

POTOMAC / GARRETT STATE FOREST

ANNUAL WORK PLAN

FISCAL YEAR 2012

Prepared: _____ Date _____
(Forest Manager)

Reviewed: _____ Date _____
(Regional Forester)

Reviewed: _____ Date _____
(Public Lands Policy & Planning)

Approved: _____ Date _____
(Environmental Specialist)

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* Maps through out document may not be to scales posted due to transfer issues.

A. State Forest Overview

The Potomac-Garrett State Forests, situated in southwestern Garrett County in Western Maryland, have the distinction of being the birthplace of forestry conservation in Maryland. The generous donation of 1,917 acres by the Garrett Brothers in 1906 not only serves as the foundation of the Garrett State Forest, but is the root of both Maryland's present Public Lands system and Forest Service. Mountain forests, streams and valleys make up the nearly 19,000 acres of this State Forest. The forest cover is predominantly a second growth mixed hardwood forest dominated by mixed oaks, sugar and red maples, black cherry, basswood, ash and birch. The geography of this area provides for a wide range of growing conditions from the harsh, wind and ice swept ridge tops of Backbone Mountain to the deep rich slopes above the North Branch of the Potomac River. Much of the state forestland contains excellent quality hardwoods.

B. Annual Work Plan Summary

In addition to the routine operations of the State Forest, the FY-2012 Annual Work Plan for Potomac-Garrett State Forest details 16 management projects including:

-Two recreation management projects: One project involving trail improvements to be submitted for National Recreation Trail Grant funding including grading and erosion control work for the Lost Land Run Trail / Road. The other project involves addressing necessary rehab controls for a number of 'outlaw' bike trails that are adversely impacting habitats for several rare threatened and endangered species.

-One wildlife habitat project; involving a GIS and field exercise to evaluate important woodcock habitat features in the Snaggy Mt. area of the Garrett State Forest.

-One continued watershed protection project mitigating impacts of a harmful forest pest; Hemlock Woolly Adelgid mitigation / Red Spruce Restoration.

-Two continued ecosystem restoration projects; involving control of invasive, exotic plants in both Wallman/Laurel Run area and the Backbone Mt. area.

- 10 silvicultural projects including:

-One non – commercial Timber Stand Improvement (TSI) practice in a sapling stand in the Eagle Rock Area.

-One non-commercial Timber Stand Improvement (TSI) practices in a pole timber stand in the Wallman Area.

- A revision and fine tuning of a Shelterwood Harvest planned for FY-11 in Compartment 32 which resulted in two separate proposals that will allow us to better meet our objective of retaining our important mixed oak component in the forest.

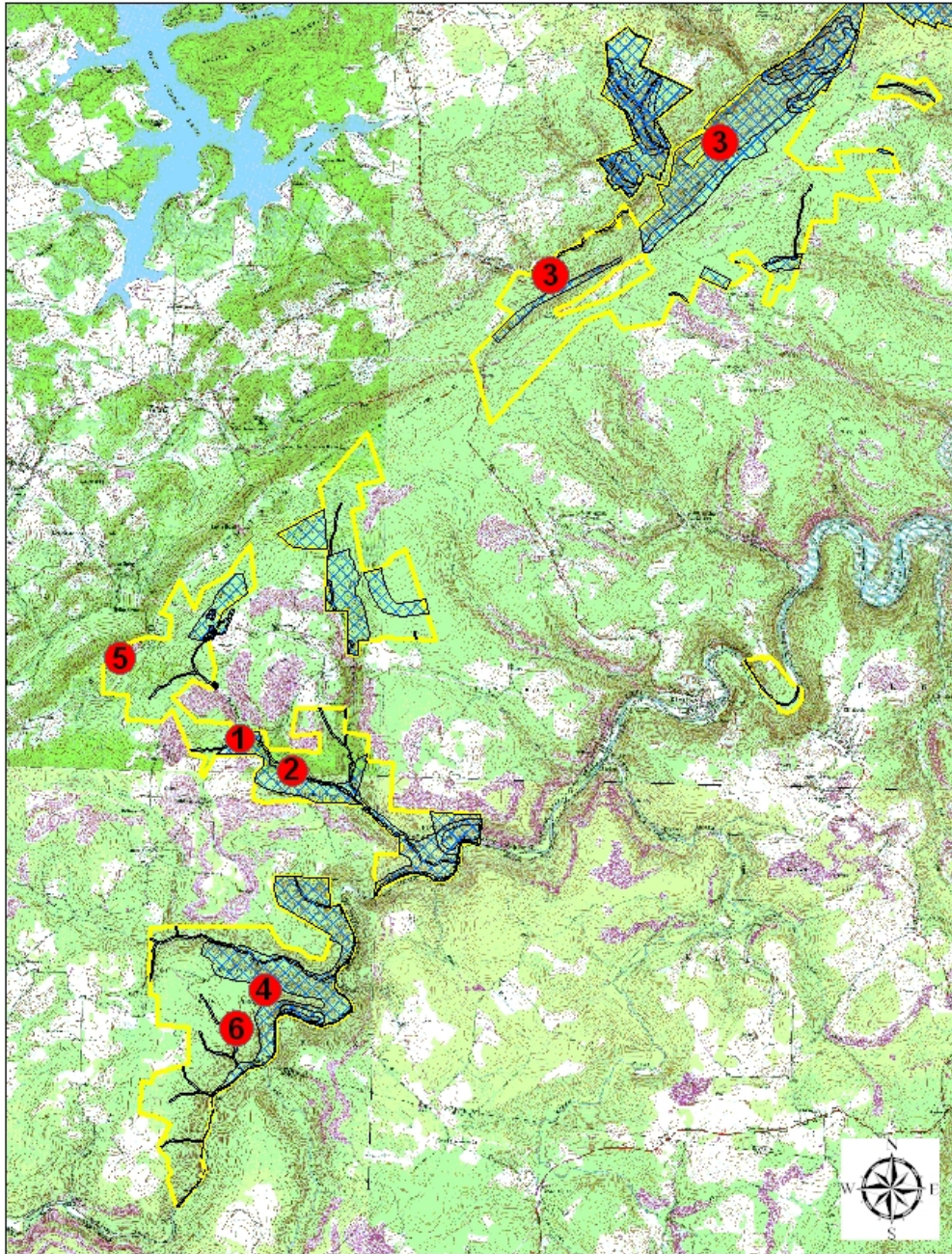
-Four initial conditioning / preparation stages of planned Two Stage Shelterwood Regeneration Systems. These involve an upfront investment in assuring high quality future regeneration of these stands.

-Four 'liberation' / release harvests, that will carry out the final stage of the initial 2-Stage Shelterwood regeneration systems that had been started several years ago.

Forest harvest operations are undertaken to utilize mature and dead/dying/diseased trees, to thin out overstocked stands, to improve and diversify wildlife habitat, to effectively correct public safety concerns and issues, to reduce the forests vulnerability to insect attack or wildlife hazard, to facilitate certain approved research needs, to improve certain aesthetic aspects of an area, and to improve the proportions of age class and species diversity within stands and management blocks. This forest has been intensively managed for over 100 years, utilizing both even and uneven-aged techniques via selective removals and regeneration harvests. Early records indicate that as cut over land was acquired, foresters 'culled' the forest, removing the poorly formed and damaged timber left behind in the wake of the cut and run practices employed by early timber speculators. By removing these undesirable trees, newly forming seedlings were released from competition and were thus cultured into the future growing stock of trees that we enjoy today. The benefits of this work have been significant; including improved wildlife habitat diversity, improved forest health and more abundant mast production, improved utilization of gypsy moth damaged trees, reduced forest fire hazard, and the considerable financial contribution of management to the state and local economies as well as to those employed in the forest products industry. The work plan calls for the harvest of approximately 665,500 bd.ft. of hardwood saw timber; and will generate approximately \$165,000 in fiscal year 2012.

The cultural operations and management projects within this work plan are selected to provide significant contributions to sustainability of the forest resources found with the Potomac-Garrett State Forest and the ecosystems associated with it.

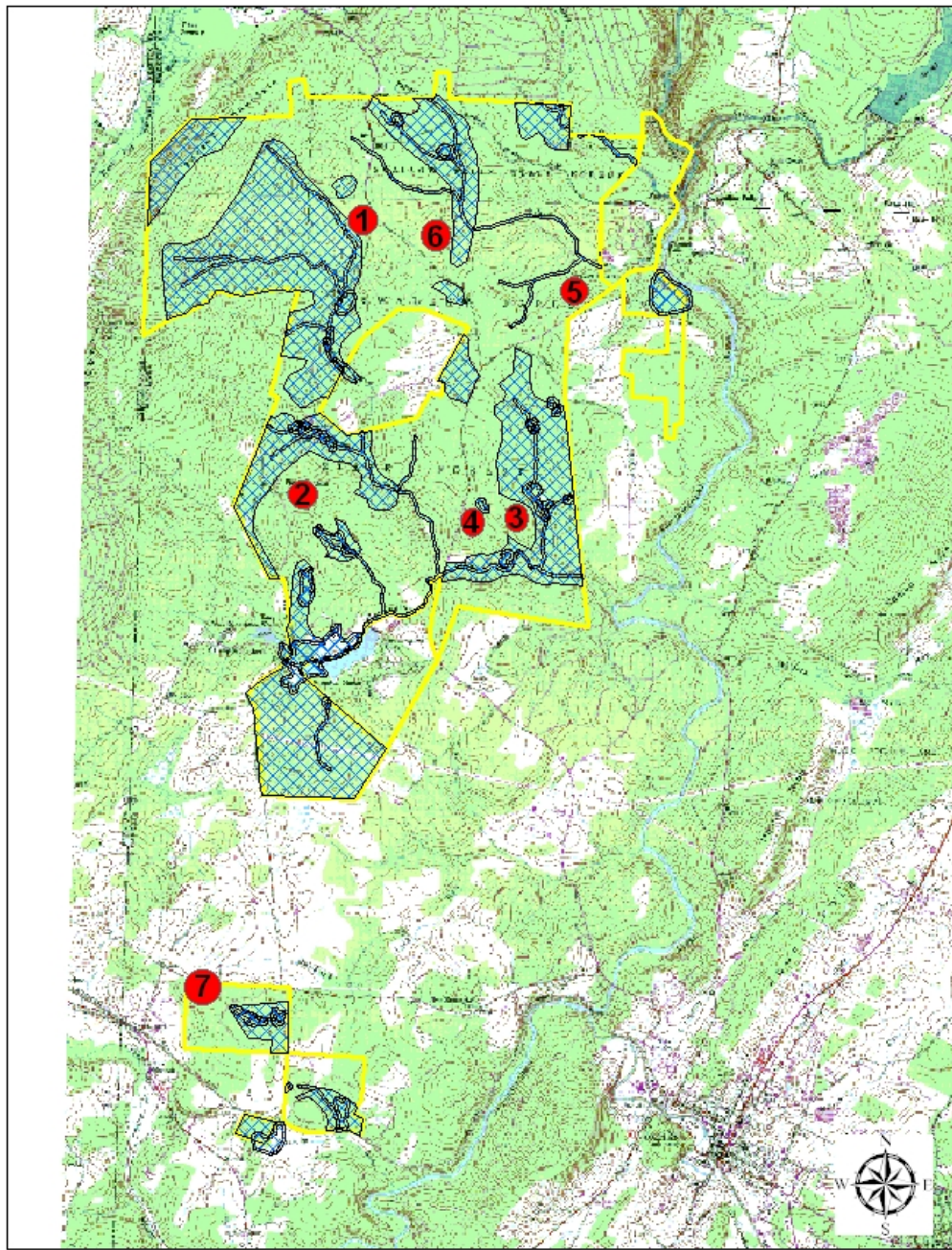
Potomac State Forest FY-2012 General Location Map



1:100,000

 High Conservation Value Forest (Total)

Garrett State Forest FY-2012 General Location Map



1:60,000

 High Conservation Value Forest (Total)

General Location Map Key for FY-12 Management Proposals

| GARRETT STATE FOREST MAP ITEM # | COORDINATES |
|--|-----------------------------------|
| 1. Comp 37,38,40&41 Outlaw Trail Control | 39° 29' 52.04"N 79° 27' 15.91"W |
| 2. Comp. 32 – Brier Ridge Revisited A & B | 39° 28' 11.87" N 79° 27' 52.19" W |
| 3. Comp. 33– (A) Trail Cherry | 39° 28' 07.04" N 79° 26' 05.32" W |
| 4. Comp. 33– (B) Handicapped Hunter Area | 39° 28' 12.94" N 79° 27' 50.88" W |
| 5. Comp. 39– (A) Swallow Falls Rd. | 39° 29' 23.49" N 79° 25' 47.16" W |
| 6. Comp. 39– (B) Cranesville Rd. | 39° 29' 39.30" N 79° 26' 47.79" W |
| 7. Comp. 43– A & B Kindness Demonstration Area | 39° 25' 18.34" N 79° 28' 20.45" W |

POTOMAC STATE FOREST MAP ITEM #

| | |
|---|-----------------------------------|
| 1. Comp. 18-21 – Lostland Run Trail Grading & Erosion Control | 39° 22' 54.69" N 79° 16' 41.63" W |
| 2. Comp. 19 – Lostland Run HWA Mitigation/Red Spruce Planting | 39° 22' 54.69" N 79° 16' 41.63" W |
| 3. Comps. 5&7 – Backbone Mtn. Japanese Knotweed Control | 39° 27' 24.63" N 79° 12' 59.11" W |
| 4. Comps. 21-26 – Wallman/Laurel Run Garlic Mustard Control | 39° 20' 24.65" N 79° 16' 20.22" W |
| 5. Comp. 16 – Eagle Rock Oak Release | 39° 23' 30.93" N 79° 18' 13.61" W |
| 6. Comp. 25 – Wallman TSI | 39° 20' 00.36" N 79° 16' 26.97" W |

C. Maintenance Programs

Aside from the detailed cultural work planned for the state forests, the following is a partial list of projects that are often on-going from year to year and are an integral part of state forest operations.

Maintenance of roads and trails throughout the state forests.

