



CHESAPEAKE FOREST
Fiscal Year 2007
ANNUAL WORK PLAN



Prepared: _____ Date _____
(Forest Manager)

Reviewed: _____ Date _____
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CHESAPEAKE FOREST ANNUAL WORK PLAN SUMMARY

This document summarizes the proposed activities that will occur on the Chesapeake Forest during the 2007 fiscal year. The fiscal year runs from July 1, 2006 to June 30, 2007. The following proposed activities are the results of a multi-agency effort. The multi-agency approach has ensured that all aspects of these lands have been addressed within the development of this plan.

Plan Activities

Network with Maryland DNR agencies:

- Wildlife & Heritage – Identify and develop restoration projects, report and map potential Ecological Significant Areas (ESA) as found during fieldwork, release programs for game and non-game species. Mapping will be done with Global Positioning Systems (GPS). Participates on the Inter-Disciplinary Team (ID Team) and assists in the development of a forest monitoring program.
- Natural Resource Police – Enforcement of natural resource laws on the forest.
- Resource Planning – Provides assistance in the development of plans, facilitates meetings with various management groups, develops Geographic Information System (GIS) maps for public review, and conducts deed research and boundary recovery. Also participates on the ID Team.
- Maryland Conservation Corps (MCC) – Assists in painting boundary lines, installing gates and trash removal.
- State Forest & Park Service – Participates on the ID Team.
- Chesapeake & Coastal Watershed Service – Develops watershed improvement projects, assists in the development of a forest monitoring programs and participates on the ID Team.

Network with other agencies:

- DNR Contract Manager – Assists the Forest Manager in the designs and implementation of management activities on the donated portion of the forest. Also participates on the ID Team.
- Sustainable Forestry Initiative – Provides third party forest certification by conducting annual audits.

- Forest Stewardship Council – Provides third party forest certification by conducting annual audits.
- The Conservation Fund – Provides guidance in the development of management activities on the forest.
- The Chesapeake Bay Foundation – Identifies sites for future water quality improvement projects.
- National Wild Turkey Federation – Establishes and maintains handicap-hunting opportunities within the forest and provides funding for habitat protection and restoration.
- US Fish & Wildlife Service – Assists in prescribed burns for Delmarva Fox Squirrel (DFS) habitat.
- AmeriCorps* National Civilian Community Corps – Assists in boundary line marking, gate installations, trash pick up, restoration projects, etc.

Network with Universities and Colleges:

- Salisbury University – Conducts species monitoring, a vegetative cross sectional study, and water quality improvement studies.
- Virginia Polytechnical Institute and State University – Conducts loblolly pine growth and yield studies.
- University of Georgia – Studies wood properties of loblolly pine growing on similar soils throughout the southeast region.

Maintenance:

- Forest roads will undergo general maintenance to maintain access for forest management activities (i.e. logging, prescribed burning and wildfire control). Interior roads within each complex will be brush hogged where possible by the MFS & the WHS. Many of the roads have grown shut and require special heavy equipment to remove the larger trees. The Chesapeake Forest has partnered with the Blackwater National Wildlife Refuge who has such equipment. Brushing of these roads will improve access for the public and help maintain firebreaks for communities at risk from wildfire.
- Forest boundary lines will continue to be converted from the old Chesapeake Corporation white square markings to the DNR yellow band markings. Signs will be placed along the boundary lines designating they type of public access to the property.
- Illegal trash dumps will continue to be removed off the forest as they are discovered. The average amount of trash removed from the forest each year has been 36 tons.

Recreation:

- Continue to explore additional Resource Based Recreational (RBR) opportunities on the forest. This may include hunting, horseback riding; water trails, hiking trails, bird watching opportunities, etc.
- Develop, improve and post public parking areas for the 30,000 acres designated for public use.
- Develop two new handicap hunting trails on the following tracts:
 1. Aughty Naughty Tract – W03/3534; Improve approximately 2.75 miles of established roads within public hunting area for handicap hunters' access. The forest roads need to be graded, five new gates need to be installed and brush along the road edges needs to be removed (i.e. daylighting). Area map included.
 2. Marshy Hope Creek - D12/4236; Improve approximately 1.63 miles of established roads within public hunting area for handicap hunter access. The forest roads need to be graded, five new gates need to be installed and brush along the road edges needs to be removed (i.e. daylighting). Area map included.
- Develop a bird watching trail/Area on the following tract:

Marshy Hope Creek – D12/4236; The MFS is proposing the development of a birding trail/area on the northern portion of Marshy Hope Complex located off North Tara Road. There is approximately 1.47 miles of existing trail that would need to be improved for foot traffic only. This trail/area would be established in partnership with the Dorchester County Tourism (Natalie Chabot, Tourism Director). Trail construction and maintenance will include removing brush along the trail, installing trail markers and signs, and building a parking area capable of holding 3-4 cars. Area map included.
- Continue to develop the Tyler Nature/Demonstration Trail

Tyler Demonstration Area – W07/3535&3561; The trail presently has approximately four miles of hiking trails, (nature trail - one mile), informational kiosk, picnic area, and parking area. Before June 8, 2005, new trail signage, including nature trail stops, will be added to the trail system. A brochure for the entire area is in the draft stage and planned for final completion before September 1, 2005. Upon completion of the trail signage and brochure, the Chesapeake Forest's Resource Specialist will begin planning educational tours of the tract.

