FOREST STEWARDSHIP PLAN

for

Maryland Department of Natural Resources
Walton Lumber Tract II
Satellite Tract of Salem State Forest

LOCATION

North and South side of Wilderness Road

MD Grid: 152,250/ 915,000

Tax Map 49 Parcel 284

IN

St. Mary's County

ON

137.0 acres woodland

PREPARED BY:

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P. Shannon Wolfe, Forest Technician

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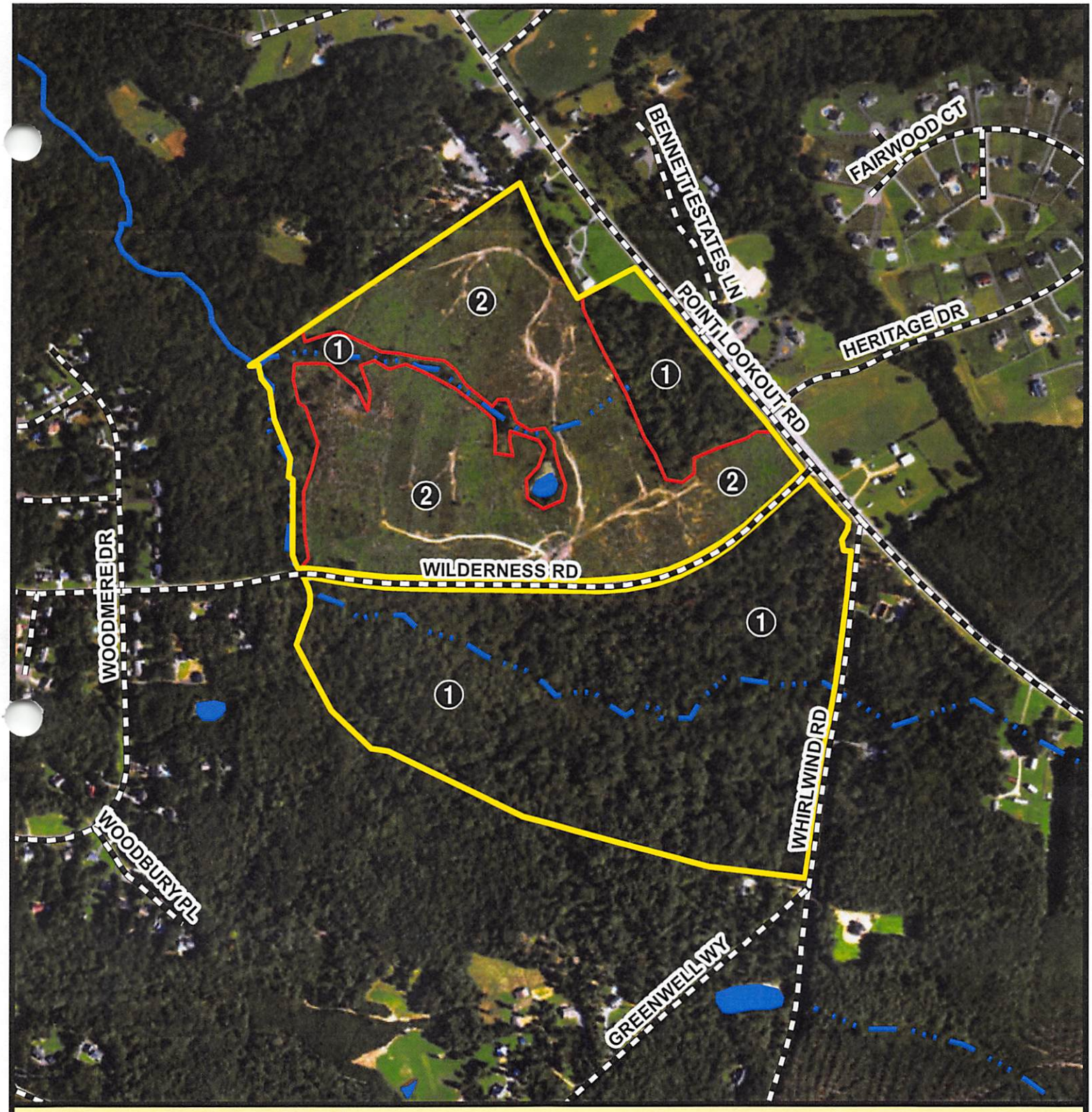
Brian Stupak, Project Manager