PGSF staff maintains 37 miles of improved road, 21 miles of unimproved road and 22 miles of multi use trails. This work is ever ongoing. A lack of sufficient road maintenance equipment makes the upkeep of this road and trail system a considerable challenge. In order to attempt to meet this challenge, alternative funding sources are continuously sought to provide the necessary equipment and materials required for such maintenance and improvements.

In 2010-2011, a National Recreational Trail Grant will allow for road and trail improvements to the Piney Mt. multi-use trail system. This work will include grading, erosion control, ditch work and replacement of several failing culverts thereby improving public access throughout the Garrett State Forest. A grant proposal has been submitted as seen in this AWP document, for improvements to the Lost Land Run multi use trail to be carried out in 2012 pending receipt of the grant funding.

Also, in 2010-2011 Critical maintenance funds have been appropriated to address critical repairs to significant stream crossing structures on the Snaggy Mt. Road. Repairs are slated for both the bridge over Herrington Creek, and the failing double culverts at Bull Glade Run. Both structures have been inspected and repair plans are being developed. As work on the Herrington Creek Bridge will required stream bank stabilization on adjacent private propert, an MOU must be struck before further design work can proceed. Pending MOU agreement, both projects could be underway in summer of 2011.

***Boundary line maintenance.**

PGSF has 130 miles of boundary line, including interior lines, exterior lines, and road frontage. Boundary maintenance is critical to the management of all public lands. In order to keep up with this effort, PGSF maintains approximately 30 miles of line each year. In addition to routine marking/painting, considerable effort is spent on researching relocating or establishing missing and/or new line, as well as addressing boundary conflicts. As conflicts arise, every effort is made to resolve the issue in a timely and professional manner. Often, this work leads to the need for a licensed surveyor and legal recourse in order to resolve the issue.

***Campsite maintenance, cleaning, and site evaluation**

PGSF offers year round, primitive camping in five separate areas of the State Forest; Lost Land Run Area, Laurel Run / Wallman Areas, Snaggy Mt. Area and Piney Mt. Area. Within each area is a 'group site', a rustic trail shelter and several primitive campsites offering a picnic table, lantern post/table and fire ring. Between 2003-2009 vault toilets were installed in each of the five areas to improve sanitary conditions for campers and forest visitors. Campsites and trail shelters are available on a first come first serve basis; a self registration kiosk is available at the entrance to each area.

D. Special Projects - Forest Resource Management Planning

Certified Sustainable management plan development:

Beginning in 2011, the Forest Service has begun revising the long term sustainable management plans for all three of the state forests in the Western Region. Initial framework will follow the sustainable management plan format established for the State of Maryland's Chesapeake Forest on the Eastern shore. Throughout the course of the last year, broad resource assessments were carried out identifying the various management units and features located on the forests; this spring, efforts focused on the identification and mapping of High Conservation Value Forest Areas (HCVF), much of which was formerly identified as the state forests "Special Management Zone". Within the HCVF are located a broad range of Environmentally Sensitive Areas (ESA); these areas typically contain rare, threatened or endangered species and their critical habitats. Management schemes for the ESAs on Potomac –Garrett State Forest will be developed in FY-12. By fall of 2011, an initial draft of the forests Sustainable Management Plan will be developed and shared with stakeholders for initial comment and review. The Department goal is to have the updated sustainable forest management plans receive dual third party certification under both the Forest Stewardship Councils(FSC) and Sustainable Forestry Initiatives (SFI) standards and guidelines.

Forest Stand Delineation:

A Critical part of developing long term sustainable management plans is the availability of up to date forest inventory data. To this end, the state forests staff has been fully engaged in revising the forest stand delineation on the forests. The process continues to consume considerable staff resources as this project is taking shape. This ambitious undertaking will involve collecting detailed inventory data on both overstory and understory conditions over the entire state forest. The data will be collected and analyzed using the SILVA Inventory System developed by the USFS. Full time forest management staff attended a week long training course on the use of this system in June of this year. The project involves collecting information on some 22,200 sample points. As the data must be collected during full leaf out seasons between hard frost dates, the working window is 5 months. This project is expected to take 3 years to complete and will cost approx. \$40,000/year. Presently PGSF has hired 3 forest technicians to begin this process, while our 2 full time technicians lead and manage this project on top of their full work load implementing the Annual Work Plan on the forest. The stand delineation and inventory project has resulted in the pulling of one man from his normal duties for the equivalent of a full years time each year of the project to serve as crew leader, provide project planning, and processing data.

E. Recreation projects

Maintenance and management of 3-D archery range

PGSF offers the only 3-D Archery Range in the States Public Lands System. The facility is located behind the State Forest Headquarters. The range offers a 30 target course, with 4 separate skill levels at each target. The facility is open April 1st - Oct. 1st, dawn to dusk. The State Forest hosts a summer fun league, an annual tournament shoot, as well as a fall 'hunters special' shoot.

Development of Rifle Range per FY-09 AWP

With site approvals obtained internally, plans for a public rifle range to be located along the Snaggy Mt. Road continue to be pursued. Initial noise testing has been carried out with these results indicating that expected sound impacts to adjacent private properties will fall safely below acceptable levels. State forest manager will meet with range safety experts to discuss layout and design options with respect to both on and off site safety. With noise and safety impacts investigated, forest manger will meet with adjacent property owners to discuss project plans. Assuming all safety and noise issues can be addressed, a site design and plans will be developed, along with associated budget from which funding sources will be pursued.

2011 NATIONAL RECREATIONAL TRAILS FUNDING APPLICATION

1. Project Sponsor (Applicant):

Government / non-profit entity: **MD DNR Forest Service**
Name of project manager: **John Denning**
Title: **Forest Manager**
Organization: **Potomac- Garrett State Forest**
Address: **1431 Potomac Camp Rd, Oakland MD 21550**
Phone: **301-334-2038**
Fax: **301-334-3922**
E-mail: **jdenning@dnr.state.md.us**

2. Project name: **Lostland Run, (Phase one).**

3. Project location: **Lostland Run Multi.Use Trail, is located within the Potomac State Forest, and is situated approx. 7 miles south east of Oakland MD**

4. Trail Type

May check more than one.

X Motorized Trail

Diversified Trail

Non-motorized Trail

Transportation Trail (diversified trail designed for bicyclists and pedestrians to connect destinations. Go to <http://www.mdot.maryland.gov/Planning/Trails/trails.html> for more information)

5. Project Type

X Maintenance / Restoration of existing trail

Construction of new trails

Relocation of existing trail

Development and rehabilitation of trailside facilities and trail linkages

Purchase and lease of trail construction equipment

Lease or acquisition of easements or property for recreational trails or corridors

Implementation of interpretive/educational programs to promote intrinsic qualities, alternative transportation, safety, and environmental protection, as those objectives relate to the use of recreational trails

6. Abstract. *This project will involve maintenance and restoration of an existing multi-use trail network and will include sediment and erosion control abatement through restoration of proper drainage to the 3.5 mile section of Lostland Run Multiple Use Trail*

This project “Phase one” will involve replacement of 26 failing culvert pipes that carry only storm water and do not require water quality permit for replacement as well as surface drainage corrections, as well as grading and surface drainage correction.

This project benefits the recreational users of the Potomac State forest by first improving motorized access to a variety of recreational resources including: trout fishermen’s access to the Potomac River and the Lost land Run, hiking access to the Potomac Cliffs and Lostland Run Hiking Trails, as well as access to the primitive campsites located along this trail. More importantly, this project will improve the water quality of Lostland Run and the Potomac River by reducing sediment loading associated with this failing and unstable graveled trail bed . (Note- the work will only be done on the multi-use trail, not the hiking trails; the work on the multi-use motorized trail will improve access to the Hiking trails as well as the River.)

7. Project Summary.

This trail connects 7 campsites and provides access the Potomac River trout fishery; the Lostland Run trout fishery; the Potomac Cliffs Overlook Trail; and the Lostland Run Hiking Trial. Work for this “Phase one” project will include replacing 26 culvert pipes that carry storm water and do not require water quality permits for replacement. Along with pipe replacement, work will include restoration of stone headwall inlets/outlets, grading ,reshaping, and filling the trail bed, and hardening the surface with crushed stone.

Multi- use trails, especially those offering access to motorized vehicles, horses, and bicycles such as the Lostland Run Trail, require regular maintenance involving the use of heavy equipment. Heavy equipment is necessary to provide proper drainage, and to maintain the existing sediment and erosion control devices engineered into the trail system. As grading is completed on any stone trail surface, additional stone must be applied to reharden the newly disturbed road bed there-by preventing the otherwise inevitable soil erosion, and failure of the trail bed.

For planning purposes, a trail assessment has been completed, with inventory of culvert condition as well as stream classification status. As permitting for intermittent stream culverts can be a timely process, this grant request will address only those pipes that can be immediately repaired without additional permitting, along with the associated surface drainage corrections. The project area falls within a State Forest Designated “Environmentally Sensitive Are” (ESA). All planned work will be carried out within the existing footprint of the trail and its drainage system and will in fact improve environmental conditions within this ESA , by improving the water quality that the ESA was set up to protect.

8. Project property ownership

This project falls entirely within the boundaries of Maryland DNRs Potomac-Garrett State Forest.

9. Project Length, Width, Surface

The projects improvements will take place over 3.5 miles (15,840 linear feet) with an average width of 12 feet. The trail is an existing trail with a stone stabilized surface.

10. Prior Projects

Potomac-Garrett State Forest has received a number of NRT Grants over the past 13 year. At the time of this submittal, all previously approved and funded grants have been completed and ‘closed out’. This project has ties to RT0222, for purchase of Vault Toilets, one of which was installed along the Lostland Multi-use Trail referenced in this request. This project is part of a series of improvements to all of the motorized trails on the state forest, specifically targeting the replacement of virtually all of the failing 60 -70 year old corrugated iron culverts within the trail system. Most recently completed grants in this effort include: Snaggy Mt Grading RT0643; Laurel Run Culverts RT0232; and Wallman Grading and Sediment control RT02032.

11. Work Plan

Although program does not cover, please include planning and design, if not completed yet.

| Milestone/ Task | Start Date | Duration | Responsible Party | Justification |
|---|-----------------------|-------------------------------------|------------------------------|---|
| Culvert and stream evaluation | 6/08 | complete | Forest Staff | needed for maintenance and grant planning. |
| procurement | 7/12 | 4 wks. | Forest Staff | Proper purchasing of materials per state standards. |
| Progressive pipe replacement, grading and stabilization. | 8/12- 7/13 | Dry periods of the year. | Forest Staff | Work to be conducted during dry periods of the year to lessen water quality impacts. |

12. Budget

Cost Breakdown for Federal Funds Requested (80%) *NOTE: All project supplies (100%) to be covered by requested \$30,000 Federal funds as listed below, the required 20% match will be accounted for ‘in kind’ and will be well over 20% of entire projects cost estimated at \$90,900 accounting for heavy equipment use.

| # | Description | Amount Requesting (80%) | Required Match (20%) | Total (100%) |
|----------|--|--|---------------------------------|---------------------|
| | Culvert pipes, 650 linear feet @ \$15/ ft. | | | \$ 9,750 |
| | Stone to bed pipes. 330 ton. @\$14/ton | | | \$ 4,650 |
| | Seed, mulch.lime and fertilizer to stabilize. | | | \$ 1,700 |
| | Stone to harden surface of trail. 850 ton @ \$14/ton. | | | \$11,900 |
| | Misc. supplies and materials including: pipe couplers, hardware, cutting torch supplies and fuels, mortar mix, misc. sediment control materials, silt fence, stakes, matting, earth staples, cut-off saw blades, grinder heads, etc. | | | \$ 2,000 |
| | Total | | | \$30,000 |

Matching Funds (20%)

| Source | Type (cash or | Description including Hours and rate | Total |
|---------------|----------------------|---|--------------|
|---------------|----------------------|---|--------------|

| | in-kind) | | |
|---|----------------|---|--|
| Labor and skilled equipment operation including use of: grader,backhoe, skidsteer,loader, roller,bulldozer. | (All) In-kind. | grader, 28 hrs @ \$150/hr. backhoe, 104 hrs. @\$150/hr. skidsteer, 104 hrs. @ \$150/hr. loader, 104 hrs. @ \$150/hr. roller,56 hrs. @ \$150/hr. bulldozer. 10 hrs. @ 150/hr. | \$ 4,200 \$15,600 \$15,600 \$15,600 \$ 8,400 \$ 1,500 |
| Total | | | \$60,900 |

13. Submission

Applications should be submitted to the Scenic Byway / Recreational Trails Program at the Maryland State Highway Administration (SHA) by **2 p.m. on July 1st, 2010**. In early August, the Recreational Trail Advisory Committee will meet to review projects. Applicants will be notified concerning awards during the fall of 2010.

Options for Submission include:

Internet/E-mail

- Complete the form on your computer and save the file on your computer.
- Email the file as an attachment to: Terry Maxwell, tmaxwell@sha.state.md.us

U.S. Mail

- Complete the form by hand OR complete it on your computer and print out a hard copy.
- Mail printed form to Terry Maxwell at Maryland Scenic Byways / Recreational Trails Program, State Highway Administration, 707 N Calvert Street, Baltimore, MD 21202.

Fax

- Complete the form by hand OR complete it on your computer and print out a hard copy and then
- Fax the sheet to 410-209-5003 with a cover sheet directing it to Terry Maxwell.