Special Projects:

- Update and maintain forest information in a GIS database, which will result in a new updated forest wide field map.
- Maintain dual forest certification from the Forest Stewardship Council (FSC) and the Sustainable Forest Initiative (SFI).
- Conduct information and educational opportunities on the forest.
- Continue the effort to inventory and protect historic sites (i.e. cemeteries, old home sites, Native American Indian sites) using GPS and GIS technology.
- Continue the partnership with the Maryland Forest Association, Master Loggers Program in providing training sites for Advanced Best Management Practices workshops.

Silvicultural Activity Overview

Table 2 summarizes the proposed silvicultural activities for the 2007 annual work plan on approximately 4,800 acres (8%) of the CF.

Table 2. 2007 Silvicultural Activity Overview.

Activity	Acres
1. Planting	35
2. Pre-commercial Thinning	434
3. 1 st Commercial Thinning	2,116
4. 2 nd Commercial Thinning	526
5. Selection Harvest	6
6. Shelterwood Harvest	123
7. Seed Tree Harvest	15
8. Final Harvest	629
9. Aerial spray	99
10. Prescribed Fire	817
Total acres affected*	4,800

* Total acres affected are not the sum of all acres to be treated since some acres are scheduled for multiple activities (e.g. site preparation, planting and grass control or spray-fertilize). Efforts to promote natural regeneration should also reduce the acres affected. In addition, several tracts will have significant buffers and variable retention areas added, which will also reduce the harvest acreage accordingly. The current Geographic Information System (GIS) database is not accurate enough to give a precise acreage. However, the system will be continually updated by using Global Positioning Systems (GPS) to map new stand boundaries as stand prescriptions as they are carried out in the field.

Adaptive Management

It is the intention of the Maryland Forest Service to carry out each prescription within this Annual Work Plan (AWP) as described. However, in keeping with the spirit of the Adaptive Management approach within the Sustainable Forest Management Plan (SFMP) and the Forest Stewardship Council's (FSC) Principal 4.1, it may become necessary to slightly alter the prescription in order to maintain local economies. Any Adaptive Management conducted will be done at the discretion of the Forest Manager in consult with the ID Team where appropriate.

The following is a list of definitions of proposed management activities that will occur on the Chesapeake Forest.

Reforestation – Reforestation reestablishes forest cover either naturally or artificially (hand planting), and is usually accompanied by some kind of site preparation during the same fiscal year. The nature of the site preparation will be determined by field examination. It is almost always followed, in the same fiscal year, with grass control in the form of chemicals (hand-applied by ground crews). Site conditions will dictate application rates, etc., in each case.

Pre-Commercial Thinning – Pre-commercial thinning is the removal of trees to reduce over crowded conditions within a stand. This type of thinning concentrates growth on more desirable trees while improving the health of the stand. This treatment is usually done on stands 5 to 10 years of age. The number of trees retained will depend on growth, tree species present, and site productivity.

First Commercial Thinning – This will occur on plantations at age 12-20 years old to facilitate forest health and promote development of larger trees over a shorter period of time. This is accomplished in plantations by removing every 5th row of trees and selectively thinning between rows. In naturally regenerated stands, thinning corridors will be established every 50 feet and the stand will be selectively thinned along both sides of the corridor. Approximately 30-35% of the total stand volume will be removed in this process.

Second Commercial Thinning - Usually performed on stands 20-28 years old. The objective is to lengthen the rotation age of the stand and produce larger trees. In some cases, this technique is used to improve habitat for the Delmarva Fox Squirrel (DFS) and Forest Interior Dwelling Species (FIDS). Approximately 30-35% of the total stand volume will be removed in this process.

Selection Harvest – This includes the removal of single trees and groups of trees within a given stand. This method will be used to distribute age classes and to adjust species composition within a given stand (i.e. riparian buffers, ESA's, DFS & FID areas).

Shelterwood Harvest – The shelterwood method involves the gradual removal of the entire stand in a series of partial cuttings that extend over a fraction of the rotation (Smith 1986). The number of trees retained during the first stage of the harvest depends on the average tree size (diameter at breast height) on the site. As with seed tree regeneration, the shelterwood method works best when overstory trees are more than 30 years old and in their prime period of seed production potential (Schultz 1997).

Seed Tree Harvest – This type of harvest is designed to regenerate pine on the site by leaving 12 to 14 healthy dominant trees per acre as a seed source. The seed trees are typically left on the site for another rotation. The seed tree method regenerates loblolly pine effectively and inexpensively in the Coastal Plain, where seed crops are consistently heavy (Schultz 1997).

Final Harvest (clear cut) – The removal of the entire stand in one cutting, reproduction obtained artificially, or by natural seeding from adjacent stands, or from trees cut in the clearing operation (Wenger 1984). Coarse woody debris (slash/tree tops) are left evenly across the site to decompose. Clear cuts are prescribed to help regulate the forest growth over the entire forest, ensuring a healthy and vigorous forest condition. Clear cuts of young loblolly pine stands are done to balance the age class distribution on the forest. Currently, 50% of the forest is 18 years of age or younger. Clear cuts are also used to regenerate mixed natural stands within ESA's, DFS & Core FIDS areas. If adequate natural regeneration is not obtained within 3 years of the clear cut, hand planting of the site is typically required (not required for certain restoration projects, such as bay restoration).

Aerial Release Spraying - An aerial spray of herbicide is used to reduce undesirable hardwood species (i.e. sweet gum & red maple) within the stand. In many cases, a reduced rate (well below the manufacturer's recommendation) is used. A reduced rate has been used on the CF successfully to kill the undesirable species while maintaining the desirable ones (yellow poplar & oaks). All forms of aerial spraying are based on precision GPS mapping and accompanied by on-board flight GPS controls. GPS-generated maps show each pass of the aircraft and are provided by the contractor to demonstrate precision application. Aerial applications are not allowed over riparian buffers or wetland areas on the forest.

