 2 | 3 | 3 | 2 | 1 |
| **AGS only** | **73** | **37** | 25 | 11 | 13 | 5 | 6 | 6 | 4 | 0 | 2 | 1 | 0 | 0 |

## Basal area per acre

| Basal area (live trees only) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **all species** | **NRO** | **H** | **SM** | **CO** | **RM** | **BO** | **SB** | **WA** | **SVB** | **WO** | **BC** | **SAS** |
| **2** | **9.1** | 0.0 | 1.8 | 0.0 | 0.0 | 3.6 | 0.0 | 0.9 | 0.0 | 1.8 | 0.0 | 0.9 | 0.0 |
| **4** | **8.2** | 0.0 | 0.9 | 2.7 | 0.0 | 2.7 | 0.0 | 0.9 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 |
| **6** | **8.2** | 0.0 | 2.7 | 1.8 | 0.9 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **8** | **6.4** | 1.8 | 0.9 | 0.9 | 0.0 | 1.8 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **10** | **16.4** | 4.5 | 0.9 | 1.8 | 3.6 | 0.0 | 0.0 | 0.9 | 2.7 | 0.0 | 0.9 | 0.0 | 0.9 |
| **12** | **16.4** | 5.5 | 4.5 | 1.8 | 2.7 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 |
| **14** | **15.5** | 4.5 | 3.6 | 0.9 | 0.0 | 0.0 | 3.6 | 0.0 | 0.9 | 0.0 | 0.9 | 0.9 | 0.0 |
| **16** | **13.6** | 9.1 | 0.9 | 1.8 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **18** | **15.5** | 10.9 | 0.0 | 0.9 | 2.7 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **20** | **8.2** | 8.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **22** | **9.1** | 7.3 | 0.9 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **24** | **4.5** | 3.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **26** | **1.8** | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | | | | | | | | |
| **SAPS** | **17.3** | 0.0 | 2.7 | 2.7 | 0.0 | 6.4 | 0.0 | 1.8 | 0.0 | 2.7 | 0.0 | 0.9 | 0.0 |
| **POLE** | **30.9** | 6.4 | 4.5 | 4.5 | 4.5 | 4.5 | 0.0 | 1.8 | 2.7 | 0.0 | 0.9 | 0.0 | 0.9 |
| **SM SAW** | **45.5** | 19.1 | 9.1 | 4.5 | 4.5 | 0.0 | 3.6 | 0.9 | 0.9 | 0.0 | 1.8 | 0.9 | 0.0 |
| **MD SAW** | **32.7** | 26.4 | 0.9 | 0.9 | 2.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **LG SAW** | **6.4** | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total** | **132.7** | 57.3 | 17.3 | 12.7 | 11.8 | 10.9 | 6.4 | 4.5 | 3.6 | 2.7 | 2.7 | 1.8 | 0.9 |
| **Percent** | | 43.2 | 13.0 | 9.6 | 8.9 | 8.2 | 4.8 | 3.4 | 2.7 | 2.1 | 2.1 | 1.4 | 0.7 |

