

FOREST STEWARDSHIP PLAN

for

Maryland Department of Natural Resources  
Tayloe Neck Tract  
Satellite Tract of Doncaster Demonstration Forest

Location

At the end of Bluff Point Road off of Tayloe Neck Road

MD Grid 388,699/83,317 NAD 83

Tax Map 70, Grid 6 Parcel 257, 308.0 acres

in

Charles County

on

270.3 acres woodland  
27.0 acres marshland  
10.7 acres open water  
308.0 total acres

Prepared by

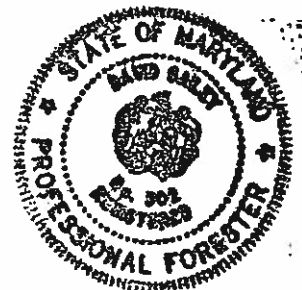
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## INTRODUCTION

The Tayloe Neck property was acquired by the Maryland Department of Natural Resources in 2003. The parcel is located at the end of Bluff Point Road in Charles County, Maryland. The land was previously owned by the Glatfelter Pulpwood company and primarily managed for Loblolly pine production. This property will be managed by the Maryland Forest Service as a satellite tract of the Doncaster Demonstration Forest. The forest on the property consists of approximately 120 acres of planted pine and 150 acres of mixed hardwoods.

The terrain is flat with heavy clay soils typical of Western Charles County. The Southeast portion of the property slopes gradually as you approach Little Creek.

The Wildlife Division in cooperation with the Forest Service has established a public hunting program on the property. A spring gobbler hunt in 2005 was the first organized hunt for the public. Hunting reservations are coordinated by the Wildlife Division at the Myrtle Grove office in Pisgah.

The Southwest boundary line has drainage ditches that were built over 100 years ago. In order to re-establish the natural drainage patterns of the watershed the ditches will be manipulated to create a less restricted flow of surface water. The adjacent landowners, The Nature Conservancy concur with this recommendation.

Japanese silt weed, an invasive species is present on the property. Control and eradication with herbicide treatments is recommended. Invasive plants impact the environment by growing and spreading rapidly over large areas, displacing native plants, including some rare species. Invasive plant control is recommended on this property to avoid monocultures of a single plant species, thus reducing the natural biological diversity of an area.

## STAND DESCRIPTION AND RECOMMENDED PRACTICES

STAND NUMBER: 1

AREA ACRES: 116.2

DOMINANT OVERSTORY SPECIES: Loblolly Pine

DOMINANT UNDERSTORY SPECIES: Sweetgum

TIMBER SIZE: Pole

AGE: Even (12 -15 years old)

STOCKING: Adequate to Overstocked

BASAL AREA: 135 square feet per acre

DESIRABLE TREES: 75 %     UNDESIRABLE TREES: 20 %

GROWTH POTENTIAL: Good

SITE INDEX: Loblolly Pine 75

DOMINANT SOIL TYPES: Othello and Mattapex fine sandy loam

### RECOMMENDATIONS/PRACTICES

This stand of pine was planted following a regeneration harvest fifteen years ago. The site was treated with Arsenal and burned to prepare the site for planting. The trees are planted at a rate of 780 trees per acre.

Pines sampled for growth estimates showed an increase of two inches in diameter every five years under current conditions. This stand should be left to grow another ten years at which time an inspection should be done to schedule a pulpwood thinning.

It is generally accepted that the first thinning should be delayed until revenue received from the trees removed will pay the cost of the operation, in order to eliminate a deficit timber sale. Hence, the first thinning is usually made when the trees reach pulpwood size, about 6 - 10 inches in diameter at breast height. The trees will normally be between 22 - 28 years old when they reach this size.

The result of any thinning operation should be to provide more growing space for the well formed, fast growing trees; while harvesting trees that are diseased, damaged or

poorly formed and those that are not anticipated to live until the next scheduled harvest.

In pine plantations a method known as a Modified Row Thinning should be initiated in which every third or fourth row is removed to provide access to the stand and intermediate rows are thinned by individual tree selection. The intermediate rows of pine that have an average total height of 55-65 feet at the time of thinning should be selectively thinned to a residual basal area of 80 square feet per acre.

This pine plantation should be managed for pulpwood and sawlog products. A second thinning for pulpwood and sawlogs should be initiated within seven to ten years after the initial thinning is complete.