Prescribed Fire – Prescribed fires are set deliberately, under proper supervision and weather conditions, to achieve a specific management goal such as enhancing wildlife habitat, encouraging fire-dependent plant species, reducing fuel loads that feed wildfires, and preparing sites for planting.

Riparian Buffer Zone Establishment – Riparian buffer zones are vegetated areas adjacent to or influenced by a perennial or intermittent body of water. These buffers are established and managed to protect aquatic, wetland, shoreline, and/or terrestrial environments. Boundaries of riparian buffer zones will be marked, surveyed (GPS) and mapped (GIS). Selective harvesting and/or thinnings may occur in these areas to encourage a mixed hardwood-pine composition.

Literature Cited

Schulz, Robert P. 1997. The Ecology and Culture of Loblolly Pine, Loblolly Pine, U.S. Gov. Printing Office, Washington, D.C. 5-13, 5-14 pp.

Smith, David M. 1986. The Practice of Silviculture. Wiley, New York. 403 pp.

Wenger, Karl F. 1984, Forestry Handbook, For the Society of American Foresters, Wiley, New York. 418 pp.

**Locations & Descriptions
Of
Silvicultural Activities**

Description of 2007 Activities – Dorchester County

Complex D01-3

Arthur's Seat Tract (4237):

A seed tree cut is proposed for stand 2 (15 acres). This stand is a 75-year old mixed hardwood pine stand. Dominant and co-dominant loblolly pine trees and oaks will be selected as the residual seed trees. A prescribed burn may be used after the harvest to control the undesirable hardwood competition and prepare the site for pine regeneration. Natural regeneration requires 3 – 6 years to occur adequately. If adequate natural regeneration does not occur, hand planting will be used to reinforce the pine component of the stand.

Complex D12-3

Osborne Tract (4233):

A first thinning is proposed for stand 4 (17 acres). This loblolly plantation was established in 1971 and never had a first thinning.

DeWolfe Tract (4236):

A clear cut is proposed for stand 2 (20 acres) on the west side of N. Tara road. This stand is a 34-year old loblolly pine stand located within an ESA. This large ESA supports 16 species tracked by the Natural Heritage Program (3 endangered, one threatened, one in need of conservation, 7 state rare). Due to the location of stand 2 within the Marshyhope Sand Ridge Complex ESA, it should be clear cut with no retention of loblolly pine. After harvest this stand should be converted to a more native oak/hickory/pine forest. This will be accomplished through natural regeneration and prescribed fire.

Complex 13-3

Rhodesdale Tract (4219):

A first thinning is proposed for stand 6. Stand 6 is a 37-year old loblolly pine plantation that has never been thinned. Approximately 32 acres will be thinned.

A 40-acre strip clear cut is proposed for stand 1 (beginning directly across from stand 6). Stand 1 is a 37-year old loblolly pine plantation that is 101 acres in size. This prescription is an attempt to reduce the 37-year old loblolly pine (based on the age class distribution of plantations on the forest) and to experiment with natural regeneration techniques. The distribution across the forest reveals an excess of this particular age class. A strip clear cut within stand 1 should ensure natural regeneration through seeding from the adjacent stand. However, hand planting of loblolly pine will occur if natural regeneration fails.

Brushing of the road system will also be done on this complex as many of the roads have become impassable. Brushing of the road system will help to maintain access and create firebreaks.

Marine Tract (4204):

A shelterwood harvest is proposed for stand 1. Stand 1 is adjacent to Rhodesdale Complex D13-S3/4219 (described above) and is 123 acres in size. Stand 1 is a 37-year old loblolly pine plantation that was last thinned in 1994. This shelterwood harvest is designed to reduce the amount of 37-year old loblolly pine plantations on the forest and to experiment with natural regeneration methods. Chemical control of Phragmites will occur along the power line ROW prior to the shelterwood operation. Only the existing road, which crosses the power line, may be used for access. Heavy equipment will be kept out of the power line during the shelterwood operation.

A prescribe burn is also proposed for stand 1 after the shelterwood harvest is complete. The purpose of this prescription is to prepare the site for natural regeneration by eliminating the undesirable hardwood competition.

Complex D21-3

Bell Estate Tract (4256) & LeCompte Cont. (4260):

A first thinning is proposed within stands 1 & 5. Stands 1 & 5 are 15-year-old loblolly pine plantations that total 394 acres. The Natural Heritage Service will be consulted when setting up the thinning operation near the Delmarva Bays located within this complex.

Complex D25-3

Hoernicke Tract (4242):

A prescribe burn is proposed in stand 5 (85 acres) along Vienna road. This prescribed burn will reduce the undesirable hardwood competition and reduce the fuel load within the stand.

A first thinning is proposed in stands 2 & 3 (71.7 acres) on the south side of the complex. Stand 2 was planted in 1988 and stand 3 was planted in 1982.

Descriptions of 2006 Activities – Wicomico County

Complex W03-2

Aughty Naughty Tract (#3534)

A first thinning is proposed for stand 12 (168.9 acres), a loblolly pine plantation established in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft./acre.