March 24, 2016



Legend

- Walton Lumber Tract 2
- Tract_2_Stand_Boundary
- 1 Stand_Number
- Blue_line_Stream
- Intermittent_blue_line_stream
- Open_water
- State_County_Roads

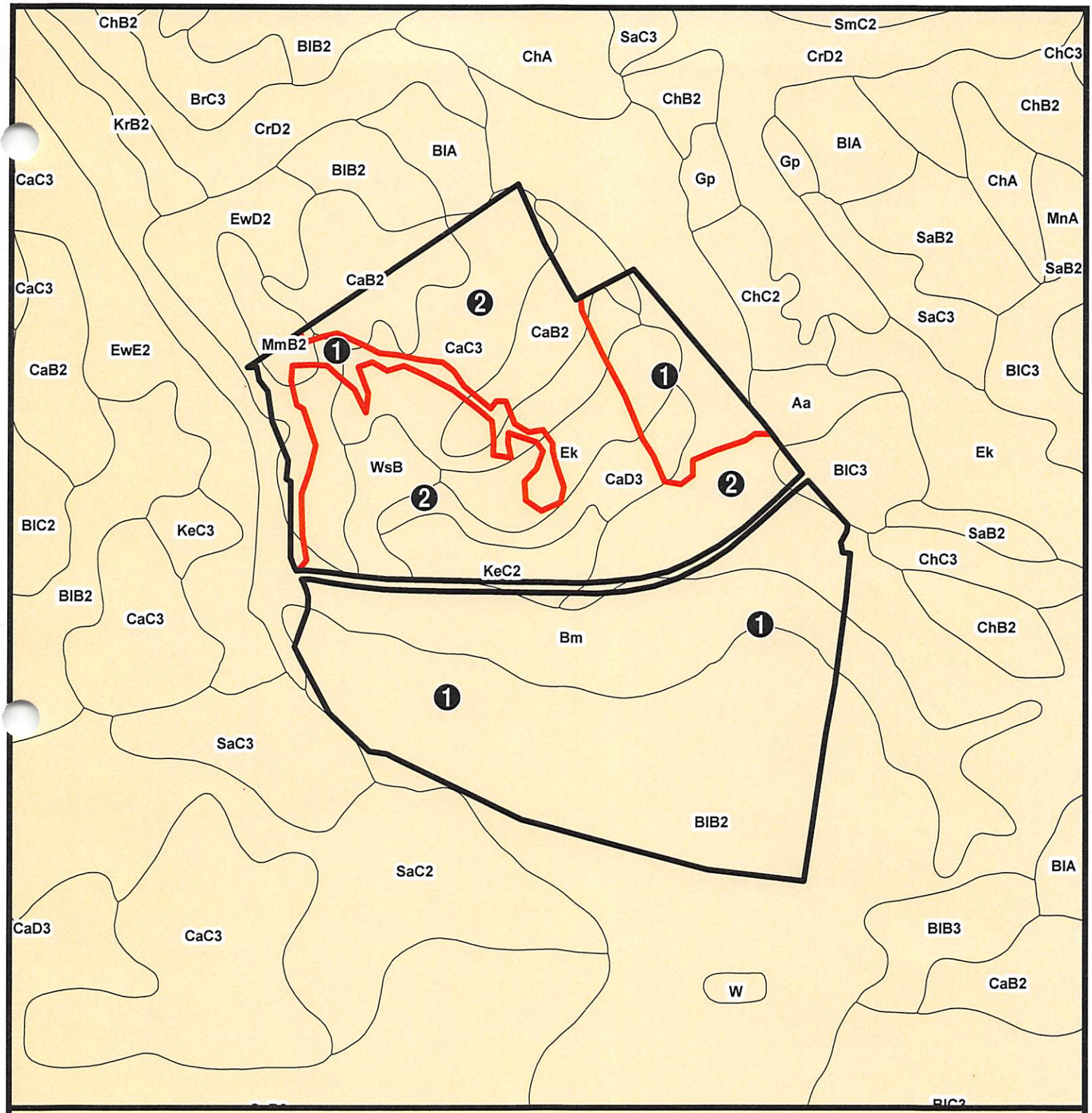
N

MARYLAND FOREST SERVICE

0 330 660 1,320 Feet

Forest Management Map for Salem State Forest Walton Lumber Tract 2

County: St. Mary's
Wooded area: 137
Scale: 1" = 660'
Prepared by: S. Wolfe
Date: 12/14/2015