## Number of trees per acre

| Number of trees (live trees only) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **all species** | **NRO** | **H** | **SM** | **CO** | **RM** | **BO** | **SB** | **WA** | **SVB** | **WO** | **BC** | **SAS** |
| **2** | **416.7** | 0.0 | 83.3 | 0.0 | 0.0 | 166.7 | 0.0 | 41.7 | 0.0 | 83.3 | 0.0 | 41.7 | 0.0 |
| **4** | **93.8** | 0.0 | 10.4 | 31.3 | 0.0 | 31.3 | 0.0 | 10.4 | 0.0 | 10.4 | 0.0 | 0.0 | 0.0 |
| **6** | **41.7** | 0.0 | 13.9 | 9.3 | 4.6 | 13.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **8** | **18.2** | 5.2 | 2.6 | 2.6 | 0.0 | 5.2 | 0.0 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **10** | **30.0** | 8.3 | 1.7 | 3.3 | 6.7 | 0.0 | 0.0 | 1.7 | 5.0 | 0.0 | 1.7 | 0.0 | 1.7 |
| **12** | **20.8** | 6.9 | 5.8 | 2.3 | 3.5 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 |
| **14** | **14.5** | 4.3 | 3.4 | 0.9 | 0.0 | 0.0 | 3.4 | 0.0 | 0.9 | 0.0 | 0.9 | 0.9 | 0.0 |
| **16** | **9.8** | 6.5 | 0.7 | 1.3 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **18** | **8.7** | 6.2 | 0.0 | 0.5 | 1.5 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **20** | **3.8** | 3.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **22** | **3.4** | 2.8 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **24** | **1.4** | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **26** | **0.5** | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | | | | | | | | |
| **SAPS** | **510.5** | 0.0 | 93.8 | 31.3 | 0.0 | 197.9 | 0.0 | 52.1 | 0.0 | 93.8 | 0.0 | 41.7 | 0.0 |
| **POLE** | **89.9** | 13.5 | 18.2 | 15.2 | 11.3 | 19.1 | 0.0 | 4.3 | 5.0 | 0.0 | 1.7 | 0.0 | 1.7 |
| **SM SAW** | **45.1** | 17.7 | 9.8 | 4.5 | 4.8 | 0.0 | 3.4 | 1.2 | 0.9 | 0.0 | 2.0 | 0.9 | 0.0 |
| **MD SAW** | **15.9** | 12.7 | 0.3 | 0.5 | 1.5 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **LG SAW** | **1.9** | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total** | **663.3** | 45.6 | 122.1 | 51.4 | 17.6 | 217.0 | 4.5 | 57.5 | 5.9 | 93.8 | 3.7 | 42.5 | 1.7 |
| **Percent** | | 6.9 | 18.4 | 7.8 | 2.7 | 32.7 | 0.7 | 8.7 | 0.9 | 14.1 | 0.6 | 6.4 | 0.3 |

## Net cords per acre

| Net pulpwood cord volume (live trees only) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **all species** | **NRO** | **H** | **SM** | **CO** | **RM** | **BO** | **SB** | **WA** | **SVB** | **WO** | **BC** | **SAS** |
| **2** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **4** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **6** | **1.0** | 0.0 | 0.3 | 0.2 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **8** | **1.2** | 0.4 | 0.2 | 0.2 | 0.0 | 0.4 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **10** | **3.7** | 1.0 | 0.2 | 0.4 | 0.8 | 0.0 | 0.0 | 0.2 | 0.6 | 0.0 | 0.2 | 0.0 | 0.2 |
| **12** | **3.9** | 1.3 | 1.1 | 0.4 | 0.7 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| **14** | **2.6** | 0.8 | 0.6 | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.1 | 0.0 | 0.1 | 0.2 | 0.0 |
| **16** | **1.8** | 1.1 | 0.1 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **18** | **1.9** | 1.4 | 0.0 | 0.1 | 0.3 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **20** | **0.9** | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **22** | **1.0** | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **24** | **0.7** | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **26** | **0.2** | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | | | | | | | | |
| **SAPS** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **POLE** | **5.8** | 1.4 | 0.7 | 0.8 | 0.9 | 0.7 | 0.0 | 0.3 | 0.6 | 0.0 | 0.2 | 0.0 | 0.2 |
| **SM SAW** | **8.3** | 3.3 | 1.7 | 1.0 | 0.9 | 0.0 | 0.5 | 0.2 | 0.1 | 0.0 | 0.4 | 0.2 | 0.0 |
| **MD SAW** | **3.8** | 3.0 | 0.1 | 0.1 | 0.3 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **LG SAW** | **0.9** | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total** | **18.9** | 8.5 | 2.5 | 1.8 | 2.2 | 0.7 | 0.8 | 0.5 | 0.7 | 0.0 | 0.6 | 0.2 | 0.2 |
| **Percent** | | 45.2 | 13.4 | 9.8 | 11.6 | 3.7 | 4.2 | 2.9 | 3.8 | 0.0 | 3.0 | 1.3 | 1.1 |