A second thinning is proposed for stand 11 (18.9 acres), a loblolly pine plantation established in 1983 and thinned the first time in 1999. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

Phillips Farewell Tract (#3564)

A proposed second thinning for stand 3 (19.3 acres), a loblolly pine plantation established in 1985 and thinned the first time in 1999. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

Complex W05-3

Hodgson Tract (3576):

An aerial spray is proposed in stand 4 (11 acres) to reduce the sweet gum and red maple component within the stand. Stand 4 is a 7-year old loblolly pine plantation.

A second thinning is proposed for stand 3 (44 acres). Stand 3 is a loblolly pine plantation that was established in 1976 and thinned in 1996.

A selective thinning is proposed for stand 2 (6 acres). Stand 2 is a hardwood pine stand that was last harvest in 1947. Undesirable hardwood species and pine species with poor form will be selected for removal.

Wheatley Tract (7111):

An aerial spray is proposed for stand 3 (5 acres) to reduce the sweet gum and red maple component within the stand. Stand 3 is a 7-year old loblolly pine plantation.

Complex W07-3

Ventor (3561) & Lathrop Tract (3535):

A prescribed burn is proposed for the entire complex (455 acres). This prescribe burn will be done in stages throughout numerous years. This prescribe burn is designed to maintain an open understory, to reduce competition from undesirable species, and to reduce the fuel load within the stand. It is also proposed that this stand be burned every 2-3 years to maintain the desired outcomes mentioned.

Complex W08-2

Walker Tract (#7149)

A first thinning is proposed for stand 1 (35.1 acres), a loblolly pine plantation established in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Complex W14-2

Freaney Tract (#3532)

A first thinning is proposed for stand 1 (20 acres), a loblolly pine plantation established in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Complex W17-2

Pollitt Farm Tract (#3541)

A clear cut is proposed for a portion of stand 2 (29.9 acres), a loblolly pine plantation established in 1972, thinned a first time in 1994, released and fertilized in 1995 & 1996 then thinned a second time in 2000.

A clear cut is proposed for a portion of stand 3 (12 acres), a loblolly pine plantation established in 1973, thinned a first time in 1994, released and fertilized in 1995 & 1996 then thinned a second time in 2000.

A clear cut is proposed for stand 1 (4.9 acres), a loblolly pine plantation established in 1970, thinned a first time in 1994, released and fertilized in 1995 & 1996 then thinned a second time in 2000.

This clear cut only includes 46.8 acres of the 275 contiguous acres of plantations in this complex that were treated for growth enhancement (Mid-rotation release and fertilization) under the previous ownership. Included in this harvest area are habitat retention areas that are for the most part hardwood inclusions in these pine plantations.

Complex W21-3

Louis Horner Tract (7155):

A first thinning is proposed for stand 5 (35 acres). Stand 5 is a loblolly pine plantation that was established in 1989.

Horner No.2 Tract (7256):

A first thinning is proposed for stand 5 (37 acres). Stand 5 is a loblolly pine plantation that was established in 1989.

A first thinning is proposed for stands 1 & 2 (50.8 acres). Both stands are loblolly pine plantations. Stand 1 was established in 1970 and stand 2 was established in 1990.

The thinning activities within this complex are within the 0.25-mile protection zone for a Bald Eagle nest. Proper protocol will be followed for operations within the eagles nest protection zones.

Complex W22-2

Dashiell Tract (#3582)

A first thinning is proposed for stand 2 (126.5 acres), a loblolly pine plantation established in 1988. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Wilson Tract (#3587)

A first thinning is proposed for stand 4(110 acres), a loblolly pine plantation established in 1988. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Complex W23-2

Layfield Tract (#7115)

A pre-commercial thinning is proposed for stand 2 (96.8 acres) a naturally regenerated pine and hardwood stand. The pre-commercial thinning will be confined to the areas of heavy loblolly pine regeneration, but this will not include the entire area. There was a considerable amount of small hardwood left in some areas when harvested during the previous ownership. Upon completion of pre-commercial thinning, GPS map to create a new stand map delineating the pine and hardwood areas.

Hillyer Tract (#7119)

A first thinning is proposed for stand 1 (27.4 acres), a loblolly pine plantation established in 1987. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Austin Tract (#7107)

A second thinning is proposed for stand 4 (21 acres), a loblolly pine plantation established in 1982 and thinned the first time in 1998. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

A first thinning is proposed for stand 10 (44.9 acres), a loblolly pine plantation established in 1989. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

A first thinning is proposed for stand 13 (41.3 acres), a loblolly pine plantation established in 1984. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Greenhill Complex (W23)

This complex has a growing population of *Polygonum perfoliatum* (mile-a-

minute). The Chesapeake Forest manager will aggressively work to control the Polygonum throughout the tract, including the windrows.

Complex W30-3

Fair Meadows Tract (3512):

An aerial spray is proposed in stand 1 (36 acres). Stand 1 is a loblolly pine plantation that was established in 1988. This aerial spray is needed to remove the pole size sweet gum within the stand that is competing with the pine.

Complex W31-3

Lovella Jones Tract (3548):

A small (2.9 acres) replanting is proposed along stand 1 on the west boundary of the tract. This replanting is designed to reclaim the site, which has been encroached upon by adjacent landowners with their yards. The tract boundary lines will be repainted in conjunction with this replanting effort.

Complex W33-2

Phillips Tract (#7110)

A first thinning is proposed for stand 1 (63.1 acres), a loblolly pine plantation established in 1988. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Complex W35-2

Messick Tract (#3531)

A clear cut is proposed for stand 1 (43.2 acres), a loblolly pine plantation established in 1969 that was thinned a first time in 1991 and a second time in 1995. A roadside buffer will be left as well as a habitat retention area yet to be delineated. There is an ESA on the Stephen tract just east of this area, consideration should be given to creating a retention area that would connect to this ESA.