Legend

- Walton Lumber Tract 2
- Tract_2_Stand_Boundary
- 1 Stand_Number
- Soil Type

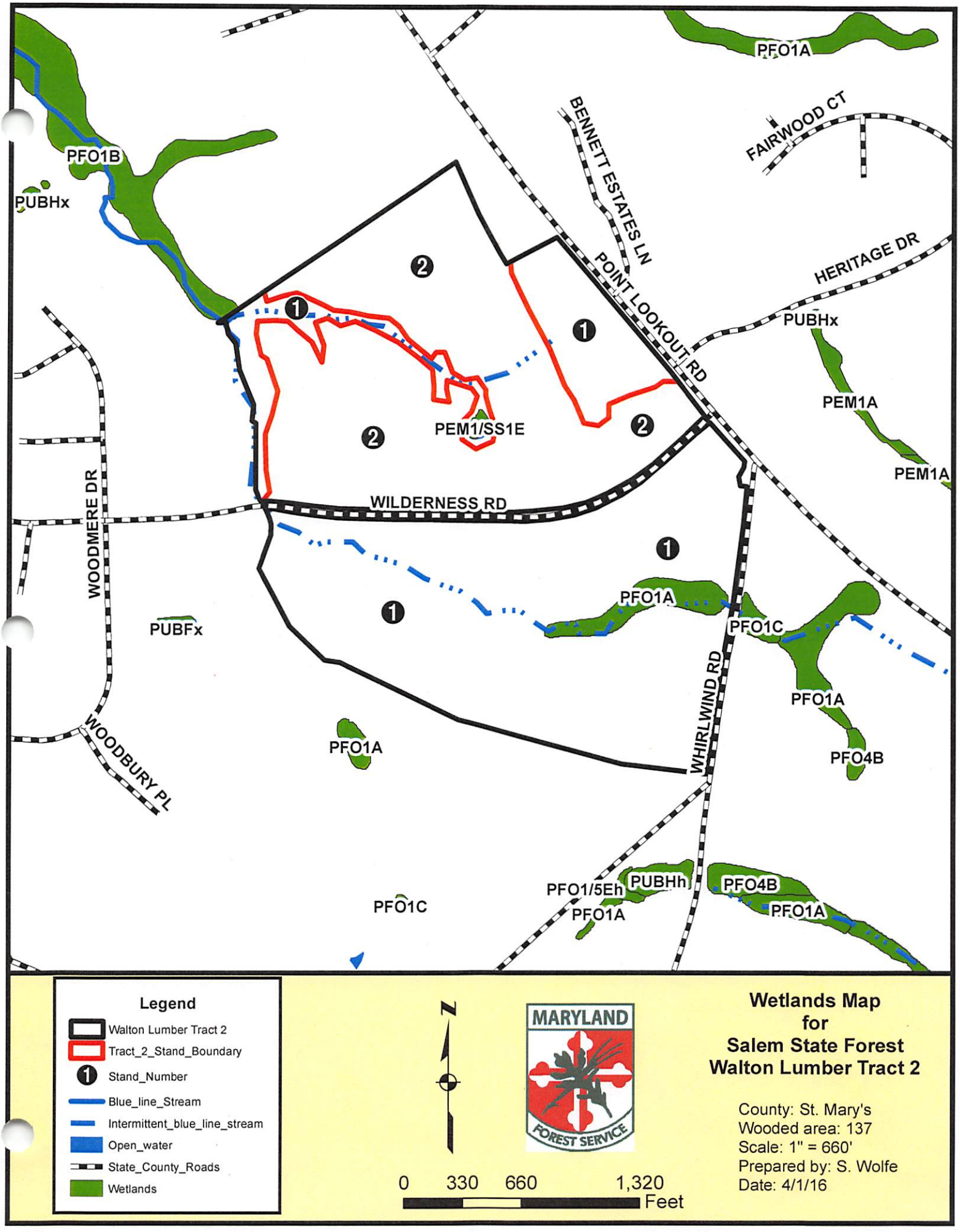
N