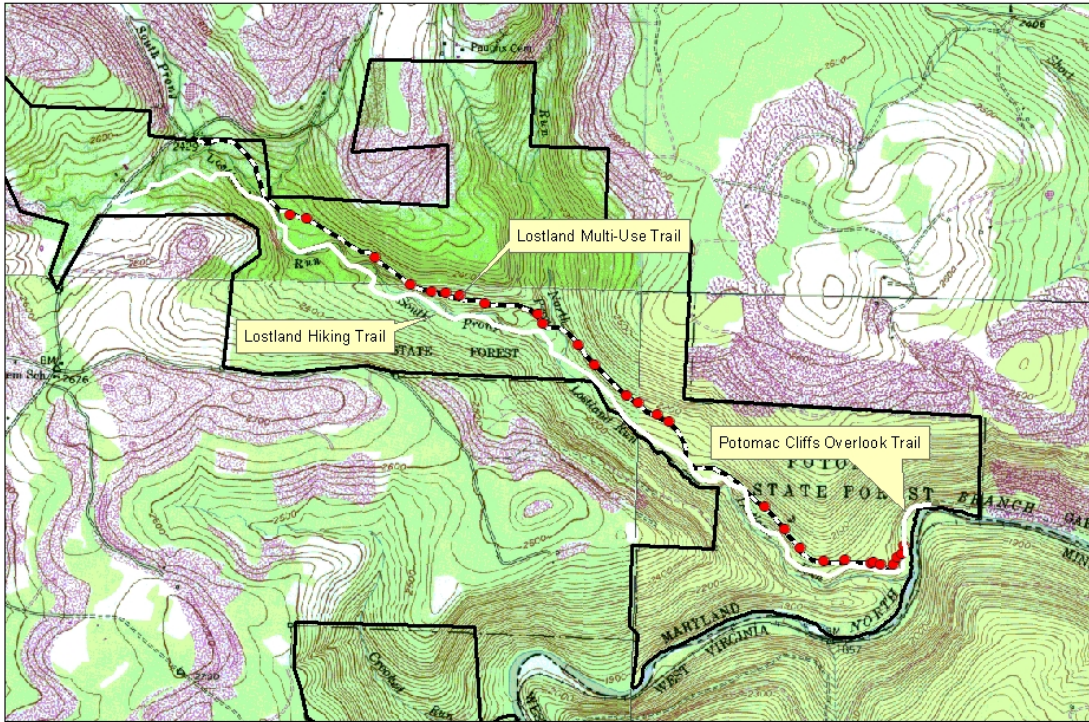
Hand-Deliver

- Complete the form by hand OR complete it on your computer and print out a hard copy and deliver.

14. For additional information, please contact:

Maryland Scenic Byways/Recreational Trails
Office of Environmental Design
State Highway Administration
707 N Calvert Street
Baltimore, MD 21201
410-545-8637 (p)
410-209-5003 (f)
tmaxwell@sha.state.md.us
www.marylandroads.com

Compartments 18-21 NRT Proposal Lostland Run Phase One
 Grading, Erosion Control, and Culvert Replacement FY-12



Compartments.....18-21
 Quads.....Deer Park & Gorman

● Culverts to be replaced (Phase I)

Scale= 1 : 24000



Description

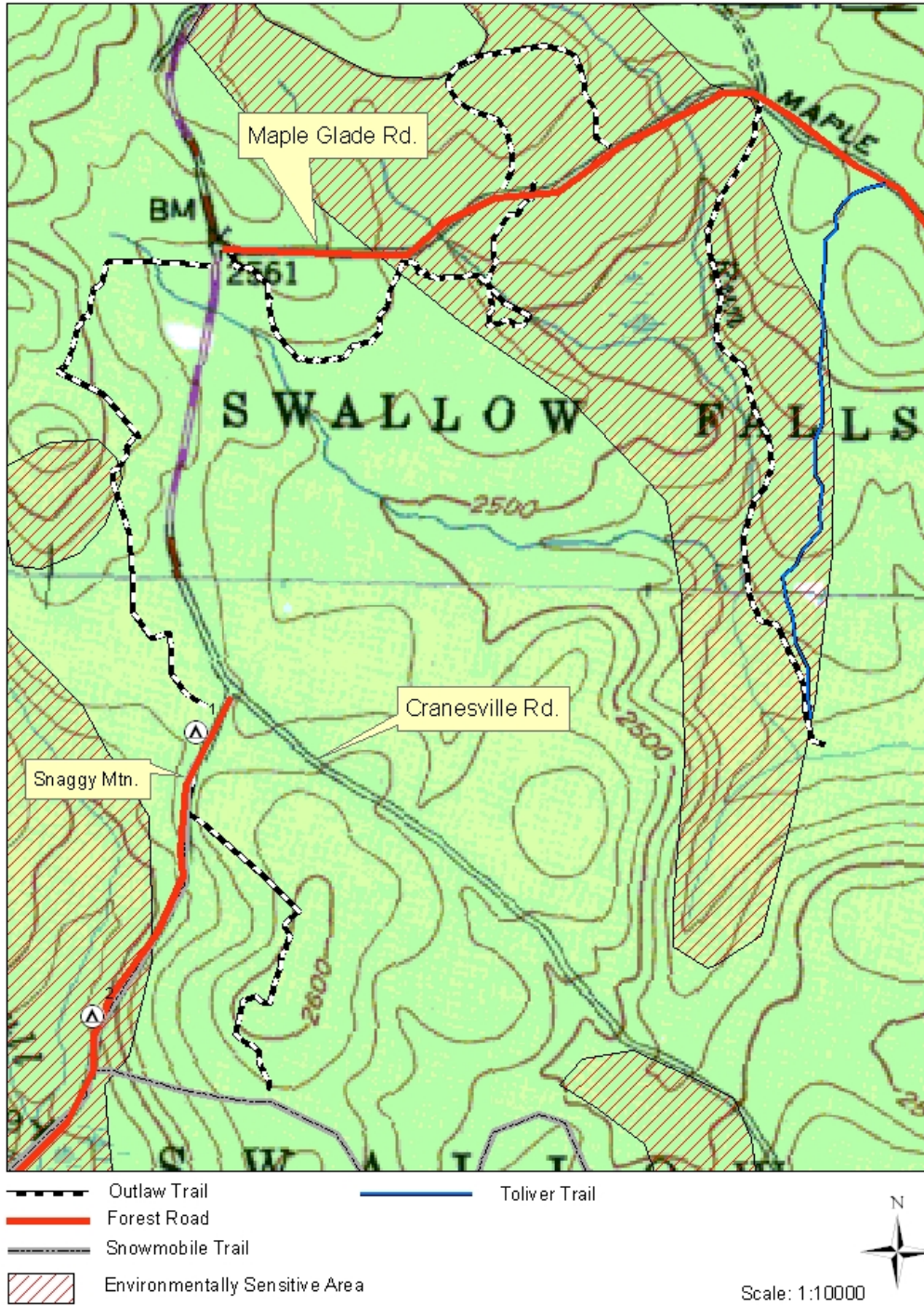
The area between the Maple Glade Road and the Snaggy Mtn. Road on the Garrett State Forest has been subject to the development of a number of 'outlaw' mountain bike trails. These trails that have been developed without authorization of the Department and with no consideration for the resource management goals for the area. Forest management staff became aware of trails after observing bicycle tire tracks in a couple of rather subtle trail / road crossings near a known Environmentally Sensitive Area. The trail runs through a considerable section of the HCVF(High Conservation Value Forest) identified to protect the Toliver Run Natural Area which contains bog communities and critical habitat for 2 rare reptiles the Mountain Earth Snake and the Coal Skink; as well as habitat and communities of various threatened and endangered plants. The area serves as a critical deer wintering area and contains known bobcat dens.

These narrow trail crossings had been overlooked as simply game trails until repeated use during wet weather left unmistakable tire tracks visible from the roadway. Further investigation shows that once the discreet trail left the road edge that its developers took full liberty in designing and laying out a full blown single track bike trail, with challenge obstacles etc. Use of this trail is increasing as its presence is spread by word of mouth through the biking community. With increasing use, come increased threats to the rare, threatened and endangered species associated with this environmentally sensitive area.

Management and Recommendations

In an effort to curtail use of these trails, and to stop further 'outlaw trail development, the Forest Manager contacted the Garrett Trails Committee, organized leaders in trail development in the county, with a particular interest and focus on bike trails. Members of GTC were aware of these trail, and admitted ignorance of the unauthorized nature of the trails, and of any possible threats to sensitive plant or animal communities. With some education of the GTC regarding management of the state forest system it was agreed that GTC would help to get the word out that the development of unauthorized trails on state forest lands is unacceptable. GTC also agreed to work with the Forest Manager to review existing trail system to make it more attractive to the biking community. Any rehab of these trails is pending review and comment by the ID team. Though presently, it is proposed that the 'trail heads' will have trees dropped across the entrances at all road crossings to stop further use. GTC suggested posting these outlaw trails with an explanation that they are in fact unauthorized trails, and they impact rare, threatened and endangered species to help educate riders.

FY 12 Outlaw Trail Location
Comp 37, 38, 40, 41



F. Watershed Protection

COMPARTMENT 19

(Lostland Run HWA Mitigation / Red Spruce Planting) FY-12

Description/Background:

In 2004, the significant forest pest, Hemlock Woolly Adelgid (HWA), was discovered in the Lostland Run drainage. This Asian, exotic, insect pest is a killer of Hemlock trees. It has been in the US since 1924. With no natural enemies in this country, it has left a trail of dead hemlock forests in its wake. MD Dept. of Agriculture and State Forest staffs have been monitoring the infestation in Lostland since its discovery. The population has remained at a low level; winter temperature extremes here in Garrett Co. appear to be keeping the population in check. Presently there are no readily available biological or chemical controls suitable for stand level control of this pest, though on going research is showing positive results with a number of biological controls including predatory insects.

Historically, stands infested with HWA have been relatively short lived, resulting in complete stand conversions often in the course of one decade. As hemlock stands on the state forest are generally associated with riparian forested stream buffers, the loss of these stands may have significant negative impacts to the water resources.

While the Lostland HWA population seems to be minor and somewhat stable, in order to provide further protection against the shocking loss of the hemlock trees, the state forest staff has initiated a project to mitigate the likely loss of the hemlock cover. In an attempt to establish a native conifer that will provide benefits similar to those offered by the hemlocks, test plots of Red Spruce seedling were planted beneath the hemlock canopy in both the spring of 2007 and 2008. In the spring of 2009, 500 Red Spruce seedlings were planted in the riparian buffer zone. These plantings have been monitored, and planting methods have been modified to insure the best possible survival in this difficult planting site. Analysis of these 3 test plantings indicate that the dense shade present in these relatively undisturbed hemlock/hardwood riparian forests does not allow sufficient sunlight to penetrate to the forest floor for the successful establishment of even the very shade tolerant red spruce seedlings. Our observations indicate that forest floor light levels must be increased in order to allow the seedlings to be able to photosynthesize and become established.

Further research and experimentation with control of the available light is necessary to determine if under planting with Red Spruce is a viable option that may offer a natural means of offsetting the negative impacts associated with the likely loss of the hemlock stands along this important brook trout stream.

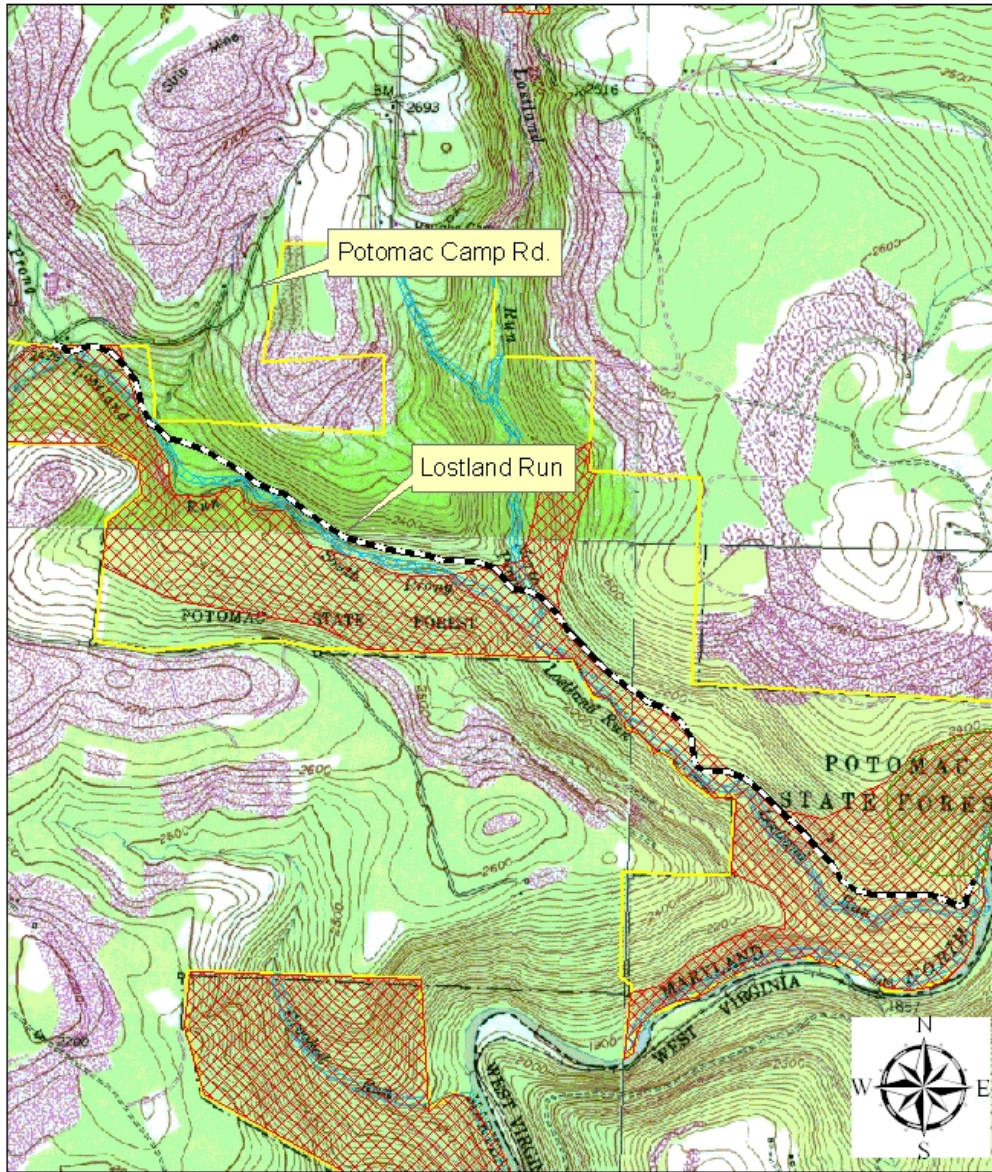
Proposed management:

The plan for this site in 2012 is to establish three 1 acre planting sites that will have varying levels of understory light controls carried out by thinning these sites “from below”, reducing the basal area of the stands by 10-30 % focusing on removing stems from the 1 inch

diameter class and up, until desired stocking is met. Each of the sites would then be planted with 100 red spruce seedlings. The tops of all trees that are cut will be left on the forest floor to serve as a protection from deer browsing the seedlings. All hardwood stumps will be treated with appropriate herbicide to prevent resprouting.