## Net board-foot volume per acre, Scribner

| Net board-foot volume, Scribner (live trees only) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **all species** | **NRO** | **H** | **SM** | **CO** | **RM** | **BO** | **SB** | **WA** | **SVB** | **WO** | **BC** | **SAS** |
| **2** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **4** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **6** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **8** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **10** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **12** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **14** | **786.7** | 199.7 | 161.9 | 24.3 | 0.0 | 0.0 | 270.6 | 0.0 | 80.7 | 0.0 | 49.5 | 0.0 | 0.0 |
| **16** | **1047.2** | 755.1 | 72.2 | 58.3 | 161.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **18** | **1433.4** | 991.0 | 0.0 | 72.0 | 259.5 | 0.0 | 110.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **20** | **886.7** | 886.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **22** | **1016.9** | 833.9 | 85.0 | 0.0 | 0.0 | 0.0 | 97.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **24** | **437.1** | 335.9 | 0.0 | 0.0 | 0.0 | 0.0 | 101.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **26** | **196.8** | 196.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | | | | | | | | |
| **SAPS** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **POLE** | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **SM SAW** | **1834.0** | 954.8 | 234.0 | 82.7 | 161.6 | 0.0 | 270.6 | 0.0 | 80.7 | 0.0 | 49.5 | 0.0 | 0.0 |
| **MD SAW** | **3336.9** | 2711.6 | 85.0 | 72.0 | 259.5 | 0.0 | 208.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **LG SAW** | **633.9** | 532.7 | 0.0 | 0.0 | 0.0 | 0.0 | 101.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total** | **5804.8** | 4199.2 | 319.0 | 154.7 | 421.1 | 0.0 | 580.6 | 0.0 | 80.7 | 0.0 | 49.5 | 0.0 | 0.0 |
| **Percent** | | 72.3 | 5.5 | 2.7 | 7.3 | 0.0 | 10.0 | 0.0 | 1.4 | 0.0 | 0.9 | 0.0 | 0.0 |

## Treatment Description

As per the approved FSP, the suggested treatment for Stand 12 during this period calls for implementing a seed tree harvest to create early successional habitat. This will be accomplished by retaining approximately 20 sq. ft of BA/acre across the 10-acre site and removing the remaining stems. This translates to retaining roughly 10 trees per acre that are >8" DBH, preferably from the co-dominant or dominant sizes classes, and preferably stems that are of good vigor for longevity. However, due to site conditions, in some instances it may be preferable to retain clusters of trees – some of which may not fit the above description, and sometimes poor vigor stems will be retained if they have high wildlife value (i.e. stems with advanced decay, cavities or exfoliating bark). Desirable species that are underrepresented in the area (e.g. white oak and black cherry) may also be retained for diversity purposes even if they are of poor vigor or genetics. Additionally, white ash stems that do not already exhibit characteristics of EAB infestation may be preserved to retain genetic diversity in the event those individuals are resistant to the insect.

The designated *leave* trees will be marked with orange tree paint visible from all directions and have orange dots on the stump. All other stems within the harvest block will be harvested and or girdled using chainsaws and/or a mechanical feller. Trees designated with an orange "X" will be girdled and left standing as wildlife habitat, and all existing dead stems that do not present a hazard to workers will be retained even when not marked with orange paint. Branches, slash and some entire trees will be left on the ground for wildlife cover, while other trees may be removed and sold by the contractor at their discretion. Dense slash piles that may present a hazardous fuel concern will be lowered so as not to exceed the height limit recommended by NJ Forest Fire Service. Tree felling is expected to be commence any time after November 15, 2020 and be completed prior to April 1, 2021.

Harvesting and log removal equipment will be confined to the project area and to designated points connecting it to the access road. Logs may be temporarily staged within the project before being transported to a staging area in the right-of-way or at the Edison Road gate. At the close of the harvest, road sections that were impaired by the equipment will be re-graded and water diversions installed as needed. Areas that may be prone to erosion will be temporarily stabilized with an annual seed mix like oats. Numerous non-native invasive plants already exist in the right-of-way, and the site will need to be monitored frequently over the next 10-years to control any populations that emerge in the treatment area.