0 330 660 1,320 Feet

MARYLAND FOREST SERVICE

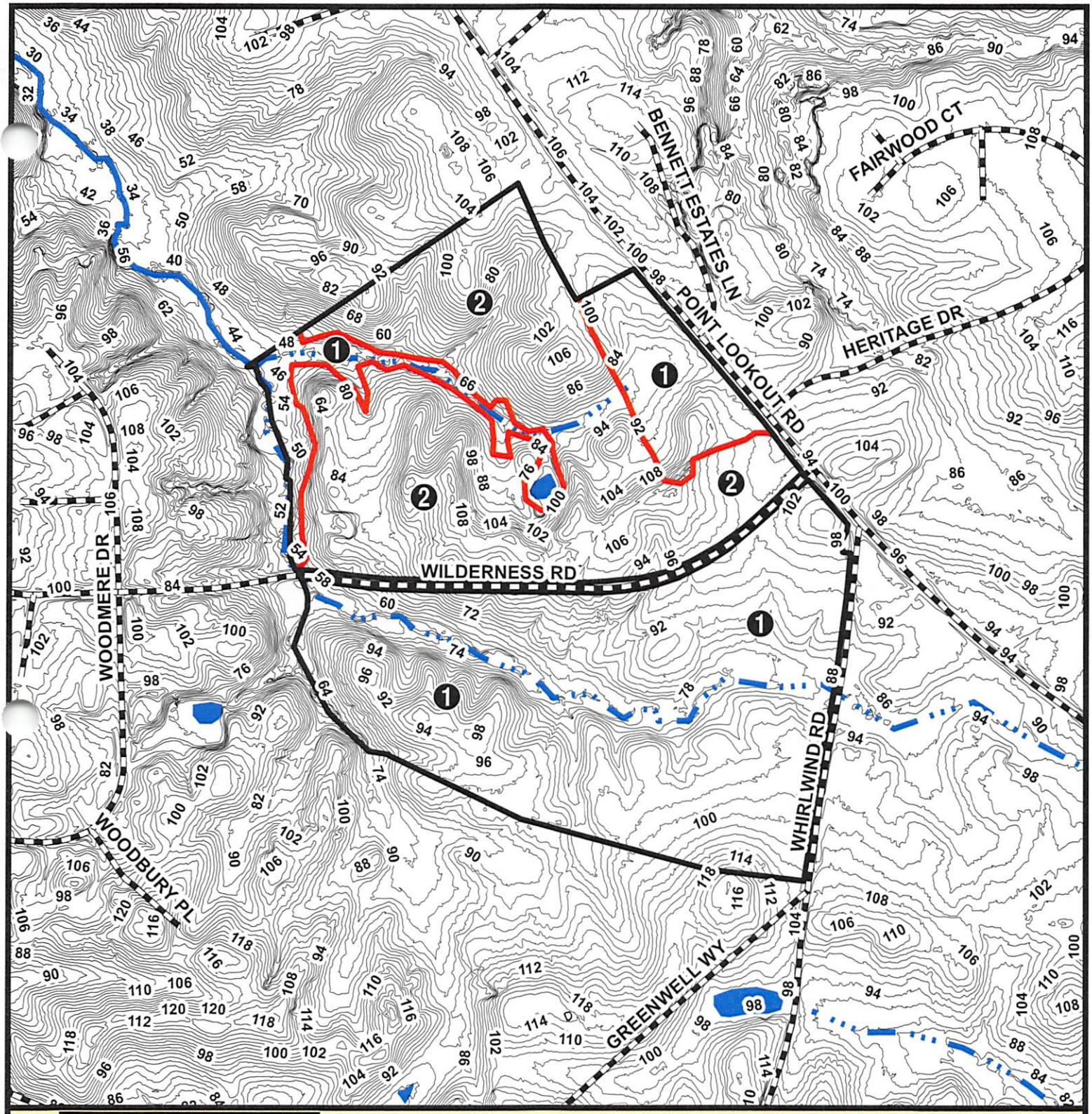
Soils Map for Salem State Forest Walton Lumber Tract 2