The objective is to determine what measures are necessary to successfully establish Red Spruce seedlings that may eventually replace the hemlocks in the 100 ft. riparian zone along Lostland Run. The goal is to establish an equivalent area of spruce cover on the stream bank. If research and development in forest pest management does not provide the key to successful HWA eradication and hemlock protection in the next 10-20 years, the establishment of a healthy understory of Red Spruce may buffer the stream against the shock and likely inevitable loss of hemlock cover, further safeguarding the water quality of this mountain stream.







Compartments 18,19,20,21 Lostland Run HWA Mitigation/ Red Spruce Underplanting FY-12



Compartments..... 18,19,20,21
Quad.....Deer Park, Gorman

1:24,000

Legend

-  PGDF_HCVF_OLD_GROWTH_300FT_BUFFER
-  PGDF_HCVF_OLD_GROWTH_MGT_UNIT
-  Wetlands
-  PGDF_HCVF_WS300_100_FTEUSER
-  PGDF_HCVF_BDA
-  PGDF_HCVF_BLUE_LINE_SOFT_BUFFER

G. Ecosystem Restoration Projects

Invasive Exotic Plant Control

Across the state, a biological invasion of non-native plants is spreading into our fields, forests, wetlands and waterways. Various referred to as exotic, nonnative, alien, or non-indigenous, invasive plants impact native plant and animal communities by displacing native vegetation and disrupting habitats as they become established and spread over time. Early detection and appropriate control of the spread of problematic species is important for the conservation of our native flora and fauna. Control efforts often require considerable resources (labor, time and money). As in many cases the introduction of these widespread and invasive plants cannot be prevented. It is important to evaluate and plan control efforts in order that such efforts contribute meaningfully to the success of forest conservation plans.

Populations of two invasive exotic plant species have been identified as being in need of control on PGSF, they are: Japanese knotweed (*Polygonum cuspidatum*) and garlic mustard (*Alliaria petiolata*). The following efforts are being taken to limit the impacts of these invasive species.

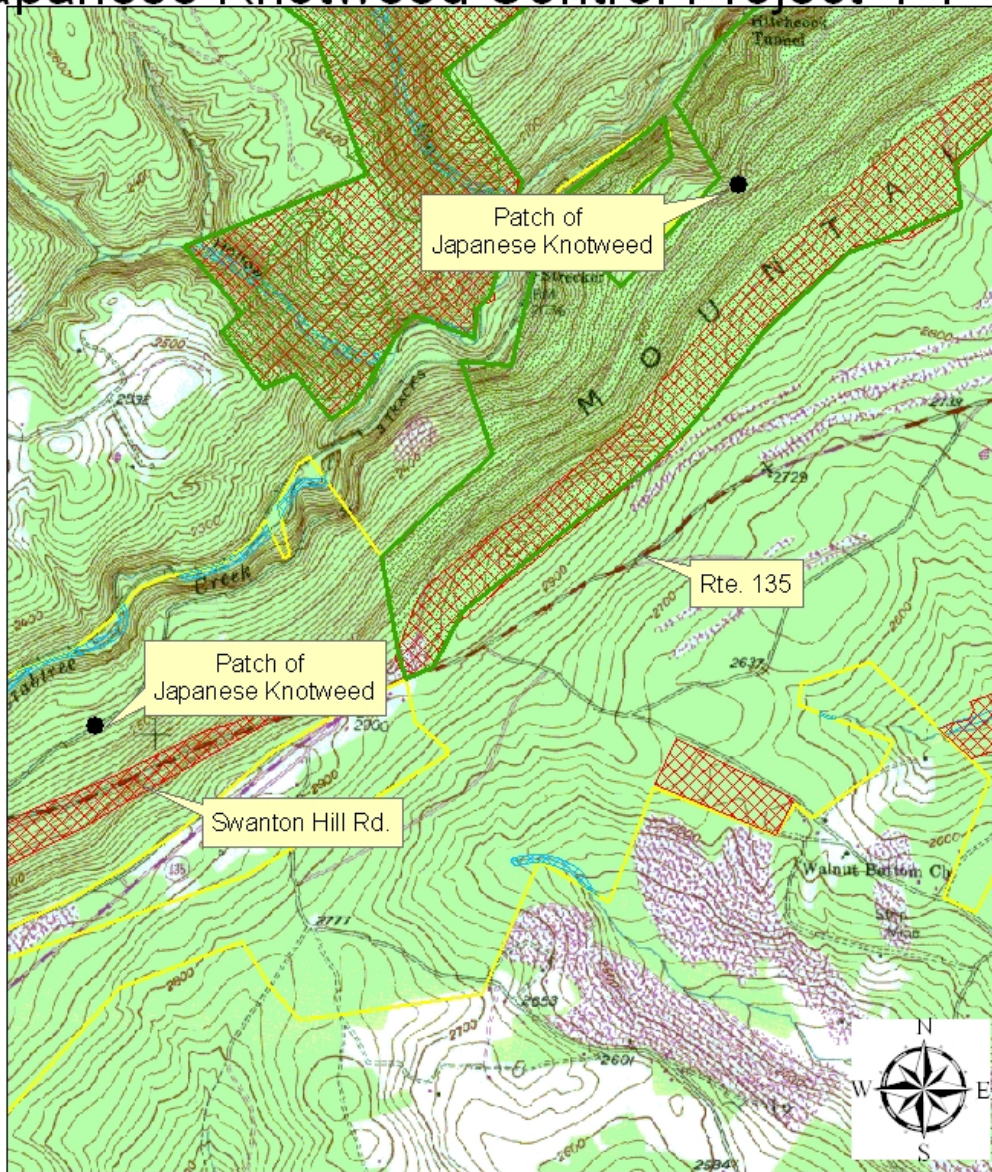
COMPARTMENTS 5&7 (Japanese Knotweed Control Project – Backbone Mt.)

Ongoing Project:

Within the Potomac State Forest, Japanese knotweed is well established along the base of Backbone Mountain following the railroad bed at the base of the mountain. It has overtaken much of the lower reaches of Crabtree Creek which runs along the railroad grade. However, within the state forest, its spread has been generally limited to the base of Backbone Mountain; the area associated with the railroad and Crabtree Creek. In recent years, two ‘patches’ have been found on the upper slopes of Backbone Mt. The first is located on the roadside edge of a section of the state forest access road that serves as the Backbone Mt. ORV trail. This road defines the upper boundary of the Crabtree Slopes Environmentally Sensitive Area ESA. The second, and smaller, population is located along a gated forest access on the east side of Swanton Hill Road. State forest staff has been working to restrict the spread of these populations by mowing the roadsides prior to seed development. In 2004, as an educational program for the Maryland Conservation Corp., an effort was made to eliminate the plant colony by strictly mechanical means including mowing and later grubbing out the plants roots and rhizomes. This effort was not successful. Mechanical controls alone cannot eliminate this aggressive plant invader.

In 2005 and 2006, in a cooperative effort between MD DNR Wildlife and Heritage Service, MDA Plant Protection and Weed Management Program, and Potomac Garrett State Forest staff, took an integrated pest management approach toward the control of these knotweed populations. Carefully timed mechanical and chemical treatments were applied to the plant colonies. The areas were mowed just prior to seed development, and later, following resprouting but just before the start of fall dormancy, the plants were sprayed with an appropriate herbicide (*glyphosate*). In both 2009 and 2010, only a few individual plants were present, and they were treated with the same mechanical and herbicide treatments. These areas will continue to be monitored annually and follow-up treatments will be applied as necessary to prevent reestablishment of these colonies.

Compartment 5 Backbone Mtn. Japanese Knotweed Control Project FY-12



Compartment.....5
 Quad.....Kitzmilller

Scale 1 : 24000

- Legend**
- Polomac Entry
 - Proposed Management Area
 - PGDF_HCVF_OLD_GROWTH_300FT_BUFFER
 - PGDF_HCVF_OLD_GROWTH_MGT_UNIT
 - Wetlands
 - PGDF_HCVF_WS000_100_Footer
 - PGDF_HCVF_BSA
 - PGDF_HCVF_BLUE_LINE_SOFT_BUFFER

COMPARTMENTS 21-26
(Garlic Mustard Control Project - Wallman/Laurel Run)
Background:

Garlic Mustard is one of the most prevalent invasive plants found in Maryland. It can be found throughout the Potomac-Garrett State Forest, where it frequently occurs in moist, shaded soil of river floodplains, forests, road sides, edges of woods and trail edges and forest openings. Disturbed areas are most susceptible to rapid invasion and quick establishment of dominance. Though invasive under a wide range of light and soil conditions, garlic mustard is associated with calcareous soils and does not tolerate high acidity.

Garlic mustard poses a severe threat to native plants and animals in forest communities in much of the eastern and Midwestern United States. Many native wildflowers that complete their life cycles in the springtime occur in the same habitat as garlic mustard. Once introduced to an area, garlic mustard outcompetes native plants by aggressively monopolizing light, moisture, nutrients, soil and space. Wildlife species that depend on these early plants for their foliage, pollen, nectar, fruits, seeds and roots, are deprived of these essential food sources when garlic mustard replaces them. Humans are also deprived of the vibrant display of beautiful spring wildflowers.

Garlic mustard also poses a threat to one of our rare native insects, the West Virginia white butterfly (*Pieris virginiensis*). Several species of spring wildflowers known as "toothworts" (*Dentaria*), also in the mustard family, are the primary food source for the caterpillar stage of this butterfly. Invasions of garlic mustard are causing local extirpations of the toothwort, and chemicals in garlic mustard appear to be toxic to the eggs of the butterfly, as evidenced by their failure to hatch when laid on garlic mustard plants. Natural Heritage biologists have conducted inventories of West Virginia White butterflies in this area, and will monitor the populations response to the control efforts.

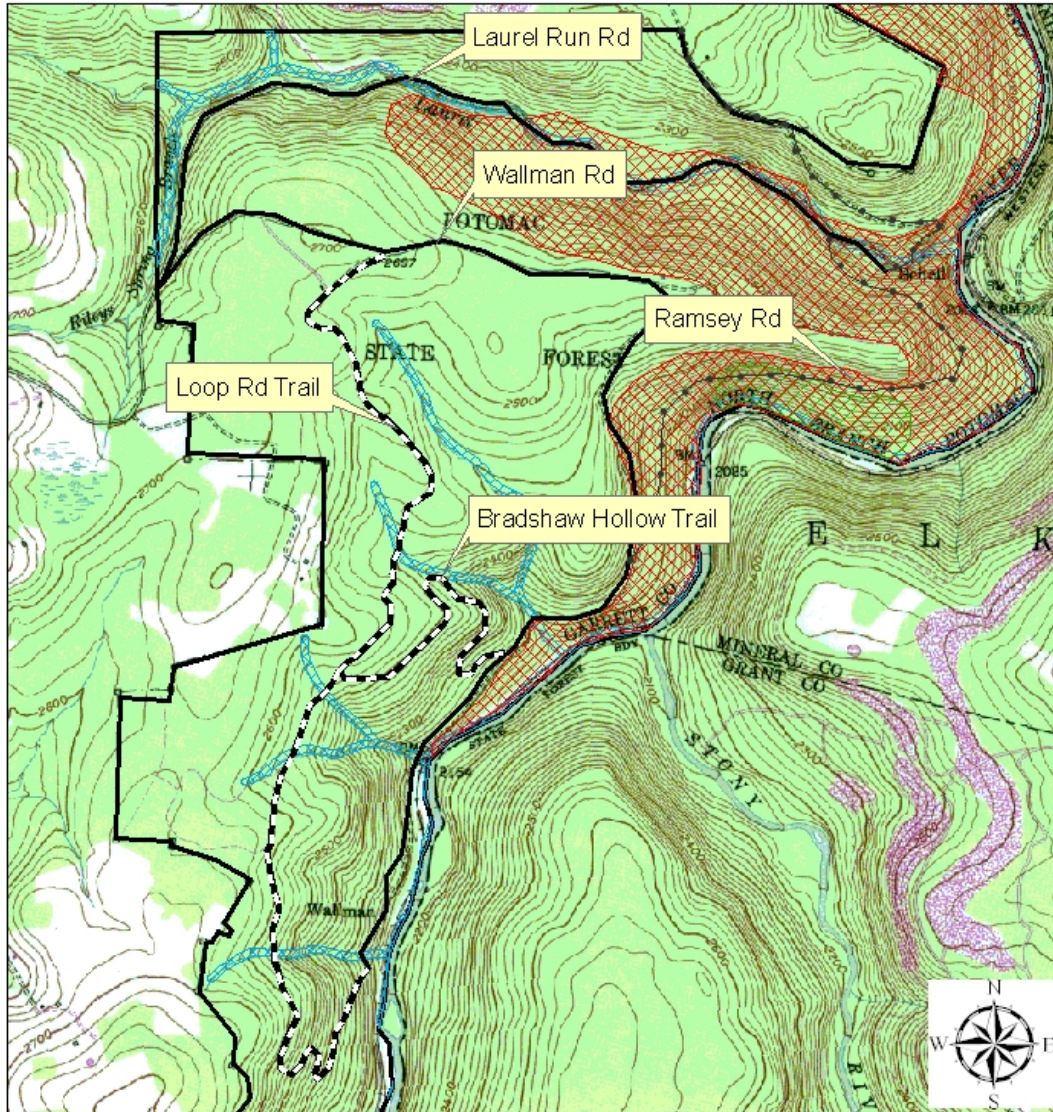
On an even larger scale, recent research indicates that garlic mustard may be allelopathic to important beneficial mycorrhizalfungi, and therefore may retard forest tree regeneration.