## STAND DESCRIPTION AND RECOMMENDED PRACTICES

STAND NUMBERS: 2

AREA ACRES: 122.2

DOMINANT OVERSTORY SPECIES: Yellow Poplar, Sweetgum and Red Oak

DOMINANT UNDERSTORY: American Holly

TIMBER SIZE: Sawtimber & Pole

AGE: Uneven

STOCKING: Overstocked

BASAL AREA: 145 square feet per acre

DESIRABLE TREES: 77 %    UNDESIRABLE TREES: 23 %

GROWTH POTENTIAL: Good

SITE INDEX: Southern Red Oak 80

DOMINANT SOIL TYPES: Sassafras sandy loam, Mattapeake silt loam, Mattapex fine sandy loam and Fallsington sandy loam

### RECOMMENDATIONS/PRACTICES

This stand of mixed upland hardwood species occupies the southern half of the property. White Oak and Red Oak species occupy approximately 40% of the species composition in this stand, which includes Willow Oak and Chestnut Oak. Other associated species present include Yellow Poplar, Sweetgum, Blackgum, Hickory, Virginia Pine and Red Maple.

American Holly dominates a large majority of the understory with mixtures of Flowering Dogwood, Sweetgum and Red Maple regeneration present. Heavy concentrations of High Bush and Low Bush Blueberry and Mountain laurel are present in low areas with hydric soils. Natural oak regeneration is lacking.

The timber size is predominantly immature sawtimber, along with an occasional mature sawtimber size (greater than 24 inches at dbh) tree. Approximately 50 percent of the trees in this stand are in the sawtimber size class (dbh of 11.0 inches and greater

measured at breast height). Red oaks had a growth rate of two inches in diameter every eight years under current conditions, which is excellent for the species and site conditions.

Current growth rates are such that this stand should be allowed to grow another twelve years at which time a single tree selection harvest should be applied to remove mature trees, culls and undesirable species. The stand stocking should not be reduced below 70 percent of the current stocking (leaving a residual basal area of 90 – 100 square feet per acre). Caution should be taken to not make any large holes in the canopy because of possible adverse effects on quality of residual stems due to epicormic branching. These guidelines will also conserve FID habitat and decrease the regeneration of invasive exotic species in the understory. Following the initial thinning operation a firewood sale should be implemented in order to utilize the top wood.

This operation should be initiated on an area of approximately 50 acres in size. Implementing a thinning will improve the health and vigor of the stand and serve as a research area to monitor Neo-tropical Migrating Birds in a managed forest verses non-managed. A 150 foot no-cut buffer shall be maintained adjacent to the perennial streams in this stand for FID conservation.

Following the harvest the stand should be left to grow for 15 years, at which time the management recommendations should be updated.

## STAND DESCRIPTION AND RECOMMENDED PRACTICES

STAND NUMBER: 3

AREA ACRES: 5.6

DOMINANT OVERSTORY SPECIES: Loblolly Pine

DOMINANT UNDERSTORY SPECIES:

TIMBER SIZE: Sapling

AGE: Even (3 years old)

STOCKING: Adequate

BASAL AREA: N/A

DESIRABLE TREES: 95 %      UNDESIRABLE TREES: 5%

GROWTH POTENTIAL: Good

SITE INDEX: Loblolly Pine 75

DOMINANT SOIL TYPE: Othello

### RECOMMENDATIONS/PRACTICES

This stand of Loblolly Pine was originally planted fifteen years ago; however, after a wildfire in 2001 portions were replanted in 2002. The Wildlife Division has expressed an interest in creating food plots for upland game on the property. These areas would be easy to clear due to the early stage of stand development.

Food plots should be created within the next three years. Areas not cleared for wildlife food plots should be left to grow and thinned in conjunction with the second thinning recommended in stand number one.

## STAND DESCRIPTION AND RECOMMENDED PRACTICES

STAND NUMBER: 4

AREA ACRES: 25.3

DOMINANT OVERSTORY SPECIES: Willow Oak, Sweetgum and Red Maple

DOMINANT UNDERSTORY SPECIES: Spicebush and Musclewood

TIMBER SIZE: Sawtimber, Pole and Sapling

AGE: Uneven

STOCKING: Adequate

DESIRABLE TREES: 75%    UNDESIRABLE TREES: 25%

GROWTH POTENTIAL: Fair

SITE INDEX: Red Oak 69

DOMINANT SOIL TYPE: Bibb and Gravelly land

### RECOMMENDATIONS/PRACTICES

This stand represents riparian areas of the property encompassing tidal and non-tidal wetlands and perennial streams. The Bibb soils present in this stand are classified as hydric soils. A hydric soil is a soil that, in its undrained condition, is saturated, flooded, or ponded long enough during the growing season to favor the growth and regeneration of hydrophytic vegetation. Access to this stand with heavy equipment should be avoided in order to eliminate soil compaction and damage to the hydrology of the stream drainage area.