Complex W36-2

Willie Tract (#3513)

A first thinning is proposed for stand 2 (31 acres), a loblolly pine plantation established in 1991. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre. A buffer will be left along the tax ditch that bisects the tract.

Complex W39-2

Dr. Dick Tract (#3540)

A second thinning is proposed for stand 4 (34.1 acres), a loblolly pine plantation established in 1972 and thinned the first time in 1998. This stand should be thinned to a

residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

Complex W46-3

Adkins-Davis #2 Tract (7123):

A pre-commercial thinning is proposed for stand 3 (38 acres) adjacent to the power line. Stand 3 is a young loblolly pine plantation. The stand will be thinned to 10'X10' spacing. Heavier thinning and/or a 25 to 50 foot wide strip clear cut may occur adjacent to the power line open space to facilitate the natural seeding of rare plants into the pine stand. The existing access road will be the only road used for access to the stand and will not be used as a staging area.

Complex W49-2

Miller Tract (#3520)

A first thinning is proposed for stand 1 (22.3 acres), a loblolly pine plantation established in 1991. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Complex W55-2

Theodore Tract (#3523)

A first thinning is proposed for stand 1 (38.1 acres), a loblolly pine plantation established in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre. A small no harvest buffer will be left along the tax ditch that bisects the tract.

Descriptions of 2006 Activities – Worcester County

Complex WR01-3

Timmons Tract (3731):

A prescribed burn is proposed for stand 7 (38 acres) on the west side of the tract. The prescribed burn is designed to reduce the competition with undesirable species, create an open understory and to reduce the fuel levels within the stand.

Complex WR10-3

Gordy Tract (3743):

A pre-commercial thinning is proposed for stand 8 (83 acres). Stand 8 is a young loblolly pine plantation. The stand will be thinned to 10'X10' spacing. Heavier thinning and/or a 25 to 50 foot wide strip clear cut may occur adjacent to the power line open space to facilitate the natural seeding of rare plants into the pine stand.

A 10.6 acre prescribed burn is proposed for stand 3 on the west side of Mt. Olive Church Road. Stand 3 is a loblolly pine plantation that was established in 1975. This small burn is designed to evaluate the 30-year old stands response to an Rx burn. The rest of stand 3 to the east of Mt. Olive Church Road will be used as a control in this experiment. Care shall be exercised during fire line construction to avoid line placement within the power line right-of-way.

Complex WR12-3

Purnell Tract (3742):

A pre-commercial thinning is proposed for stand 8 (45 acres) adjacent to the power line, which bisects the tract. Stand 8 is a loblolly pine plantation that was established in 1997. The stand will be thinned to 10'X10' spacing. Heavier thinning and/or a 25 to 50 foot wide strip clear cut may occur adjacent to the power line open space to facilitate the natural seeding of rare plants into the pine stand.

Complex WR17-2

Livingston Tract (#3710)

A clear cut is proposed for a portion of stand 1 (5.6 acres) and stand 4 (30.5 acres), these are loblolly plantations that were established in 1970, thinned once in 1995, then released and fertilized in 1997 & 1998. A Habitat Retention Area has been planned along the tax ditch and associated buffer. Regeneration will be evaluated two years post harvest for adequate natural regeneration.

Complex WR19-3

Duncan Tract (3702):

A pre-commercial thinning is proposed for stand 1 (107 acres). Stand 1 is a 7-year old loblolly pine plantation. The stand will be thinned to 10'X10' spacing. Heavier thinning and/or a 25 to 50 foot wide strip clear cut may occur adjacent to the power line open space to facilitate the natural seeding of rare plants into the pine stand.

Complex WR21-3

Bethards Tract (3730):

A pre-commercial thinning is proposed for stand 1 (22.5 acres). Stand 1 is a 6-year old loblolly pine plantation. Healthy oaks with good form will be favored over pine during the thinning process within this DFS tract.

Complex WR25-3

Tankard Farm Tract (3704):

A clear cut is proposed for stand 5. Stand 5 is a 20-acre 15-year old loblolly pine plantation. The purpose of this harvest is to help balance the age classes across the entire forest. The 15-year old loblolly pine age class currently dominates the entire forest landscape. This harvest will help to balance the age distribution. This stand is surrounded by mature (38-year old) loblolly pine stands that should help to ensure natural regeneration. A buffer will be left along Whitesburg road for aesthetic purposes.

A clear cut is proposed within stand 3. Stand 3 is a 39-year-old loblolly pine plantation that is 268 acres in size. Two 40-acre clear cuts are proposed within stand 3 with the intent that both harvest areas will naturally regenerate by seeding from the adjacent mature stand. Non-geometric boundaries will be used for each of the harvest sites while incorporating the retention of snags and legacy trees where they occur. The purpose of this harvest is to create diversity among the age classes on this tract to reduce the 39-year old age component across the entire forest and to experiment with natural regeneration techniques. A prescribed burn may be used to control undesirable hardwood competition after the harvest operation. If natural regeneration is unsuccessful, hand planting to reinforce the pine component will be done.