Proposed Action

As with most invasive plants, complete elimination is often neither practical nor possible, especially at a forest wide level. However, a management goal of protecting specific, ecologically sensitive areas (ESA) is often feasible using accepted control measures. A number of ESAs have been identified within the Wallman/Laurel Run area of the Potomac State Forest as being jeopardized by adjacent garlic mustard populations. These ESAs contain at least 9 known Maryland rare, threatened or endangered species that could be negatively impacted if garlic mustard overtakes these ESAs. Critical garlic mustard colonies have been mapped, and evaluated for control priority. Total acreage infested is approx. 1 acre, with this acre comprised of numerous small patches spread out along nearly 5 miles of road edge, and several pockets of infestation under closed canopy away from the roads.

Very early in spring of 2010, the first of a series of planned herbicide applications was carried out. In this case, glyphosate was applied using low volume, low pressure backpack sprayers to spot treat the limited amount of one year old plants carrying over from last springs 2009 germinants, as well as the earliest 2010 spring germinants. This treatment will be followed up with a fall application of the same herbicide to capture those plants that sprouted later in the spring after the seasonal flush of herbaceous plant growth limits the directed spot treatment of this early emerger. The site will be monitored and a second series of spring and fall herbicide applications will be planned for 2011 to capture survivors or first-year plants newly recruited from the soil seedbank. Following treatment the area will be monitored for at least 3 more years to ensure exhaustion of the residual seed bank in the soil. Herbicide application will be done using a combination of backpack sprayers and a utility vehicle mounted spray rig, allowing target specific application.







Compartments 21, 22, 23, 24, 25, 26
 Wallman/Laurel Run Garlic Mustard Control Project FY -12



Compartments.....21, 22, 23, 24, 25, 26
 Quad.....Gorman

Scale: 1: 24000

Legend

-  PGSF_HCVF_OLD_GROWTH_300FT_BUFFER
-  PGSF_HCVF_OLD_GROWTH_MGT_UNIT
-  wildlands
-  PGSF_HCVF_WSSC_100_FTBuffer
-  PGSF_HCVF_ESA
-  PGSF_HCVF_BLUE_LINE_50FT_BUFFER

H. Silvicultural Proposals

COMPARTMENT 16 (Eagle Rock Oak Release)

FY-12

Description

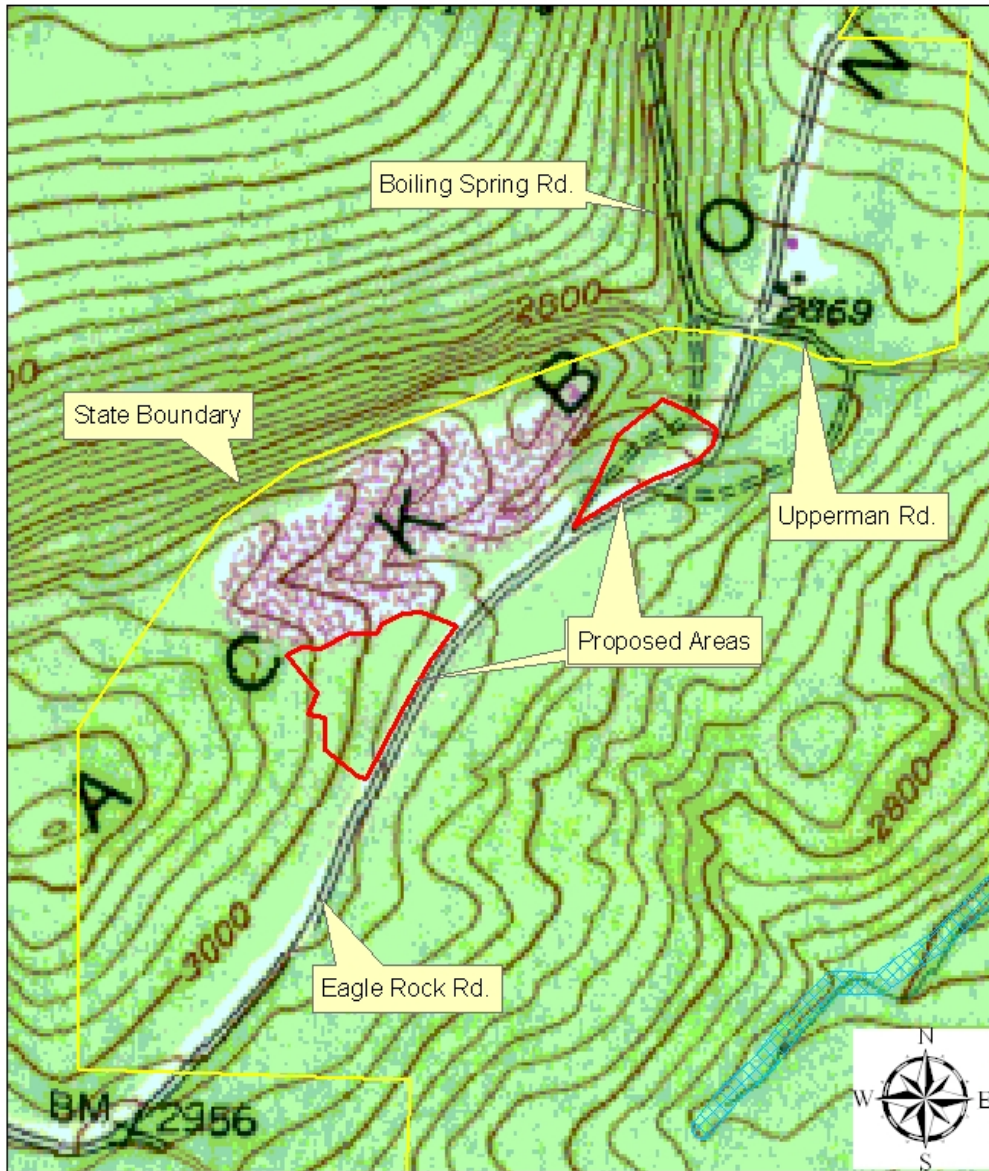
This area is located along the west side of Eagle Rock Road, within Compartment 16 of the Potomac State Forest. The site includes 9 acres of mixed hardwood saplings resulting from salvage driven clear cuts harvested in 2006. The initial salvage was done as part of an effort to reduce roadside hazards left as a result of the 2002 ice storm that severely damaged this mixed oak stand. The result is a densely stocked seedling sapling stand containing over 7,000 stems per acre; of which 40% are mixed oaks, 20% is Red Maple, 13% is Black Cherry and 26% is Witch hazel. As witnessed on adjacent stands with similar soils, Red Maple and Black Cherry will typically out compete the Red Oak on this rich site. This is beginning to take place in this early stage of stand development.

The site has an eastern aspect and drains to the South Prong of Lost Land Run, part of the Potomac River drainage system. Underlying soils include 'DeKalb channery loams' and 'DeKalb and Letonia very stony loams'. These soils are also moderately deep and moderately well drained to somewhat poorly drained. Equipment limits can be moderate due to seasonally perched water table. Degree of slope ranges from 5-25% through out the site. The productivity of the site is very good with site index of 65-75 for Red Oak.

Management and Silvicultural Recommendations

In an effort to maintain valuable oak species in this ridge top stand, a non-commercial, timber stand improvement (TSI) practice in the form of a Crop Tree Release (CTR) will be carried out. During this operation, approximately 30-60 saplings/ac. will be selected as future crop trees. These crop trees will be released from crown competition on all sides. In selecting potential crop trees, special emphasis will be given to the release of oaks, with the majority of the crop trees being Northern Red Oak. The saplings cut for this release work will be left on the forest floor to decay back into the soil. This Crop Tree Release will improve the survival rate among the desirable oak species with the desired goal of retaining at least a 30% mixed oak component in this developing stand.







Compartment 16 FY-12



Compartment.....16
 Area.....9 Acres
 Species Mix..... Oak/ Maple
 Size Class.....Seedling / Sapling
 Quad.....Deer Park

Scale: 1" = 660'

Legend

-  PGSF_HCVF_OLD_GROWTH_300FT_BUFFER
-  PGSF_HCVF_OLD_GROWTH_MGT_UNIT
-  Wildlands
-  PGSF_HCVF_WSSC_100_FT Buffer
-  PGSF_HCVF_ESA
-  PGSF_HCVF_BLUE_LINE_50FT_BUFFER

Description

This 10 acre area is located within Compartment 25 of the Potomac State Forest. Access to this site is by way of the existing haul road and landing located on the west side of the Wallman Road approximately 1/2 mile south of the Rattlesnake Ridge Road and Wallman Road intersection. This stand was regenerated approximately 21 years ago, and has developed into a well stocked mixed hardwood pole timber stand. The stand is dominated by Cherry (62%), and has minor amounts of Sugar Maple (7%), Scarlet oak (7%) and Red Oak (3%). Big-tooth Aspen is present throughout the stand as a very minor component. The stand is overstocked at 115%, containing 91 sq.ft. BA/ac. and 1,040 trees per acre. Due to the overstocked conditions, and the high stump sprout origins of many of the trees, there is only 31 sq. ft. BA/ac. of acceptable growing stock.

The site has a south-eastern aspect, and drains both toward Bradshaw Hollow and the Potomac River drainage system. Underlying soils include: 'Dekalb and Gilpin very stony loams.' and 'Cookport and Ernest very stony silt loams'. These soils are moderately deep and well drained and some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and early in spring. Degree of slope ranges from 0-25% throughout the site. The site has very good productivity for woodland management, with a site index of 75-80 for Red Oak.

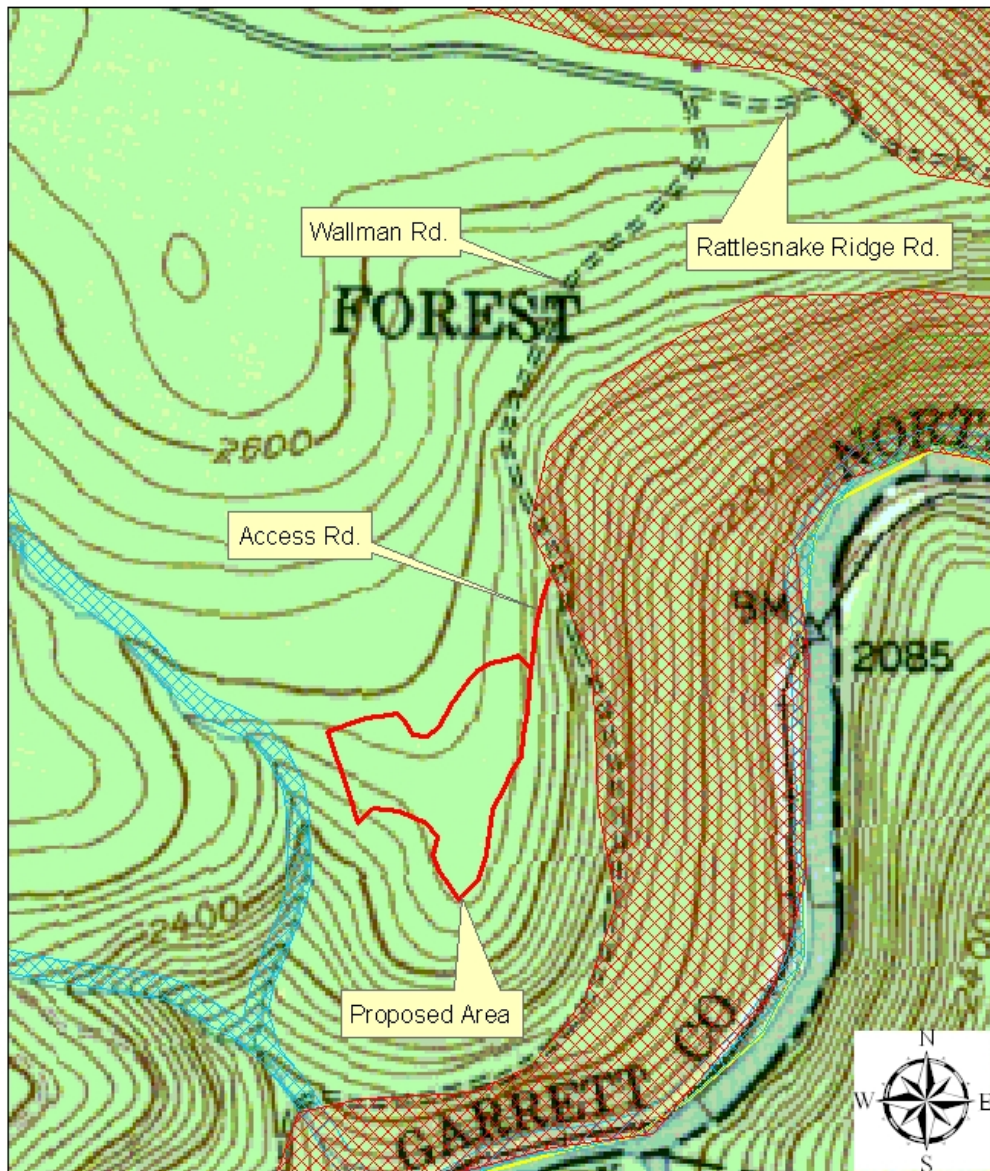
Management and Silvicultural Recommendations

Conduct a timber stand improvement (TSI) practice in the form of a Crop Tree Release. During this operation, approximately 30-60 trees/ac. will be selected as future crop trees. These crop trees will be released from crown competition on all sides. In selecting potential crop trees, emphasis will be given to the release of the few oaks and any other mast producers that are found in limited numbers throughout the stand. Where possible, the aspen will be retained in the stand to provide diversity and to offer wildlife food values as a preferred budding source for grouse. The majority of the crop trees will be Black Cherry.

Due to the relatively small size of the trees to be removed, this practice may be carried out as a fire wood sale. If no commercial operator can be attracted, the work will be done as a non-commercial "timber stand improvement" (TSI) practice whereby the poles may be either cut and left on the forest floor to decay back into the soil or they will be killed and left standing dead using a combination of both girdling (when releasing 'crop trees' of stump sprout origin), and appropriate herbicide application using the hack and squirt method. This Crop Tree Release will hasten the development of the dominant trees in the stand, stimulating the growth, vigor and development of the crop trees, as well as those trees indirectly released on one or two sides.