County: St. Mary's
Wooded area: 137
Scale: 1" = 660'
Prepared by: S. Wolfe
Date: 4/1/16



Wetlands Map for Salem State Forest Walton Lumber Tract 2

County: St. Mary's
Wooded area: 137
Scale: 1" = 660'
Prepared by: S. Wolfe
Date: 4/1/16



Legend

- Walton Lumber Tract 2
- Tract_2_Stand_Boundary
- Stand_Number
- Blue_line_Stream
- Intermittent_blue_line_stream
- Open_water
- State_County_Roads
- Topo_line_2_ft_contour

N

MARYLAND FOREST SERVICE

0 330 660 1,320 Feet

Forest Management Map for Salem State Forest Walton Lumber Tract 2

County: St. Mary's
Wooded area: 137
Scale: 1" = 660'
Prepared by: S. Wolfe
Date: 4/1/16

INTRODUCTION/OVERVIEW TRACT II

The Walton Lumber property was acquired by the Maryland Department of Natural Resources in 2015. The Walton Lumber property is being divided into two separate tracts for management purposes. Tract II is located on the north and south sides of Wilderness Road and bordered by Whirlwind Road to the south and the La Grande RV trailer park to the north. This Forest Management Plan will address the management activities for Tract II. Tract I is located adjacent to Salem State Forest off of Point Lookout Road directly across from Chestnut Hills subdivision.

This tract was previously owned by the Walton Lumber Company. This property will be managed by the Maryland Forest Service as a satellite tract of Salem State Forest. The forest on the property is comprised of 137 acres of mixed hardwood forest.

The terrain is flat to gently rolling with heavy clay soils typical of St. Mary's County.

The Wildlife Division in cooperation with the Maryland Forest Service will be establishing a public hunting program on the property. Hunting reservations are coordinated by the Wildlife Division at the Myrtle Grove office in Pisgah.

There are currently no invasive species present on the property.

Portions of this property were hard hit in 2010 by Hurricane Irene, and portions were salvaged by the former owner.

STAND DESCRIPTION AND RECOMMENDED PRACTICES

STAND NUMBER: 1

AREA ACRES: 70.8

DOMINANT OVERSTORY SPECIES: white oak, red oak, sweetgum, blackgum

DOMINANT UNDERSTORY SPECIES: American holly, sweetgum, American beech

TIMBER SIZE: sawtimber

AGE: even (51 years old)

STOCKING: overstocked (110%)

DESIRABLE TREES: 80% **UNDESIRABLE TREES**: 20%

SITE GROWTH POTENTIAL: good

SITE INDEX: Virginia pine (68)

SOIL: Bibb silt loam (Bm), Beltsville silt loam (B1B2)

RECOMMENDATIONS/PRACTICES:

This stand is comprised of sawtimber size white oak, red oak, sweetgum, blackgum and scattered Virginia pines. The tree density (or stocking) in this stand is high in relation to maintaining optimum growing space per tree. As trees in the stand continue to grow larger, growing space per tree will continue to decrease.

In this "overstocked" condition the stand will become less vigorous due to excessive competition for limited resources such as soil nutrients, water, and sunlight. In this overstocked condition a stand is vulnerable to insect and disease infestation as well as decline from drought.

The tree species distribution in this stand is as follows:

Red oak	14%
White oak	36%
Yellow poplar	13%
Sweetgum/Blackgum	14%
American beech	13%
Red maple	2%
Hickory	1%
Virginia pine	5%
Loblolly pine	2%
Total	100%

The current size class distribution in this stand is 67% saw timber (11.0 inches or greater in dbh [dbh = diameter at breast height - e.g. the tree diameter measured at 4.5 feet, approximately breast height]); 25% pole size (5.0 - 10.9 inches dbh); and 8% small tree (sapling to 4.9 inches dbh).