Complex WR28-3

ABE Hamond Tract (3750):

A clear cut is proposed for a portion of stand 2. Stand 2 is a 15-year old loblolly pine plantation that is 129 acres in size. Riparian stream buffers will be increased to 300' within this tract and loblolly pine within these buffers will be thinned to 70/80 sq. ft. of basal area. Buffer thinning will be done to encourage/promote mast producing hardwoods. This final harvest will include the retention of legacy trees, snags and wildlife corridors where appropriate. The total harvested area should not exceed 80 acres.

Complex WR25-3

Chatham Tract (3745):

An aerial spray is proposed for stand 3 (47 acres). Stand 3 is a natural loblolly pine stand that is competing with sweet gum and red maple. The aerial spray is designed to release the pine and facilitate rapid growth of the stand.

Complex WR31-2

Blank Tract (# 3780)

A first thinning is proposed for stand 1 (37 acres), a loblolly pine plantation established in 1988. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

A first thinning is proposed for stand 2 (27.4 acres), a loblolly pine plantation established in 1982. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

Complex WR35-2

Hancock Tract (#3757)

A first thinning is proposed for stand 5 (32 acres), a loblolly pine plantation established in 1987. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

A first thinning is proposed for stand 3 (5 acres), a naturally regenerated loblolly pine stand established in 1987. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

NOTE: The line appears to be marked incorrectly on the NE line of stand 3. It is marked along the ditch, but the survey indicates otherwise. Need to correct before harvest.

Complex WR39-2

W.T. Byrd Tract (#3717)

A prescribed fire is proposed for all stands on the east side of ditch, consisting of stands 2, 4 and 7 & 8 a total of 43.2 acres. Most of this area was select cut in the spring of 2004. The harvest was a combination of a second thinning and small group selection areas. There were also some areas not harvested at all. The intent of this prescribed fire is to encourage a diversity of regeneration in the understory and small openings.

Complex WR40-2

Dunn Swamp Tract (#3716)

A clear cut is proposed for stand 9 (31.9 acres), a loblolly pine plantation established in 1970 and thinned once in 1998.

NOTE: The line on the North side of the block (stand 9) on New Bridge road has been painted incorrectly. This line should go to the edge of the field, but is currently marked along the first thinning corridor within the stand.

A first thinning is proposed for stand 8 (111.8 acres), a loblolly pine plantation established in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre. There is a 50 foot, no harvest buffer along the ditch (Little Mill Creek) on the north side of this harvest area.

A first thinning is proposed for stand 17 (13.6 acres), a loblolly plantation established in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

A first thinning is proposed for stand 18 (20.7 acres), which is a loblolly pine stand established by broadcast seeding in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft/acre.

A second thinning is proposed for stand 5 (46.7 acres), a loblolly pine plantation thinned the first time in 2000. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

A second thinning is proposed for stand 13 (12.8 acres), a loblolly pine plantation thinned the first time in 2000. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees. A 50 foot no harvest buffer will be left along Little Mill Creek on the north side of this stand. The next 100 feet will be thinned heavier and favor hardwoods where present, with the long term goal of creating a mixed pine/hardwood stand in this buffer area.

Site preparation and reforestation is proposed for stand 12 (32.2 acres). This is a stand that will be clear cut in the summer of 2005. Inspect first for natural regeneration. If not present, consider site preparation (burning) or straight planting options. Consider a herbicide release to control undesirable vegetation if present.

Description of 2006 Activities – Somerset County

Complex S01-2

Taylor # 3 Tract (#4810)

A first thinning is proposed for stand 3 (36.9 Acres), a loblolly pine plantation established in 1991. This stand will be thinned to a residual basal area of approximately 70 sq. ft./acre.

Eden Tract (#4832)

A first thinning is proposed for stand 6 (42.4 Acres) a loblolly pine plantation established in 1987. This stand will be thinned to a residual basal area of approximately 70 sq. ft./acre.

Austin Bounds Tract (#5466)

A first thinning is proposed for stand 1 (26.1 acres), a natural loblolly pine stand established in 1991. This stand will be thinned to a residual basal area of approximately 70 sq. ft./acre.

NOTE: All three of these stands fall within ¼ mile to 1 mile radius of a bald eagle's nest as shown on the tract map. Seasonal restrictions should be adhered to and all of these stands should be scheduled for harvest in the summer or fall.

Complex S02-2

Kemp Tract (#4859)

A first thinning is proposed for stand 3 (113.1 acres), which is a loblolly pine plantation established in 1989. Heavier thinning may occur within 50 feet for the power line to facilitate the natural seeding of rare plants into the forest stand.

Barkley Branch located on the northern boundary of this stand will be protected by a 300 foot buffer. No harvesting will occur in the first 50 feet. The balance of the buffer should be thinned to a lower basal area (approximately 50 sq. ft. acre), favoring hardwoods wherever possible in an effort to create, over time, a mixed pine/hardwood buffer.

This area was assigned an ESA designation during field inspections for the 2004 work plan (Eden Swamp & Power line) where 5 species of state threatened plants and one state endangered/globally rare plant were found. These were found primarily in and around the power line. The access road crosses the power line in one place which will be used. Otherwise skidding, decking, truck turn-around, etc. in the power line are prohibited. * ***Request the presence of Heritage personnel at the pre-harvest conference with the logging contractor as thinning prescriptions immediately adjacent to the power line may need to be revised***

A prescribed burn is proposed for stand 3 (29.8 acres), which has recently been clear cut. A reforestation evaluation of stand 3 (29.8 acres) will occur once the MFS receives the ESA Restoration and Management documents due in December 2005 by the Natural Heritage program.