Compartment 25







FY- 12



Compartment.....25
 Area.....10 Acres
 Species Mix.....Black Cherry
 Size Class.....Poletimber
 Quad.....Gorman

Scale: 1" = 660'

Legend

-  PGSF_HCVF_OLD_GROWTH_300FT_BUFFER
-  PGSF_HCVF_OLD_GROWTH_MGT_UNIT
-  Wldlands
-  PGSF_HCVF_WSSC_100_FT Buffer
-  PGSF_HCVF_ESA
-  PGSF_HCVF_BLUE_LINE_50FT_BUFFER

COMPARTMENT 32 – (Brier Ridge revisited for FY12)

In the FY-11 AWP, this site was proposed for management as one large stand. Use of the area for a Silviculture Training program this summer provided an opportunity to collect additional and more intensive sample data. Closer examination of the inventory data indicated an opportunity to manage the site as two different stands with subtle, but important differences in both overstory composition and understory conditions. As such, we have revisited the proposed management for the site for FY-12, splitting the stand into two stands: Stand “A”, an Allegheny hardwoods stand dominated by Black Cherry, and Stand “B”, considered a Cherry / Mixed oak stand with a manageable (31%) mixed oak component.

Description: Stand “A”

This area is located approx. 2.2 miles south of the intersection of Cranesville Road and Snaggy Mt. Road, within Compartment #32 of the Garrett State Forest. The stand fronts on the Snaggy Mt. Road, and contains two roadside campsites. The lower slopes to the north of the tract extend to the High Conservation Value Forest (HCVF) established around Murley Run which harbors: deer wintering areas, wetlands of special state concern, various threatened and endangered plants, and historic bobcat dens. This site has a northern aspect and falls within the Murley Run watershed; part of the Youghiogheny River drainage system.

Stand “A” consists of a 47- acre immature Allegheny hardwood stand made up primarily of Black Cherry (57%) and Red Maple (27%) and Mixed Oaks (15%). This stand is over stocked at 81% relative density and contains 154 sq.ft. BA/acre. Much of the cherry in the stand is infected with ‘Black Knot’, a stem canker disease caused by the fungus *Dibotryon morbosum*. While this disease is not generally a killer of trees, the resulting cankers weaken the bole making trees susceptible to wind and snow damage. The cankers also degrade the timber value of the tree. Due largely to overcrowded growing conditions, and the abundant black knot cankers, trees of acceptable quality for future growing stock are inadequate to provide a fully stocked stand in themselves.

Typical of overstocked, mature stands, the understory is poorly developed, with less than 25% of the understory containing sufficient established regeneration. Ferns, grasses and creeping dewberry are prominent on the forest floor to the extent of being an impediment to regeneration in over 55% of stand. In addition 70% of the stand contains a dense understory of woody stems including Red Maple, Hawthorn, and Serviceberry that restrict light from reaching the forest floor, further hindering desired seedling development.

Underlying soils include: ‘Dekalb and Gilpin very stony loams’ and ‘Stony land’. These soils are moderately deep and well drained. Near the base of the slope can be found some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and early in spring. Degree of slope ranges from 0-25% throughout the site. The site has very good productivity for woodland management, with a site index of 80 for Black Cherry.

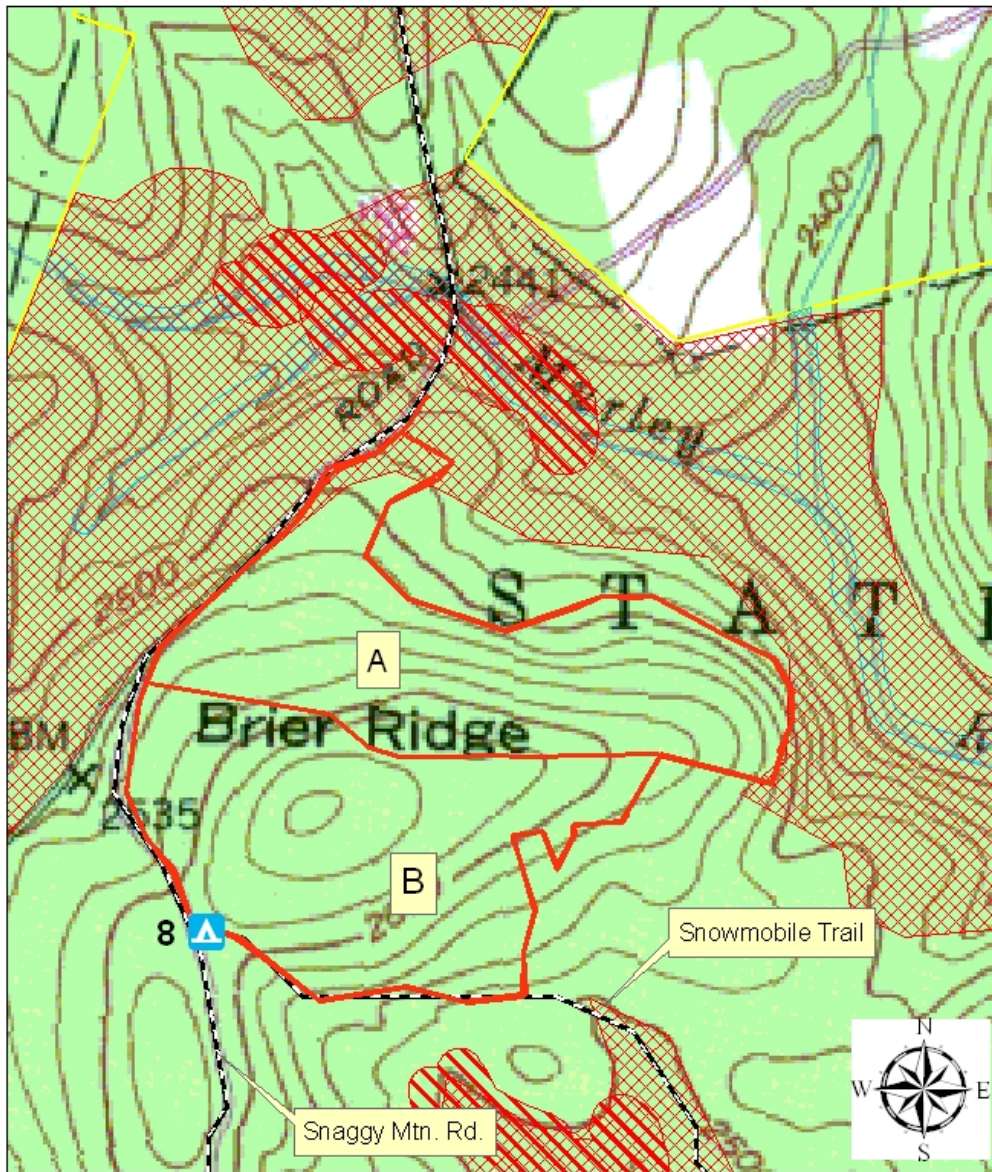
Management and Silvicultural Recommendations:

The proposed silvicultural treatment for this site is to regenerate it using a Two Stage Shelterwood System. The first 'stage' of this regeneration system will serve as a Conditioning/Seed Cut in which the stand will be left in a condition well suited to the development of a fully stocked seedling understory. To do this, the stand will be thinned to approx. 90-100 sq.ft. BA/ac. Emphasis will be placed on the harvest of heavily cankered cherry trees and other unacceptable growing stock leaving the best quality trees to serve as a seed source. As this thinning will concentrate on retention of the best and largest trees for seed production, the harvest will only yield approx. 2-3,000 bd.ft./acre of low grade timber making the sale just merchantable in today's market conditions. In addition to the harvest thinning, the interfering understory must be controlled to reduce the dense shade and competition below the main canopy. This will be accomplished with a combination of low volume broadcast spraying of an appropriate herbicide to kill back the aggressive fern and grass competition that has developed on the forest floor. This will be combined with direct stem applications of herbicide to individual interfering saplings using cut surface treatments.

This initial conditioning/seed cut treatment will thin the stand through the entire canopy layer allowing sunlight to reach the forest floor, thereby producing conditions suitable for seed germination as well as development of existing seedling stock. Once sufficient advanced regeneration is accounted for (approx. 5-10 years), the stand will be reevaluated, with the expectation of applying the 'second stage' of this system. The planned, second stage of this system would call for a "liberation cut" to release the newly developed seedling stand from overhead competition.

DNR Natural Heritage biologist will assist with field delineating the HCVF, to assure adequate protection of the resources within this zone. To assure public safety, the three roadside campsites adjacent to the site will be closed during the harvest; campers will be directed to use one of the 50 other sites available on the state forest. A 100 ft. buffer will be maintained around the campsites.

Compartment 32_A FY-12



Compartment.....32
 Area.....47
 Species Mix.....Black Cherry / Maple
 Size Class.....Med / Lg. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

- Legend**
-  PGDF_HCVF_OLD_GROWTH_300FT_BUFFER
 -  PGDF_HCVF_OLD_GROWTH_MGT_UNIT
 -  Wetlands
 -  PGDF_HCVF_JWD300_100_FTEUR
 -  PGDF_HCVF_BSA
 -  PGDF_HCVF_BLUE_LINE_SOFT_BUFFER

COMPARTMENT 32 – (Brier Ridge revisited for FY12)

In the FY-11 AWP, this site was proposed for management as one large stand. Use of the area for a Silviculture Training program this summer provided an opportunity to collect additional and more intensive sample data. Closer examination of the inventory data indicated an opportunity to manage the site as two different stands with subtle, but important differences in both overstory composition and understory conditions. As such, we have revisited the proposed management for the site for FY-12, splitting the stand into two stands: Stand “A”, an Allegheny hardwoods stand dominated by Black Cherry, and Stand “B”, considered a Cherry / Mixed oak stand with a manageable (31%) mixed oak component.

Description: Stand “B”

This area is located approx. 2.2 miles south of the intersection of Cranesville Road and Snaggy Mtn. Road, within Compartment #32 of the Garrett State Forest. The stand fronts on the Snaggy Mtn. Road, and contains one roadside campsite. The lower slopes to the south of the tract extend to the Snaggy Mtn. snowmobile trail. This site has a south aspect and drains to an unnamed tributary of Herrington Creek, part of the Youghiogheny River drainage system.

Stand “B” consists of a 45 acre immature Cherry / Mixed Oak stand made up primarily of Black Cherry (42%), Mixed Oaks (31%) and Red Maple (18%) This stand is over stocked and contains 162 sq.ft. BA/acre. As in Stand A, much of the cherry in the stand is infected with ‘Black Knot’, a stem canker disease caused by the fungus *Dibotryon morbosum*. While this disease is not generally a killer of trees, the resulting cankers weaken the bole making trees susceptible to wind and snow damage. The cankers also degrade the timber value of the tree.

Typical of overstocked, mature stands, the understory is poorly developed, with less than 43% of the understory containing sufficient established regeneration and that being Cherry or Red Maple, with virtually no established oaks. Ferns, grasses and creeping dewberry are prominent on the forest floor to the extent of being an impediment to regeneration in over 63% of stand. In addition 74% of the stand contains a dense understory of woody stems including Red Maple, Hawthorn, and Serviceberry that restrict light from reaching the forest floor, further hindering desired seedling development. The main difference in the conditions of this stand and Stand A, is the presence of a significant oak component in the overstory (31% of the Basal area is mixed oak species). However there are no oak seedlings developing on the forest floor to serve as the next generation.

Underlying soils include: ‘Dekalb and Gilpin very stony loams’ and ‘Stony land’. These soils are moderately deep and well drained. Near the base of the slope can be found some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and early in spring. Degree of slope ranges from 0-25% throughout the site. The site has very good productivity for woodland management, with a site index of 80 for Black Cherry.

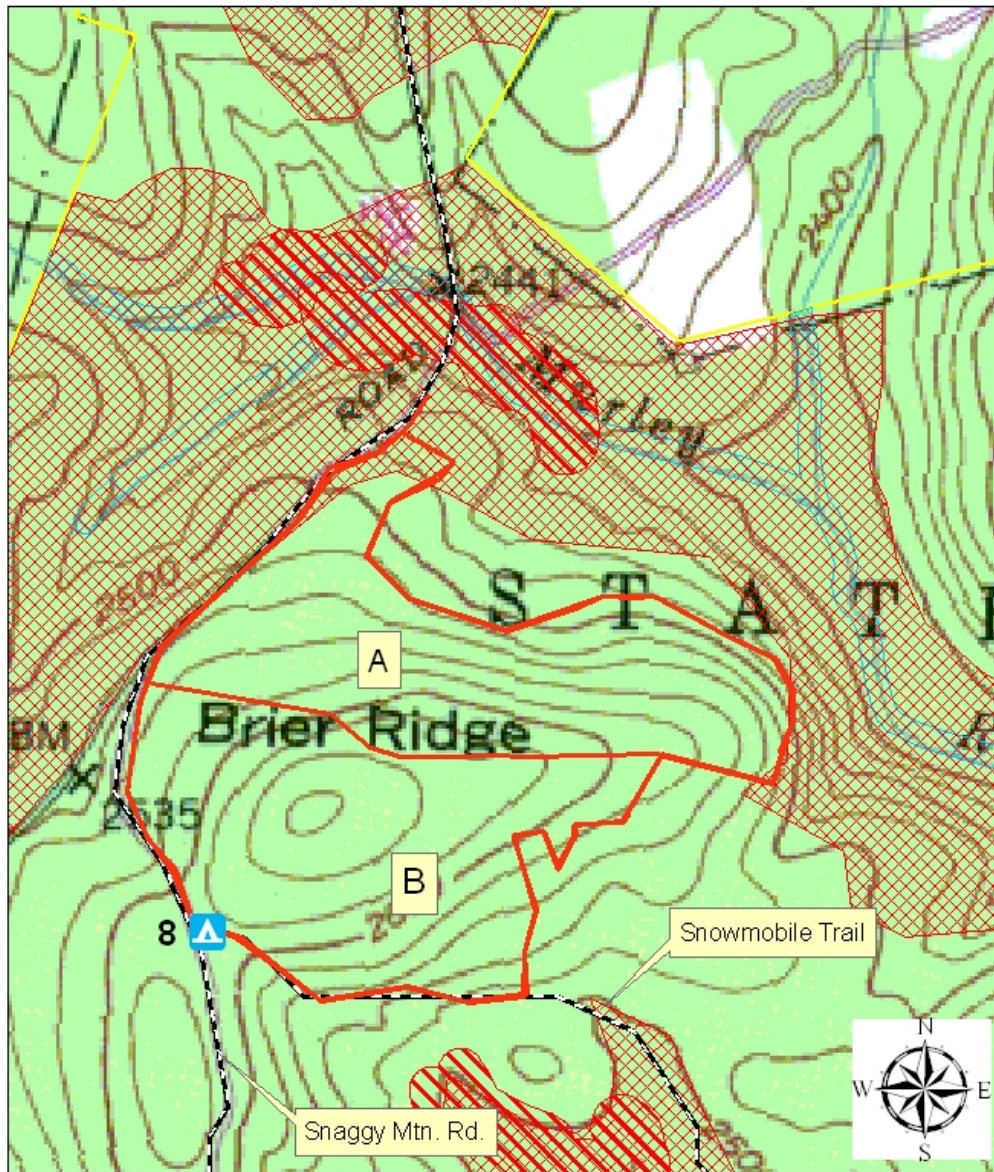
Management and Silvicultural Recommendations:

The proposed silvicultural treatment for this site is simply to allow it to continue to grow as is. If treated the same as Stand A at this time, the stand will most likely transition into an Allegheny hardwoods stand dominated by Black Cherry and Maple, and the mixed oak component will likely be lost.