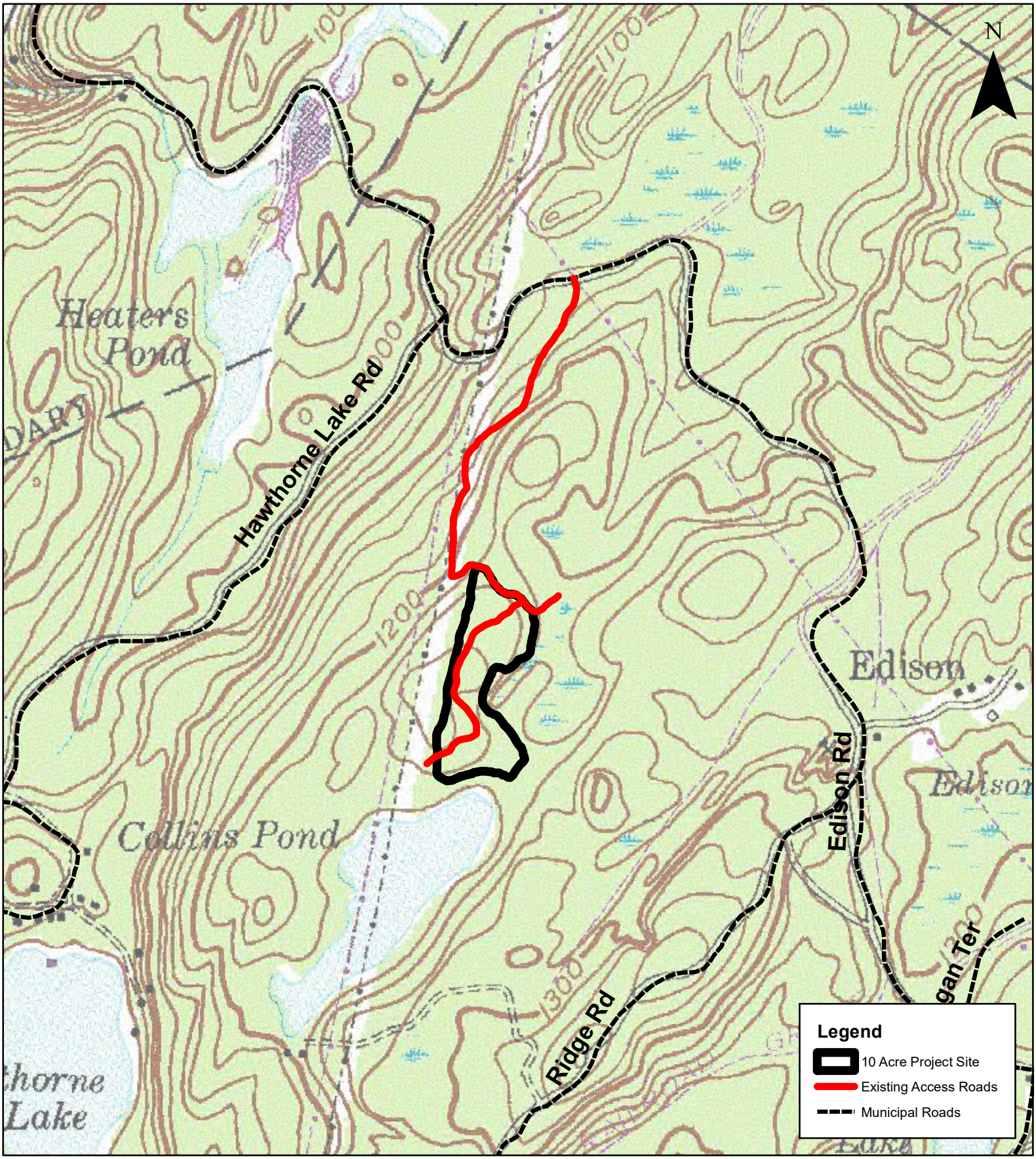
The project will produce an estimated 3,659 board feet of sawtimber per acre and 15 cords of firewood grade material per acre. The project totals are 36,591 board feet of sawtimber and 150 cords of firewood.