Complex S11-2

Pryor Tract (#4803)

A clear cut is proposed for a portion of Stand 1 (44 acres) a loblolly pine plantation established in 1969. As a stand in Chesapeake Forest Products Company's accelerated growth program, this stand had been thinned a first time in 1994; released and fertilized in 1997/1998; thinned a second time in 2001 leaving only the final crop trees. A roadside visual buffer should be left as shown on the tract map. In an effort to keep clear cut sizes to FSC limits and buffer the large tax ditch, home of a downstream ESA, a significant portion of this stand along the northwest boundary will be left during this harvest.

Baldy Pusey Tract (#4820)

A clear cut is proposed for a portion of Stand 1 (45.6 acres) a loblolly pine plantation established in 1971. This plantation, similar to Pryor tract, had been thinned a first time in 1994 and a second time in 2001, though this stand had not been released and fertilized. A visual roadside buffer will be left between the old power line and College Backbone Road.

A portion of this stand was part of a Virginia Tech growth and yield study. The last measurements were taken in 2003. Call Ralph Amateis at VT (540-231-7263) before the final harvest begins. There may be some additional data we could give him by separating the volume from the research areas. This was a thinning study where areas were thinned initially to different basal areas.

Peters Tract (#4854)

Second thinnings are proposed for stand 7 (132 acres) a loblolly pine plantation established in 1983, stand 8 (48 acres) a loblolly pine plantation established in 1982, and stand 9 (38 acres) a loblolly pine plantation established in 1984. All stands should be thinned to residual basal area of approximately 80+, leaving only the best trees as the final crop trees.

Portions of stands 7 & 8 adjoin a large tax ditch. A fifty foot (from top of bank) no-cut buffer (for water quality buffer purposes) should be retained adjacent to the water body. A second thinning will occur in the rest of the stand. In the 300 foot buffer (except first fifty feet) a heavier thinning similar to fox squirrel prescriptions will be followed. The operator should be clearly instructed to stay off of the road like area directly adjacent to the tax ditch.

Complex S11-2

McAllen Tract (#4826)

A first thinning is proposed for stand 2 (60 acres), a loblolly pine plantation established in 1989. This stand will be thinned to a residual basal area of approximately 70 sq. ft./acre.

Austin Tract (#4830)

A first thinning is proposed for stand 1 (33 acres), a loblolly pine plantation established in 1989. This stand will be thinned to a residual basal are of approximately 70 sq. ft./acre.

McAllen #2 Tract (#4881)

A first thinning is proposed for stand 1 (32 acres), a loblolly pine plantation established in 1989. This stand will be thinned to a residual basal area of approximately 70 sq. ft./acre.

NOTE: There are some rare plant communities along the power line and railroad right of way along route 13. The MFS will request the presence of Heritage personnel at the pre-harvest conference with logger as thinning prescriptions immediately adjacent to these rights of way may need to be revised. Heavy equipment will not be permitted within the power line right-of-way.

Complex S16-2

Howard Price Tract (#4829)

This clear cut area, Stand 1 (36 acres) will be sold and harvested during the summer of 2005. There is some advanced pine regeneration in the understory here, though much of it will be damaged during the timber harvest. Evaluate for acceptable levels of natural regeneration. Straight plant or site prepare and plant if necessary. First option would be to straight plant the site: second option, a control summer burn followed by a spring planting. An herbicide application may be necessary to control undesirable vegetation.

Complex S18-2

Smullen #1 Tract (#4818)

A second thinning is proposed for stand 2 (16.7 acres), a loblolly pine plantation established in 1979 and thinned the first time in 2000. This stand will be thinned to a residual basal area of approximately 80+ sq. ft./acre leaving the best trees as the final crop trees.

Smullen #2 Tract (#4819)

A second thinning is proposed for stand 1 (53.5 acres), a loblolly pine plantation established in 1982 and thinned the first time in 2000. This stand will be thinned to a

residual basal area of approximately 80+ sq. ft./acre leaving the best trees as the final crop trees.

Powell Adkins (#48970)

A first thinning is proposed for stand 1 (22 acres), a loblolly pine plantation established in 1987. This stand will be thinned to a residual basal area of approximately 70 sq. ft./acre.

Complex S27-3

Wells Addition Tract (5422):

A clear cut is proposed for stand 1 along Route 13. This stand is 22 acres in size and over 30 years old. This mature stand was left as a visual buffer 16 years ago and is now experiencing wind throw. This buffer needs to be removed to prevent trees from falling on power lines and Route 13 north traffic lanes. Harvesting should be planned during the winter to facilitate the natural regeneration of pine. However, if natural regeneration is inadequate, hand planting will be done to reinforce the number of natural pine. The green up requirement has been met, as the stand directly behind stand 1 is now 15 years old.

Complex S40-2

Cullen Tract (#5432)

This clear cut area (stand 3 – 36.8 acres) will be harvested during the summer of 2005. The timing of the harvest and availability of a seed source will limit the potential here for natural regeneration, though an evaluation should be made after the first growing season. If there is not an acceptable level of regeneration the site will need to be reforested. Straight plant or site prepare if necessary. First option would be to straight plant the site: second option, a control summer burn followed by a spring planting. An herbicide application may be necessary to control undesirable vegetation

Complex S47-2

Haislip Savannah-Burke Tract (#5405)

A pre-commercial thinning is proposed for stand 4 (42.1 acres), is a naturally regenerated loblolly pine stand. The stand should be thinned down to approximately 400-500 stems per acre. Where healthy, desirable hardwoods (oaks) are present, they should be favored during the selection process.