Forest management staff will monitor the stand for a heavy acorn crop, at which time the stand will be evaluated for appropriate measures to assure highest oak regeneration potential.

Compartment 32_B







FY-12



Compartment.....32
 Area.....45
 Species Mix.....Cherry/ Mixed Oak
 Size Class.....Med / Lg. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

Legend

-  PGDF_NOVF_OLD_GROWTH_300FT_BUFFER
-  PGDF_NOVF_OLD_GROWTH_MGT_UNIT
-  Wetlands
-  PGDF_NOVF_JWD30_100_FTEUR
-  PGDF_NOVF_BSA
-  PGDF_NOVF_BLUE_LINE_SOFT_BUFFER

COMPARTMENT 33 (A)-Trail Cherry

FY-12

Description:

This area is located within Compartment #33 of the Garrett State Forest. It sits east of Herrington Manor Road, and is accessed by the 'Handicapped Hunter Access Road' 1/2 mile north of Herrington Creek. The site fronts on the 5-1/2 Mile Hiking Trail. This gently sloping Allegheny Hardwoods stand has a southwestern aspect and extends down to the High Conservation Value Forest (HCVF) associated with the Herrington Creek drainage. This HCVF area includes a 'wetland of special State concern' and the Herrington Springs Natural Area which contain various threatened and endangered plants, a deer wintering area, wildlife openings, and the globally rare Frantz's Cave Amphipod. This site drains to an unnamed tributary in the Herrington Creek watershed; part of the Youghiogheny River drainage system.

This site consists of a 32 acre mature Allegheny Hardwoods stand made up primarily of Black Cherry (52%), White Oak (29%), and Red Maple (12%). This stand is fully stocked at 76% relative density (approx.60%RD being optimum growing conditions in this stand) and contains 126 sq.ft. BA/acre. Trees of acceptable quality for future growing stock do provide a fully stocked stand in themselves.

The understory is poorly developed, with only 26% of the site containing sufficient competitive regeneration to provide for successful development of the next stand, competitive oak regeneration is virtually nonexistent. The sparse advanced regeneration is due in part to the high percentage of interfering plant competition present in the understory; 46% of the site contains problematic fern and/or grass populations, and 95 % of the site contains a well developed lower level canopy of various hardwoods (primarily Red Maple and Hawthorn) that cast dense shade on the forest floor, thereby interfering with and impeding seedling development. Deer browse impact on the present stand is estimated to be moderate-high, with expected impact on future regeneration efforts being high based on witnessed impacts to near-by regenerated stands. The existing advanced regeneration is insufficient for natural regeneration at this time.

Underlying soils include: 'Dekalb and Gilpin very stony loams.' These soils are moderately deep and well drained and some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and early in spring. Degree of slope ranges from 0-25% throughout the site. The site has very good productivity for woodland management, with a site index of 75-80 for Red Oak.

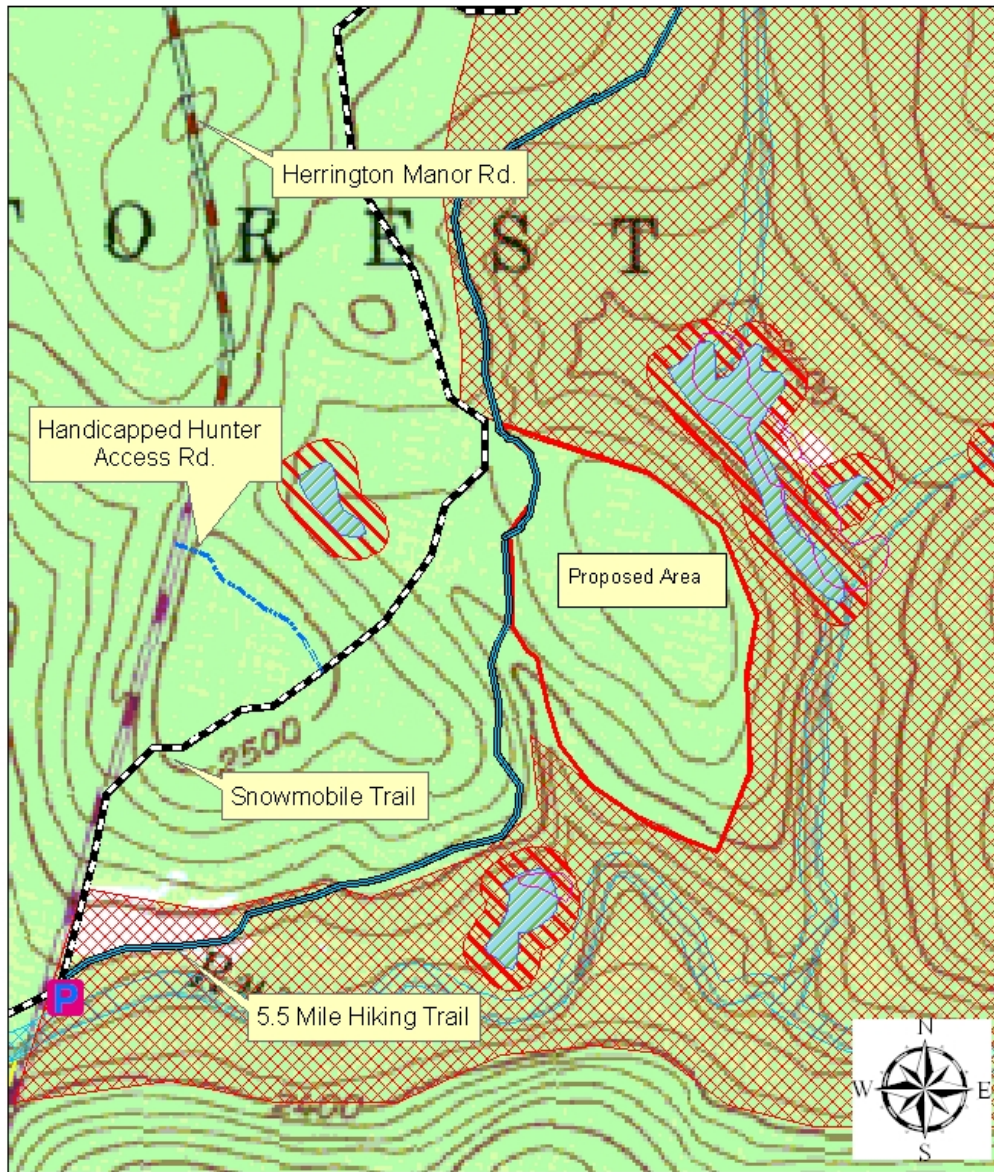
Management and Silvicultural Recommendations:

The proposed silvicultural treatment for this stand is to begin a regeneration sequence using a Two-step Shelterwood method. The first step of the shelterwood sequence will involve reducing those plants interfering with the development of seedling regeneration; in this case, the ferns and grasses on the forest floor, as well as the lower canopy layer of Red Maple and Hawthorn. The fern and grass competition will be controlled by means of low volume, broad cast spraying of an appropriate herbicide (likely a glyphosate product), while the woody stems will be controlled by a combination of felling with the cut surface of the stump treated with herbicide to prevent sprouting, and/or direct application of herbicide applied using 'hack and squirt' injections to the individual trees being controlled. The relative density of the stand will be reduced to 60%. This work will be done as a 'thinning from below' where by the trees removed will come from the lower diameter classes. Removals will include nearly all of the stems between 1-10 inches DBH, as well as approx. 1 out of 8 trees in the sawtimber size classes. As most of the impeding hardwoods are in the smaller size classes, this treatment will result in removal of approx. 2 cords per acre which is insufficient volume to support a commercial sale. Therefore all trees cut will be left on the forest floor to serve as impediment to deer browsing of the developing regeneration.

A 100 ft. buffer will be maintained along the hiking trail, and informational signage will be developed and posted along the trail to help educate and inform forest visitors about this resource management work.

These combined treatments are expected to cost approximately \$150-\$200/ acre, or \$4,700-\$6,400 total. This up front investment will insure the future successful regeneration of this economically and ecologically valuable hardwood stand. Without addressing these understory conditions, this stand will continue to transition toward a Red Maple dominated stand lacking the valuable mast producing and economically important Cherry and White Oak components.








Compartment 33- A FY-12



Compartment.....33
 Area.....32 Acres
 Species Mix.....Black Cherry
 Size Class.....Med / Lg. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

Legend

-  PGSF_HC_VF_OLD_GROWTH_300FT_BUFFER
-  PGSF_HC_VF_OLD_GROWTH_MGT_UNIT
-  Wetlands
-  PGSF_HC_VF_WSSC_100_FT_BUFFER
-  PGSF_HC_VF_BLUE_LINE_50FT_BUFFER
-  PGSF_HC_VF_BSA
-  PGSF_wetlands

COMPARTMENT 33 (B) Handicapped Hunter Area FY-12

Description:

This 20 acre area is located on the east side of Herrington Manor Road, at the 'Handicapped Hunter Access Road', 1/2 mile north of Herrington Creek, within Compartment #33 of the Garrett State Forest. The site fronts on the Herrington Manor Road and backs to the State Forests snowmobile trail. The access road splits the site into two stands both of which were thinned in 1996. The northern most stand is a 9-acre Allegheny Hardwoods stand, with a north aspect and extends down slope to the buffer of the High Conservation Value Forest (HCVF) which protects a wetland of special state concern. The 10 acre stand to the west of the access road is higher up on the hill and is an immature mixed oak stand. This site drains toward small forested wetland at the toe of the slope which is drained by an unnamed tributary in the Herrington Creek watershed; part of the Youghiogheny River drainage system.

The immature mixed oak stand is made up primarily of White Oak (57%), Red Maple (22%) and Black Cherry (17%). The stand is fully stocked, at 83% relative density and 102 Sq.Ft. of BA/ac. which is above optimum level for best tree growth.

The understory of the oak site is not well developed, with only 30% of the site containing competitive regeneration; this is likely result of the considerable interfering plant competition, in the forms of tall woody material (Red Maple saplings and poles in the lower canopy layer) and significant fern cover, both shading the forest floor thereby interfering with desirable seed germination.

The Allegheny hardwood stand is dominated by Black Cherry (52%), Red Maple (23%), and White oak (12%). This stand is fully stocked at 72% and contains 85 sq.ft.BA/ac. However, there are not enough trees of acceptable growing stock to make up a fully stocked stand in themselves.

The well established understory of this site is diverse and contains a considerable amount of shrub and small tree regeneration; Hawthorn and Arrow wood Viburnum, as well as that of overstory species, mainly Red Maple and Black Cherry. Two non-native invasive species were noted in the inventory both Multiflora Rose and Japanese Barberry are present and should be addressed in future management efforts as stand manipulation may result in increases of these invasive species.

Deer browse impact on the site is estimated to be moderate, and must be considered in any regeneration efforts on this site. The existing advanced regeneration in the Allegheny hardwoods stand is sufficient for natural regeneration under the existing conditions.

Underlying soils include: 'Dekalb and Gilpin very stony loams'. These soils are moderately deep and well drained and some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and early in spring. Degree of slope ranges from 0-25% throughout the site. The site has fair to good productivity for woodland management, with a site index of 60 for White oak in the upper slopes, and SI of 70 for Black Cherry lower on the slope.