**List of Attachments**

- Location Map with topography
- Access Map showing classified waterbodies, wetlands, and vernal pools
- Soils Map

# Sparta WMA Stand 12, 2020 Project Access

1 inch = 768 feet



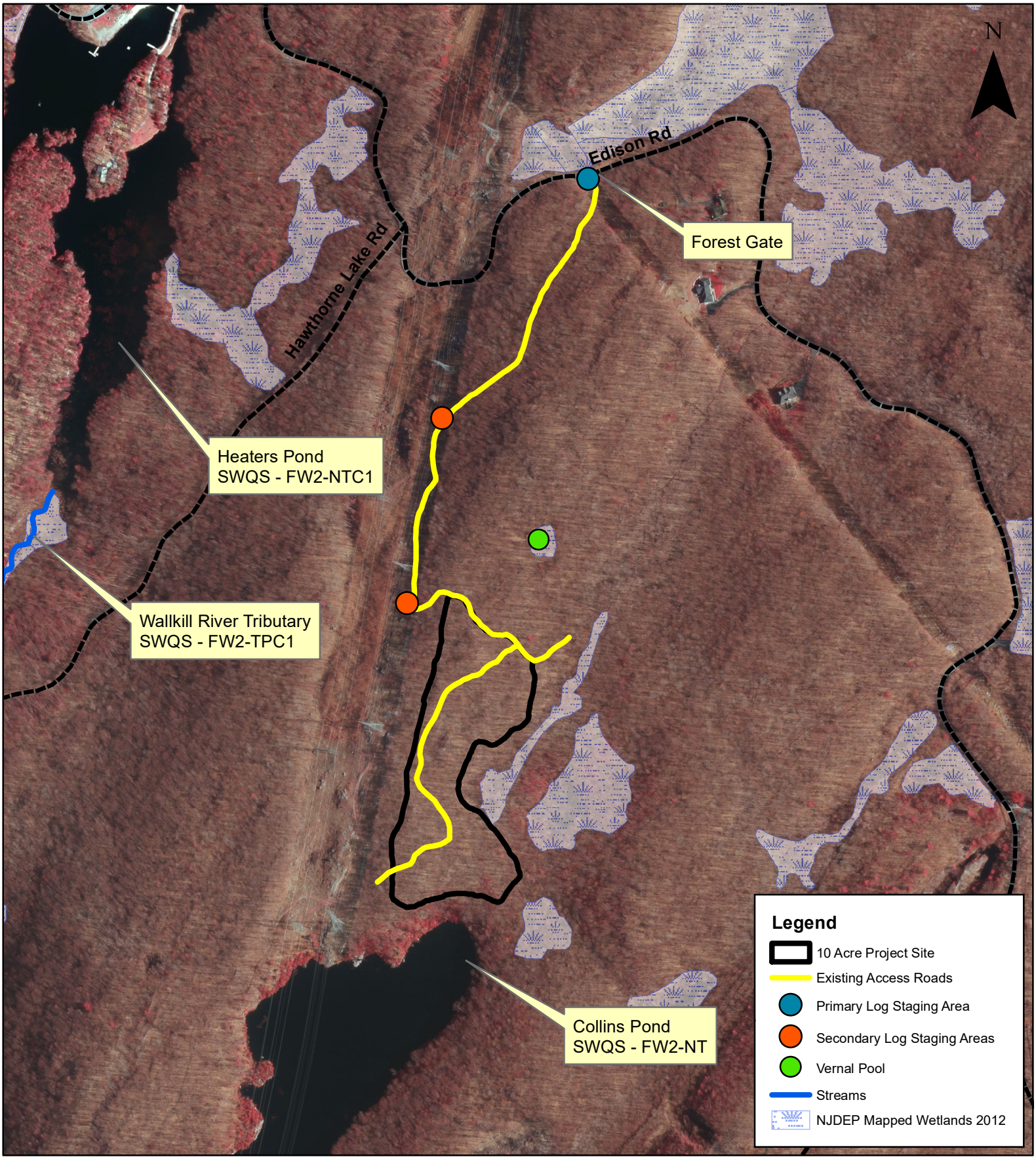

Map created using NJDEP GIS layers

0 500 1,000 2,000 Feet

NEW JERSEY AUDUBON
www.njaudubon.org