In order to protect the water quality of the Nanjemoy Creek watershed this stand should be maintained in its undisturbed condition as a forest buffer. The forest floor adjacent to the riparian areas remove sediments, nutrients and potentially harmful or toxic substances in runoff entering Little Creek.

Allow this stand to grow undisturbed another fifteen years to function as a forest buffer that will provide riparian wildlife habitat and filter overland run off. Re-examine the entire stand in fifteen years to update the management recommendations.



## STAND DESCRIPTION AND RECOMMENDED PRACTICES

STAND NUMBER: 5

AREA ACRES: 1.0

DOMINANT OVERSTORY SPECIES: Virginia Pine

DOMINANT UNDERSTORY SPECIES: American Holly

TIMBER SIZE: Pole

AGE: Even (35 years old)

STOCKING: Adequate

BASAL AREA: 120 square feet per acre

DESIRABLE TREES: 80%      UNDESIRABLE TREES: 20%

GROWTH POTENTIAL: Good

SITE INDEX: Virginia Pine 75

DOMINANT SOIL TYPES: Gravelly land, and Mattapex fine sandy loam

### RECOMMENDATIONS/PRACTICES

This small stand of Virginia Pine is typical of abandoned farm land in Southern Maryland. The Virginia Pine trees are stagnating in growth, increasing only two inches in diameter every twelve years under current conditions. Approximately 60% of the stand is comprised of pole size trees (5.0 - 10.9 inch dbh) and 20% being sawtimber size trees (11.0 and greater dbh).

Virginia Pine is a slow growing species that usually develops Red Heart Rot (*fomes pini*) that weakens the heartwood of the tree, increasing wind throwing and breakage of the main stem. Virginia pine also has a shallow root system that makes the species prone to wind throwing when exposed, thus eliminating thinning as an management option.

In order to utilize the sawtimber and pulpwood products in this stand prior to its economic demise a regeneration harvest should be initiated at the same time stand number one is thinned.

Following the harvest the site should be allowed to regenerate naturally.

## **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

Hydric Soils:

The Othello, Fallsington, Gravelly land and Bibb series soils are classified as hydric soils. A hydric soil is a soil that, in its undrained condition, is saturated, flooded, or ponded long enough during the growing season to favor the growth and regeneration of hydrophytic vegetation. Best management practices (BMPs) should be used when a timber harvest is initiated in these soils.

## 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. Infestation and mortality has occurred on Cedarville State Forest. A 20 acre salvage harvest was conducted in Compartment three in 1997. In the future the forest should participate in an Integrated Pest Management Program as needed to control Gypsy Moth out breaks.

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, Yellow Poplar.

The condition of the woodland is also important. Areas with a 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, (overcrowded, over-mature, overtopped, damaged), are highly vulnerable.

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

### SOUTHERN PINE BARK BEETLE

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

As a general rule, 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, compaction of soil in the root zone, smog, root rot, etc. Damage from the beetle can be identified by the red needles from the dying crown, reddish brown particles of boring dust at the base of the tree, pitch tubes in boring holes and S-shaped galleries on the inner side of the bark.

Prompt salvage of infested trees is the cheapest and often the most practical method of control. If infested trees remain in the stand an even greater number of trees may be destroyed by the next generation of beetles. Salvage will help reduce losses until

natural factors supplemented by forestry treatments, such as thinning, improve the health and vigor of trees.

## **FIRE**

The Tayloe Neck Tract has an established road system and several hiking trails that are accessible for fire suppression equipment by the Forest Service. The boundary lines are also fairly accessible for fire suppression activities. The continued maintenance of roads and fire lines is a timely and costly chore on the forest; however, access is essential for suppression of wildfires. A Fire Suppression Plan is being prepared for this tract in order to provide additional details for direct and indirect attack methods of fire suppression.

## **FOREST INTERIOR DWELLING BIRDS TIMBER HARVEST GUIDELINES FOR FIDS HABITAT**

The forested area on the project site contains Forest Interior Dwelling Bird habitat. Populations of many Forest Interior Dwelling Bird species (FIDS) are declining in Maryland and throughout the eastern United States. The conservation of this habitat is strongly encouraged by the Department of Natural Resources. The following guidelines give highest priority and the greatest protection to the following habitats: riparian forests (including floodplain or bottomland forests), mature to overmature forests in coves and ravines, and overmature forests in upland areas not associated with coves and ravines.