An increment boring was taken from a 15.1 inch DBH (diameter at breast height) white oak. It revealed that the tree was ninety one years old and has taken nineteen years to grow two inches in diameter.

Given the age of the trees in this stand and the overstocked stocking level, the prescription for this stand is to perform a commercial thinning utilizing the single tree selection. The commercial thinning should be applied to reduce the current stocking level in order to create additional growing space for the residual trees. The stand should not be reduced below 70 percent of the current stocking (leaving a residual basal area of 80 - 85 square feet per acre). This simply means removing approximately one third of the current stocking in the stand by selectively marking individual trees throughout the stand for removal. Following the initial thinning operation the top wood can be utilized as firewood. The commercial thinning should be completed by June 2021.

This stand contains two unnamed intermittent blue line streams running through it. A " blueline" stream is a stream that is significant enough to be mapped on a 7.5 minute topographic map. This legal designation will require the following in order to protect the water quality during a timber harvest:

(1) the delineation of a protective stream buffer (minimum width 50-feet, expanded 4-feet for each 1% of slope) for the stream;
(2) within the delineated stream buffer, only selective harvesting is permitted;
(3) before any harvesting is initiated within the stream buffer, a Custom Buffer Plan must be prepared by a Licensed Professional Forester to ensure the harvest is conducted according to all legal requirements.

A portion of this stand adjacent to Wilderness Run Road has been delineated as a non-tidal wetland delineated as non-tidal wetlands by the U.S. Fish and Wildlife Service on the Hollywood and Piney Point USFWS NWI (National Wetland Inventory) Map. The wetland is classified as PFO1A (Palustrine, Forested, Broad-leaved, Deciduous, Seasonally Flooded).

The Bibb silt loam and Beltsville silt loam soils present in this stand are classified as a hydric soil, a possible indicator of additional non-tidal wetland areas. A hydric soil is a soil that, in it's undrained condition, is saturated, flooded, or ponded long enough during the growing season to favor the growth and regeneration of hydrophytic vegetation.

Timber harvesting in the wetland areas and areas with hydric soils present must include the implementation of Best Management Practices (BMPs) in order to minimize impact on the hydrology of these soils.

BMPs are easily implemented conservation measures that control soil loss and minimize potentially adverse impacts during harvesting to protect water quality.

Best Management Practices are conservation measures that:

* Control soil loss
* Reduce water quality degradation
* Maintain an area as a nontidal wetland after harvesting
* Minimize any adverse impact to the chemical, physical or biological characteristics of nontidal wetlands.

The entire stand should be re-examined in 15 years (2031) to update the management recommendations.

STAND DESCRIPTION AND RECOMMENDED PRACTICES

STAND NUMBER: 2

AREA ACRES: 66.2

DOMINANT OVERSTORY SPECIES: loblolly pine, sweetgum

DOMINANT UNDERSTORY SPECIES: Annual grasses

TIMBER SIZE: sapling

AGE: even

STOCKING: fully stocked

DESIRABLE TREES: 90% **UNDESIRABLE TREES:** 10%

SITE GROWTH POTENTIAL: excellent

SITE INDEX: loblolly pine (78)

SOIL: Caroline silt loam (CaC2, CaD3, CaB2), Elkton silt loam (Ek), Woodstown sandy loam (WsB)

RECOMMENDATIONS/PRACTICES:

This stand is comprised of sapling size loblolly pine and sweetgum. The tree density (stocking) is adequate in relation to maintaining optimum growing space per tree.

This stand was hit hard by high winds and experienced severe windthrow during Hurricane Irene in 2010. This stand was salvage harvested by the former owner in 2014. The site received no site preparation and was reforested with loblolly pine on an 8' x 8' spacing (680 trees/acre). The prescription for this stand is to let it develop naturally over the next fifteen years.

The entire stand should be re-examined in 15 years (2029) to update the management recommendations.

NATURAL RESOURCE PROTECTION

GYPSY MOTH

The Gypsy Moth has been a major problem in the Northeastern U.S. since 1869. Over the years it has become a primary defoliator of hardwood trees in Maryland.