# Sparta WMA Stand 12, 2020 Project Access

1 inch = 526 feet



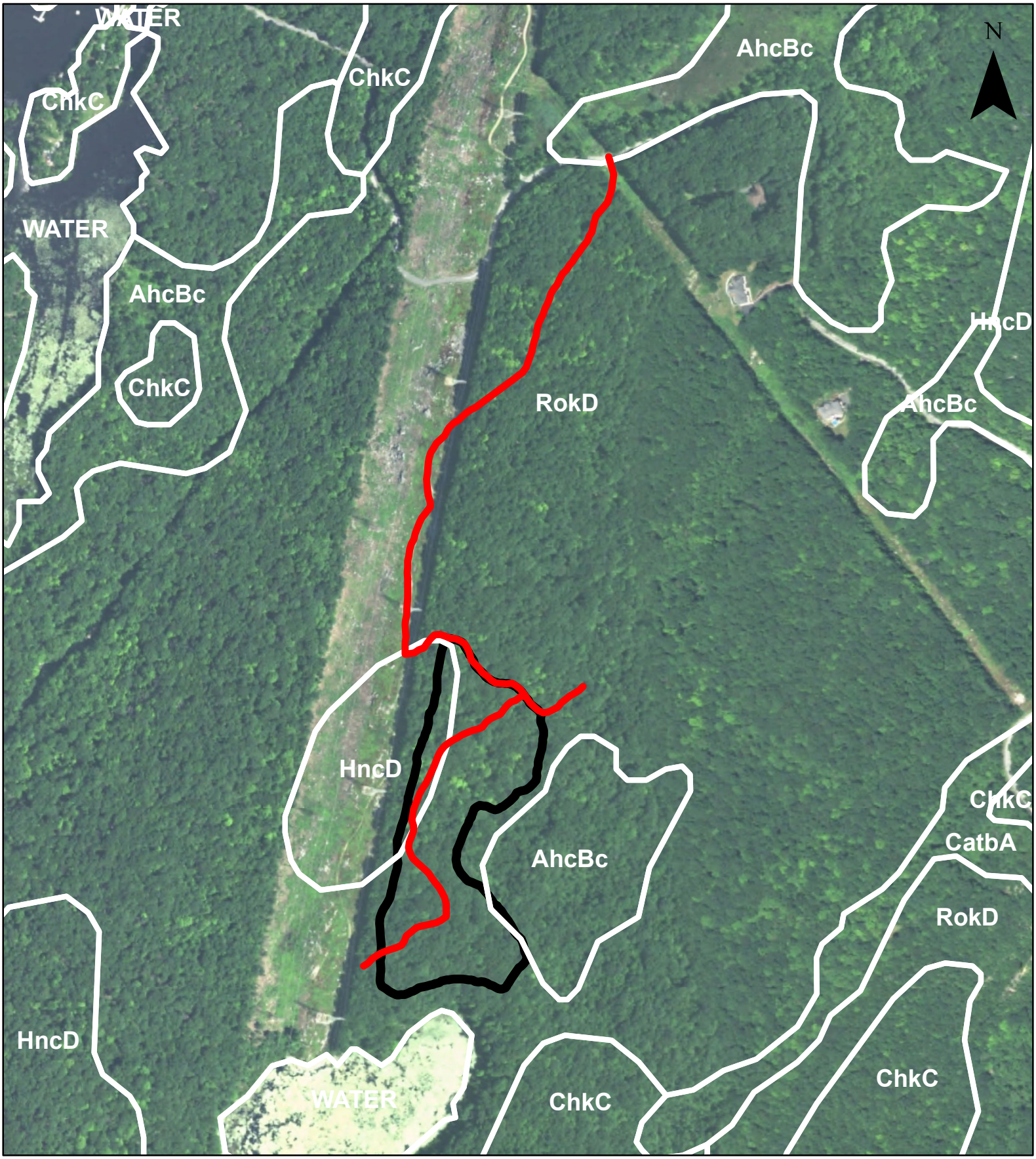

Map created using NJDEP GIS layers

0 350 700 1,400 Feet

NEW JERSEY AUDUBON
www.njaudubon.org

# Sparta WMA Stand 12, 2020 Project Area - Soils Map

1 inch = 460 feet




Map created using NJDEP GIS layers

0 350 700 1,400 Feet

NEW JERSEY AUDUBON
www.njaudubon.org