1. Timber harvesting should not result in the creation of any new permanent forest openings (e.g. 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 streams, as indicated on USGS 7.5 minute topographic maps.
3. Encourage the use of single-tree selection with the retention of 70% or greater forest canopy closure in the following areas:
  - a. Mature to overmature upland hardwood and mixed hardwood-pine forests
  - 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 most FIDS.
5. Encourage the retention of at least 8 snags per acre (each 8 inches dbh or greater) in timber harvest areas. The largest snags possible should be selected for retention. Groups of snags should be favored over scattered isolated snags. In clear cuts where insufficient densities of size classes of snags are present, live trees (e.g. such as trees with relatively little merchantable value) of a similar minimum size and density should

be frilled or girdled and left standing.

7. Encourage the retention of dead and downed woody debris on the forest floor. Slash should be left laying and not placed in windows or brush piles. Clean, park-like conditions should be avoided.

8. Regarding logging roads and trails:

- a. Woods road maintenance should be kept to the minimum that will allow access for fire suppression and future management activities.
- b. Maintain forest canopy closure over roads (i.e. do not daylight).
- c. Road widths should be less than 15 feet.
- d. Avoid maintaining grassy roadbeds and berms.
- e. If '12d' is unavoidable, maintain at least 10 inches of grass height throughout the FIDS breeding season (April 1-July 31).
- f. Where possible, allow logging roads to succeed to native forest vegetation.

## CHESAPEAKE BAY CRITICAL AREA

The Critical Area includes all land and waters within 1000 feet of the mean high water line of tidal waters, wetlands and tributary streams. The Charles County Forest Conservancy District Board must review and recommend approval of the all commercial harvesting greater than one acre within the Chesapeake Bay Critical Area.

## FOREST BUFFER MANAGEMENT

All land within 100 feet landward from mean high water line of tidal waters, tributary streams and tidal wetlands within the Critical Area represents the 100-foot Buffer Zone. With the presence of steep slopes (greater than 15 %) the buffer shall be expanded 4 feet for every percent of slope greater than 15 percent.

Forest Buffers provide several functions to the watershed. Listed below are several benefits a landowner may reap from Forest Buffers.

- (1) The developed forest floor will act as a sponge and provide for the removal of sediments, nutrients and potentially harmful or toxic substances in runoff entering the Bay and its tributaries;
- (2) Minimize the adverse effects of human activities on wetlands, shorelines, stream banks, tidal waters and aquatic resources;
- (3) Maintain an area of transitional habitat between aquatic and upland communities;
- (4) Maintain the natural environment of streams; and
- (5) Protect riparian wildlife habitat.

Approximately 200+/- acres of the property are within the Chesapeake Bay Critical Area. The Critical Area includes all land and waters within 1000 feet of the mean high water line of tidal waters, wetlands, and tributary streams.

The term "Natural Heritage" is used to describe the plants, animals, and natural ecosystems, which make up the landscapes of Maryland. Thus, Natural Heritage Stewardship is concerned with preserving the plants, animals, and ecosystem of the state for the many benefits they provide us, especially those determined to be threatened, endangered, or in need of conservation. The DNR-Natural Heritage Program maintains a database of the locations where sensitive species are known to occur. A search of this database indicates there are no threatened or endangered species on this property.

### INVASIVE PLANT CONTROL

Invasive plants have been documented on the property. Japanese stilt weed is present on the property and should be controlled with herbicides. Invasive plants share some important growth characteristics that allow them to grow out of control. Below are three similar traits of invasive plants:

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 large areas, displacing native plants, including some rare species. Invasive plant control is recommended on this property to avoid monocultures of a single plant species, thus reducing the natural biological diversity of an area.

### BOUNDARY LINE MAINTENANCE

The boundary lines on this tract have been painted to DNR standards in 2005. Boundary lines should also be cut out and cleared annually to create a visual break in the landscape for identification and easier access.

## FOREST MANAGEMENT PRACTICE SCHEDULE

<u>COMPLETION DATE</u>	<u>PRACTICE</u>	<u>STAND</u>	<u>ACRES</u>
2005	Boundary line marking	all	270.3
2005-2006	Invasive Plant Control	all	270.3
2015	Thinning	1	116.2
2015	Regeneration Harvest	5	1.0
2017	Single Tree Selection	2	50.0
2020	Re-examine to Update Management Recommendations	all	270.3
Continuous As Necessary	Boundary Line Maintenance	all	270.3
"	Fire Control	all	270.3
"	Monitor Insects & Disease	all	270.3
"	Road/Trail Maintenance	all	270.3
"	Invasive Species Control	all	270.3