Complex S49-2

Powell Tract (#4837)

A first thinning is proposed for stand 2 (9.8 acres) a naturally regenerated loblolly pine stand established in 1990. The stand should be thinned to a residual basal area of approximately 70 sq. ft./acre.

A first thinning is proposed for stand 3 (14.1 acres) a naturally regenerated loblolly pine stand established in 1978. This stand should be thinned to a residual basal area of approximately 70 sq. ft./acre.

Complex S50-2

Landon Betts Tract (#5452)

A first thinning is proposed for stand 2 (96.3 acres), a loblolly pine plantation established in 1984. This stand should be thinned to a residual basal area of approximately 70 sq. ft./acre.

Complex S55-2

Haislip-Marumsco Tract (#5403)

A second thinning is proposed for stand 1 (22.3 acres), a loblolly pine plantation established in 1982 and thinned the first time in 1998. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

White Tract (#4846)

A first thinning is proposed for stand 1 (11 acres), a loblolly pine plantation established in 1992. This stand should be thinned to a residual basal area of approximately 70 sq. ft./acre.

A first thinning is proposed for stand 3 (6 acres), a loblolly pine plantation established in 1981. This stand should be thinned to a residual basal area of approximately 70 sq. ft./acre.

A second thinning is proposed for stand 4 (18.8 acres), a loblolly pine plantation established in 1982 and thinned the first time in 1998. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

A second thinning is proposed for stand 3 (6.2 acres), a loblolly pine plantation established in 1981 and thinned the first time in 1998. This stand should be thinned to a residual basal area of approximately 80+ sq. ft./acre, leaving only the best trees as final crop trees.

**Locations & Descriptions
Of
Ecologically Significant Area (ESA)
Restoration Project**

Brookview Ponds ESA, Chesapeake Forest Restoration Work Plan for SFY 07

Wayne Tyndall, State Restoration Ecologist
Maryland Natural Heritage Program
Wildlife and Heritage Service
909 Wye Mills Road
Wye Mills, MD 21679
410 827 8612 x110

1. Pine, red maple, and sweet gum management will continue in Carolina bays located in NW, NE, SE, and SW sectors of the ESA (Figure 1). Non-indigenous pines will be cut or girdled, depending upon size and population density, within the basins and up to a distance of 100 feet beyond the basins. Red maples and sweet gums in the basins will be girdled and treated with glyphosate (without surfactant). Red maples and sweet gums around the basins, within 50 to 100 feet, will be girdled or basal-bark treated with triclopyr (25 %) in kerosene.
2. In the NW sector, a permanent 10- to 15-foot-wide firebreak will be prepared along or near the western property boundary. The exact location of the firebreak will be planned and coordinated through the Chesapeake Forest Manager. Because of the high density of vegetation, mechanical equipment will be needed for firebreak construction. Once completed, a prescribed burn plan will be written and submitted to the Maryland Forest Service for approval. The main goal of the burn will be to reduce the coverage of greenbrier, red maple, sweet gum, and loblolly pine seedlings and saplings. After completion of the prescribed burn, management of large red maple and sweet gum trees will begin around basins currently too thick for access.
3. In the SW sector, an experimental prescribed burn will be conducted in a Carolina Bay filled with *Carex striata*. Because of drier conditions produced by ditching and pine planting, *C. striata* is hypothesized to have spread from a zone along the basin perimeter to across the entire basin. A goal of this burn, conducted during the driest part of the year (probably October or early November), will be to reduce its current coverage and then monitor vegetation change. Baseline data were collected during SFY 2004, and permanent vegetation monitoring transects were established also.
4. In the S sector, pine management in Carpenter frog habitat may occur depending upon SFY 06 survey results and available funds.
5. In all five sectors, merchantable stands of pine will be identified with the assistance of the Chesapeake Forest Manager and discussed for future harvesting.

Figure 1

Brookview Ponds ESA
Restoration Areas: NW, NE, SE, S, and SW



Marshyhope Ponds ESA, Chesapeake Forest Restoration Work Plan for SFY 07

Wayne Tyndall, State Restoration Ecologist
Maryland Natural Heritage Program
Wildlife and Heritage Service
909 Wye Mills Road
Wye Mills, MD 21679
410 827 8612 x110

Red maple, sweet gum, and loblolly pine management will continue in the basin of the Carolina bay with rare and endangered species (the largest depression), and to within 50 to 100 feet of the basin perimeter. Red maples and sweet gums in the basin will be girdled and treated with glyphosate (without surfactant). Red maples and sweet gums around the basins will be girdled or basal-bark treated with triclopyr (25 %) in kerosene. Non-indigenous pines will be cut or girdled.

Marshyhope Pond



Projected Annual Budget

CHESAPEAKE FOREST FY 07 PROJECTED BUDGET

<i>Cost of Management</i>	
<i>(*Costs will vary from year to year)</i>	
State CF Salaries & Contract Management	\$ 300,000
Land Operation	\$ 400,000
Inventory & Monitoring Program	\$ 70,000
Sustainable Forest Certification	\$ 15,000
Watershed Improvement & Other Restoration Projects	\$ 80,000
County Payment (15% of revenues)	\$ 160,000
Fixed Cost (ditch drainage payments to counties)	\$ 8,000
TOTAL COST	\$1,033,000

<i>Operating Revenues & State Funding</i>	
Forest Product Sale Revenues	\$ 750,000
Hunt Club Revenues	\$ 280,000
State Funding	\$ 100,000
TOTAL REVENUES & FUNDING	\$1,130,000