Several factors determine the likelihood of a woodlot being infested by the Gypsy Moth. The type of trees present is one factor. Oak are among the most preferred species, also favorable are Sweetgum, Blackgum, Dogwood, Hickory, Maple and Pine. Least preferred species include American Holly, American Sycamore, Ash, Black Locust and Yellow Poplar.

The condition of the woodlot is also important. Areas with considerable percentage of cull, damaged and deformed trees are highly susceptible. These conditions provide structural refuges which provide hiding places for larvae, pupae and eggs.

If a stand is attacked by Gypsy Moth, its vulnerability will determine the amount of mortality. Trees in stress conditions, (over crowded, over-mature, overtopped, damaged), are highly vulnerable.

Good forest management can reduce the susceptibility of the woodlot to attacks by Gypsy Moth. Thinning can be used to reduce the amount of structural refuges and the percentage of desirable food species present in the woodlot. Maintaining a healthy, vigorous forest is the best prevention in controlling susceptibility and reducing damage.

SOUTHERN PINE BARK BEETLE

Southern Pine Bark Beetle attacks live trees by boring through the bark where eggs are laid. Trees attacked by Pine Bark Beetle are girdled as the beetle constructs its egg galleries in the phloem layer of the bark.

General pine bark beetles attack trees that are dying or in a state of decline due to a variety of stress factors such as drought, mechanical injury, soil compaction in the root zone, smog, and root rot. Damage from the beetle can be identified by the red needles from the dying crown, reddish brown particles of boring dust a the base of the tree, pitch tubes in boring holes, and S-shaped galleries on the underside of the bark.

Prompt salvage of the infested trees is the cheapest and often most practical method of control. If the infested trees remain in the stand and even greater number of trees maybe destroyed by the next generation of beetles. Salvage helps to reduce loss until natural factors supplemented by forestry treatments such as thinning, improve the health and vigor of the stand.

FIRE

The tract is divided into two parts by Wilderness Road which is a county maintained road.

FOREST INTERIOR DWELLING BIRDS TIMBER HARVEST GUIDELINES FOR FIDS HABITAT

The forested areas on this tract contain Forest Interior Dwelling Bird habitat. Populations of many Forest Interior Dwelling Birds (FIDS) are declining in Maryland and throughout the eastern U.S. The conservation of this habitat is strongly encouraged by the MD. Department of Natural Resources. The following guidelines give highest priority and the greatest protection to the following habitats: riparian forests (including floodplain or bottomland forest), mature or over mature forest in coves and ravines, and overmature forests on upland areas not associated with coves or ravines.

1. Timber harvesting should not result in the creation of any new permanent forest openings. (eg. as a result of logging roads, landing areas, wildlife food plots, etc).

2. No timber harvesting should occur within the buffer of any perennial tidal or non-tidal stream as indicated on USGS 7.5 minute topographic maps.

3. Encourage the use of single tree selection with the retention of 70% or greater canopy closure in the following areas:
    a. Mature to overmature upland hardwood and mixed hardwood-pine forest.
    b. Within 150 feet of intermittent streams if high quality FIDS habitat is present.
    c. Forested coves and ravines containing high quality FIDS habitat.

4. Avoid timber harvesting between April 1-July 31, the breeding season for FIDS.

5. Encourage the retention of at least 8 snags per acre (each 8 inches in diameter or greater) in timber harvest areas. The largest snags possible should be selected for retention. Groups of snags should be favored over individual snags.

6. Encourage the retention of dead and downed woody debris on the forest floor. Slash should be left laying and not placed in windrows or piles. Park like conditions should be avoided.

7. Logging roads and trails:
    a. Woods roads should be kept to the minimum that will allow access for fire suppression and future management activities.
    b. Maintain forest canopy closure over the roads (eg. no daylighting)
    c. Road widths should be less than 15 feet.
    d. Avoid maintaining grassy roadbeds and berms.

e. If "7d" is unavoidable maintain at least 10 inches of grass height throughout the FIDS breeding season.
f. Where possible allow logging roads to succeed to native vegetation.

NATURAL HERITAGE

The term "Natural Heritage" is used to describe the plants, animals and natural ecosystems which make up the landscape of Maryland. Thus, Natural Heritage Stewardship is concerned with the preservation of the plants, animals and ecosystems of the state for the many benefits they provide, especially those determined to threatened, endangered, or in need of conservation. The DNR-Natural heritage Division maintains a database of the locations where sensitive species are known to exist. A search of this database revealed there are no threatened, or endangered species located on this property.

INVASIVE PLANT CONTROL

Invasive plants have not been documented on this tract. However, Japanese silt grass is mostly likely present where the landing was for the salvage harvest in stand number two. This tract should be monitored and if any are found they should be controlled with herbicides. Invasive plants share some important growth characteristics that allow them to grow out of control. Listed below are several of these traits:

1. spreading aggressively by runners or rhizomes
2. producing large numbers of seeds that survive to germinate
3. dispersing seeds away from the parent plant through various means such as wind, water, wildlife and people.

Invasive plants impact the environment by growing and spreading rapidly over a large area displacing native plants, including some that maybe rare species. Invasive plant control is not needed at this time on the property.

BOUNDARY LINE MAINTENANCE

The boundary lines on this property will be painted to DNR standards in 2011-2012. The boundary lines should be cut out and maintained annually to create visual breaks in the landscape for identification and easier access

MANAGEMENT PRACTICE SCHEDULE

Completion Date	Practice	Stand	Acres
June 2021	Commercial Thinning	1	70.8
Continuous	Monitor for Invasive Species	1-2	137.0
Continuous	Maintain Property Boundaries	1-2	137.0
Continuous	Maintain Roads and Trails	1-2	137.0
Continuous	Monitor for Insect And Disease Problems	1-2	137.0
March 2031	Re-examine to Update Management Recommendations	1-2	137.0

NON-TIDAL WETLANDS/ BEST MANAGEMENT PRACTICES

Non-tidal wetlands (wetlands not adjacent to tidal waters) are found all across the state. These wetlands include marshes, bogs, and swamps, and may include other areas that are only flooded or saturated for fairly short periods of time. Non-tidal wetlands are delineated on the ground by the presence of wetland hydrology, wetland soils, and wetland vegetation. Many of these wetlands are forested.

These wetland areas often provide important benefits such as water quality improvement, flood control, natural products for human use, forest products and aesthetic and recreational opportunities. They also provide habitat for a wide variety of plants and animals, many of which depend on wetlands for all or part of their life cycle.

Activities in non-tidal wetlands, such as excavation, filling, draining, or other activities which may change the water level will require a permit issued by the Maryland DNR - Water Resources Administration. Forestry practices do not require a non-tidal wetlands permit from the Department of Natural Resources if the land use remains as forestry. Forestry activities are planting, cultivating, thinning, harvesting or any other activity undertaken to use the forest resources or to improve their quality or productivity. Activities that change non-tidal wetlands to another land use, including but not limited to agriculture or development, are not forestry activities.

The non-tidal wetland regulations require that Best Management Practices (BMPs) to protect non-tidal wetlands be incorporated into the sediment and erosion control plan required for forest harvest operations. The sediment and erosion control plan must be prepared by a registered professional forester. These Best Management Practices or "BMPs", which describe how certain operations should be carried out, must be used to prevent or minimize any adverse impacts on water quality or the functional characteristics of the wetland.

Best Management Practices are conservation measures that:

* Control soil loss and sediment deposition in non-tidal wetlands
* Minimize water quality degradation caused by sediment
* Minimize adverse impacts to circulation patterns or flow of surface water or ground water
* Minimize any adverse impact to the chemical, physical or biological characteristics of non-tidal wetlands
* Prevent non-tidal wetlands from being changed to upland or any other area that no longer meets the non-tidal wetland definition

Examples of BMPs include:

* Designing stream crossings to have the shortest distance feasible
* Locating roads and log decks on upland areas to minimize adverse wetland impacts
* Harvesting with specialized equipment such as high flotation equipment when non-tidal wetland soils and hydrology have the potential to be adversely affected
* Using mats or similar temporary structures to reduce compaction or rutting
* Conduct forest harvest operations during dry seasons
* Follow natural contours of the land, whenever feasible