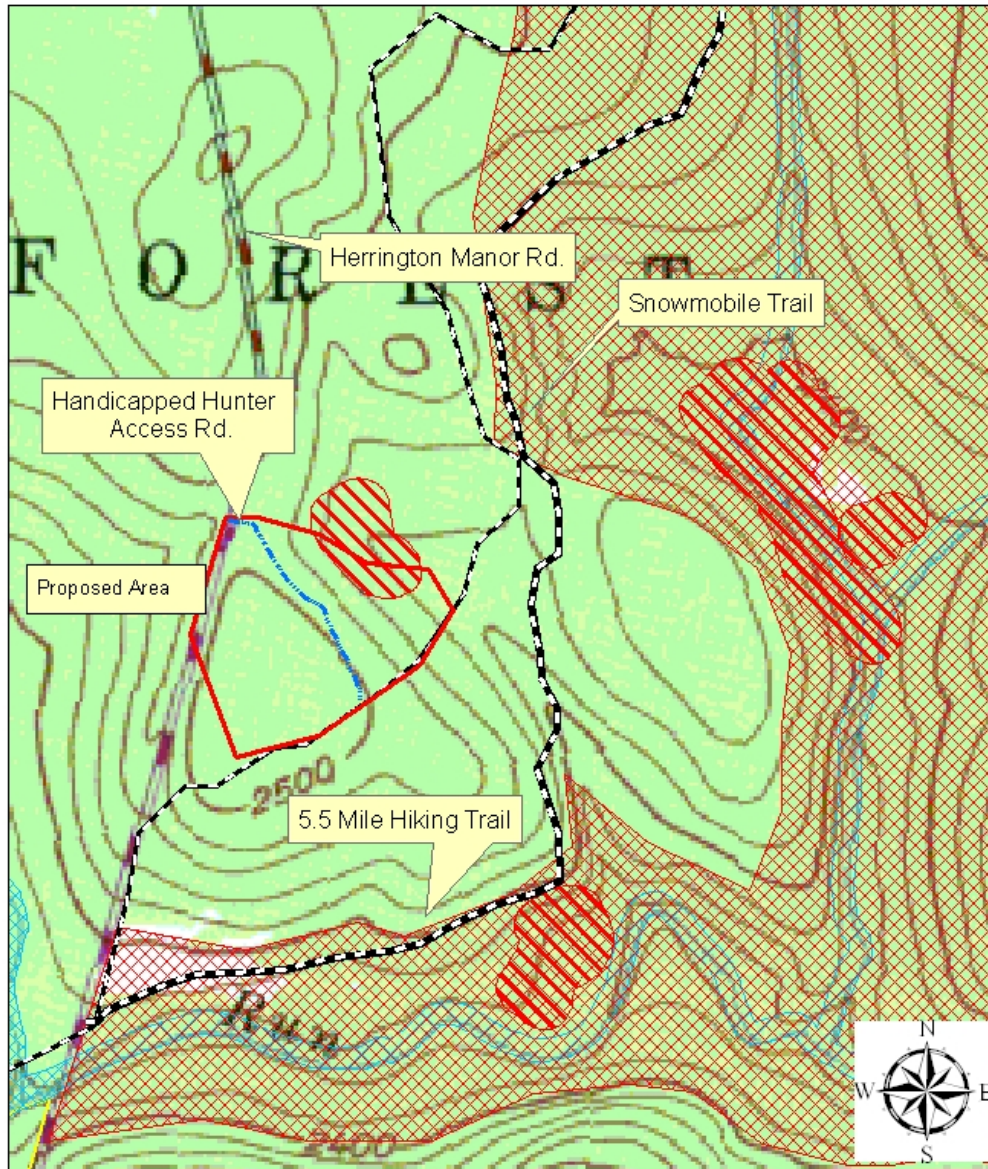
Management and Silvicultural Recommendations:

The proposed silvicultural treatment for the Alleghany hardwoods portion of this site is to regenerate using the clear-cut method. In this case, the present main stand shall be harvested. Where possible, islands varying from 8-12 healthy, dominant or co-dominant trees and associated understory shall be retained for each two acres of this harvested area. Particular emphasis shall be placed on retaining groups of dominant and co-dominant mast producers as well as any live den trees. All other trees greater than 2 inches DBH shall be cut. The roadside buffer will be thinned to 60% stocking in order to continue to provide an aesthetic visual buffer along the County road, while allowing optimum growing conditions for the residual trees. The stand will be monitored for undesirable regeneration of non-native invasive species as Multiflora Rose and Japanese Barberry were noted in the stand inventory.

This practice will “liberate” existing desirable competitive regeneration from overhead competition, thereby allowing them to further develop into a fully stocked stand. The resulting stand will likely have a well stratified canopy with a good mix of woody shrubs, small trees and developing hardwoods making up the next stand.

The proposed treatment for the upland oak site, is to thin the stand “from below” removing approx. 30 sq.ft.BA/ac.from the pole and small saw timber sized trees, reducing stocking to an optimum 60% . This light thinning, could not stand as a commercial sale on its own, but by combining this thinning with the regeneration cut below the access road, this smaller diameter oak stand will receive the benefits of this Timber Stand Improvement practice, allowing the best trees to fully occupy this site.







Compartment 33- B FY - 12



Compartment33
 Area.....20 Acres
 Species Mix.....Mixed Oak/ Black Cherry
 Size Class.....Med./ Lg. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

Legend

-  PG&F_HCVF_OLD_GROWTH_300FT_BUFFER
-  PG&F_HCVF_OLD_GROWTH_MGT_UNIT
-  wildlands
-  PG&F_HCVF_WSSC_100_FTBuffer
-  PG&F_HCVF_ESA
-  PG&F_HCVF_BLUE_LINE_50FT_BUFFER

COMPARTMENT 39 (A) Swallow Falls Rd.

FY-12

Description:

This area is located approx. 1/2 mile east of the intersection of Swallow Falls Road and Mellot Road, within Compartment #39 of the Garrett State Forest. The stand fronts on the Swallow Falls Road and is situated outside of any HCVF areas as identified by the Department for special management focus. This site has a north aspect and falls within the Toliver Run watershed; part of the Youghiogheny River drainage system.

This site consists of a 22 acre mature Allegheny Hardwoods stand made up primarily of Black Cherry (37%), Red Maple (36%), White Oak (15%), and Northern Red Oak (5%). This stand is over stocked at 82% relative density (approx. 60% RD being optimum growing conditions in this stand) and contains 144 sq.ft. BA/acre. Much of the Black Cherry in this stand is infected with black knot, a stem canker disease that seriously affects stem quality, and a tree's ability to withstand storm conditions. Trees of acceptable quality for future growing stock provide a fully stocked stand in themselves.

The understory is only moderately developed, with approximately 63% of the site containing sufficient competitive regeneration to provide for successful development of the next stand, though competitive oak regeneration is virtually nonexistent. This is due in part to the high percentage of interfering plant competition present in the understory; 40% of the site contains problematic fern and/or grass populations, and 70% of the site contains a well developed lower level canopy of various hardwoods that cast a dense shade on the forest floor, thereby interfering with and impeding seedling development. Deer browse impact on the present stand is estimated to be moderate-high, with expected impact on future regeneration efforts being high based on witnessed impacts to adjacent regenerated stands, heavy deer trails through the stand leading to adjacent crop fields, and the close proximity to Swallow Falls State Park no hunting zones. The existing advanced regeneration is sufficient for natural regeneration only if protected from deer browsing.

Underlying soils include: 'Dekalb and Gilpin very stony loams'. These soils are moderately deep and well drained and some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and early in spring. Degree of slope ranges from 0-25% throughout the site. The site has excellent productivity for woodland management, with a site index of 75-80 for Black Cherry.

Management and Silvicultural Recommendations:

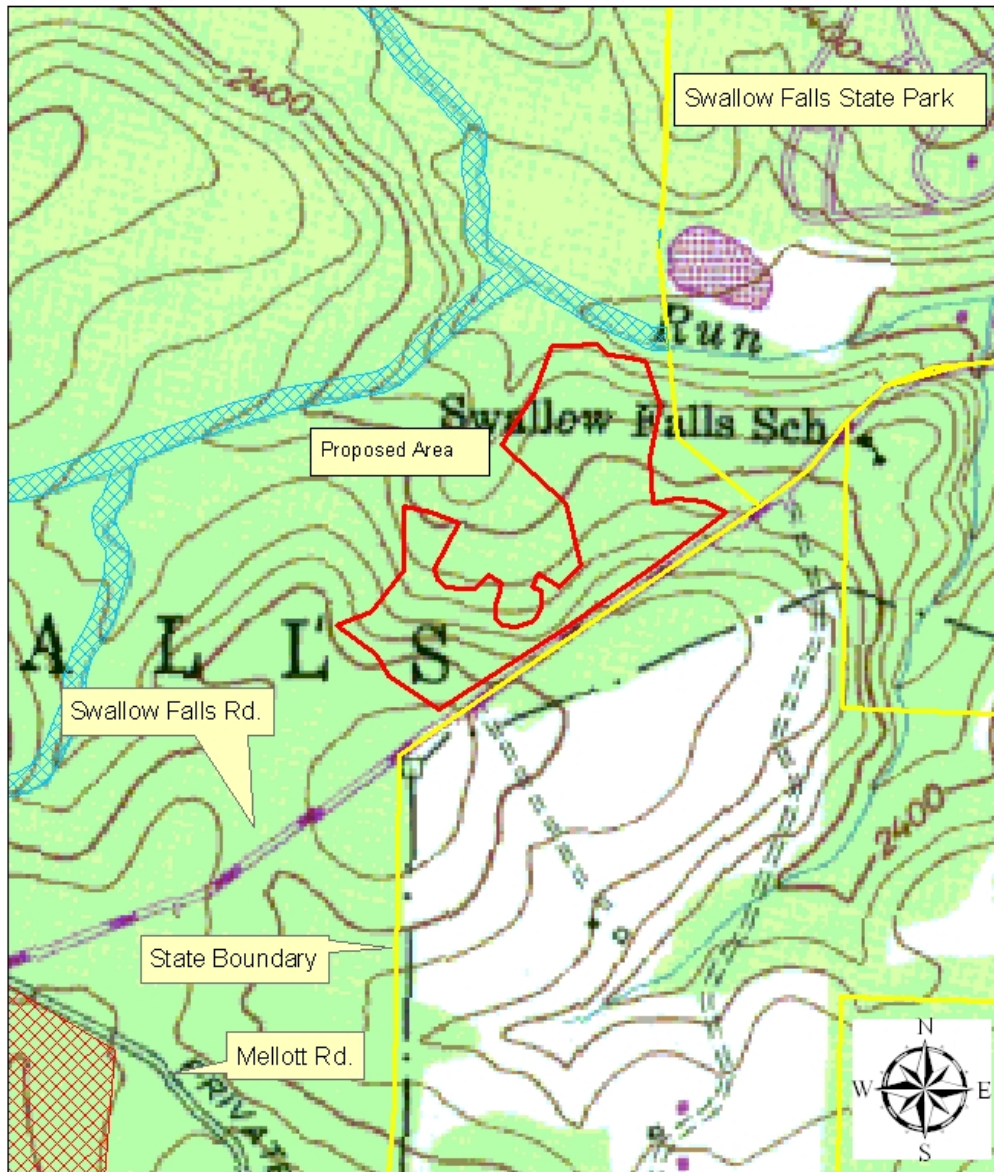
The proposed silvicultural treatment for this stand is to regenerate using the clear-cut with variable retention method. In this case, the present main stand shall be harvested. Where possible, islands varying from 8-12 healthy, dominant or co-dominant trees and associated understory shall be retained for each 2 acres of this harvested area. Particular emphasis shall be placed on retaining groups of dominant and co-dominant oaks as well as any live den trees. All other trees greater than 2 inches DBH shall be harvested. Red Maple saplings and poles dominate the lower canopy layer, 2 to 1 over Cherry and any other desired species indicating the likely transition toward a stand dominated by Red Maple. In order to maintain a more diverse stand with greater wildlife values, during the harvest, 1/2 of the Red Maple stumps will be treated

with herbicide to prevent sprouting, allowing the Cherry and Oaks more room to grow, and thereby producing species composition of the original stand.

As regeneration is only moderately provided at present, the site will be fenced to prevent seedling and sprout losses due to deer browsing. Only with fencing in place are existing regeneration levels expected to provide a fully stocked stand. As competitive mixed oak regeneration is lacking, oak trees will be favored in retention areas in order to maintain future oak component in the next stand. Additionally, following harvest, 30 White and/or Red Oak seedlings will be planted per acre in order to provide for a 20-30% mixed oak component in the later stages of stand development.







These practices will “liberate” existing desirable competitive regeneration from overhead competition, thereby allowing them to further develop into a fully stocked stand similar in composition to the present mature stand. The stand will be monitored for successful regeneration, and once a fully stocked stand has been grown to the point of being able to withstand deer impacts, the fencing will be removed.

Compartment 39-A FY - 12



Compartment39
 Area.....22 Acres
 Species Mix.....Black Cherry
 Size Class.....Med./ Lg. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

- Legend**
-  PGSF_HCVF_OLD_GROWTH_300FT_BUFFER
 -  PGSF_HCVF_OLD_GROWTH_MGT_UNIT
 -  Wldlands
 -  PGSF_HCVF_WSSC_100_FTBuffer
 -  PGSF_HCVF_ESA
 -  PGSF_HCVF_BLUE_LINE_50FT_BUFFER

COMPARTMENT 39 (B) Cranesville Rd. FY-12

Description:

This area is located approx. 0.8 mile south of the intersection of Cranesville Road and Snaggy Mtn.Road, within Compartment #39 of the Garrett State Forest. The stand fronts on the Cranesville Road and is situated just outside of a HC VF area as identified by the Department with management objectives focused on the protection of the rare Mountain Earth Snake, the Coal Skink, various threatened and endangered plants as well as as the associated bog communities and a deer wintering area. This hill top site has a north aspect and falls within the Toliver Run watershed; part of the Youghiogeny River drainage system.

This 16 acre site consists of an 11 acre mixed oak/maple stand along with 5 acres of Allegheny hardwoods on the northern end of the stand. The entire stand had been thinned in 1999. This thinning served as the first stage of a two-stage shelterwood regeneration system. The oak stands overstory is made up primarily of Red Maple (48%), White Oak (15%), and other mixed oaks which account for an additional (17%). While the Alleghany hardwood stand is dominated by Red Maple (63%), Sugar Maple (15%) and Mixed oaks (17%). These stands are not fully stocked, containing only 47% relative density and containing 63 sq.ft. BA/acre, offering the overstory more than enough room to grow.

The understory of the oak site is moderately developed, with approximately 71% of the site containing sufficient competitive regeneration to provide for successful development of the next stand: 68% of the site is stocked with competitive oak regeneration, indicating that the initial shelter wood seed cut was successful in establishing a new oak cohort which is ready for release. The initial shelterwood seed cut not only allowed for the development of competitive oak seedlings, but also created conditions for the growth and establishment of undesirable species (with regards to oak establishment - primarily Red Maple and Black Birch) that are out competing the oak for growing space. This 'woody interference' is found on nearly 93% of the site and should be addressed to assure successful release and establishment of the oak seedlings.

The understory of the Alleghany Hardwoods site is also moderately developed, with approximately 75% of the site containing sufficient competitive regeneration to provide for successful development of the next stand: regeneration on this site is dominated by Red Maple, Sugar Maple, Black Cherry and Black Birch.

Deer browse impact on the present stand is estimated to be moderate, and must be considered in any regeneration efforts on this site. The existing advanced regeneration is sufficient for natural regeneration under the existing conditions.

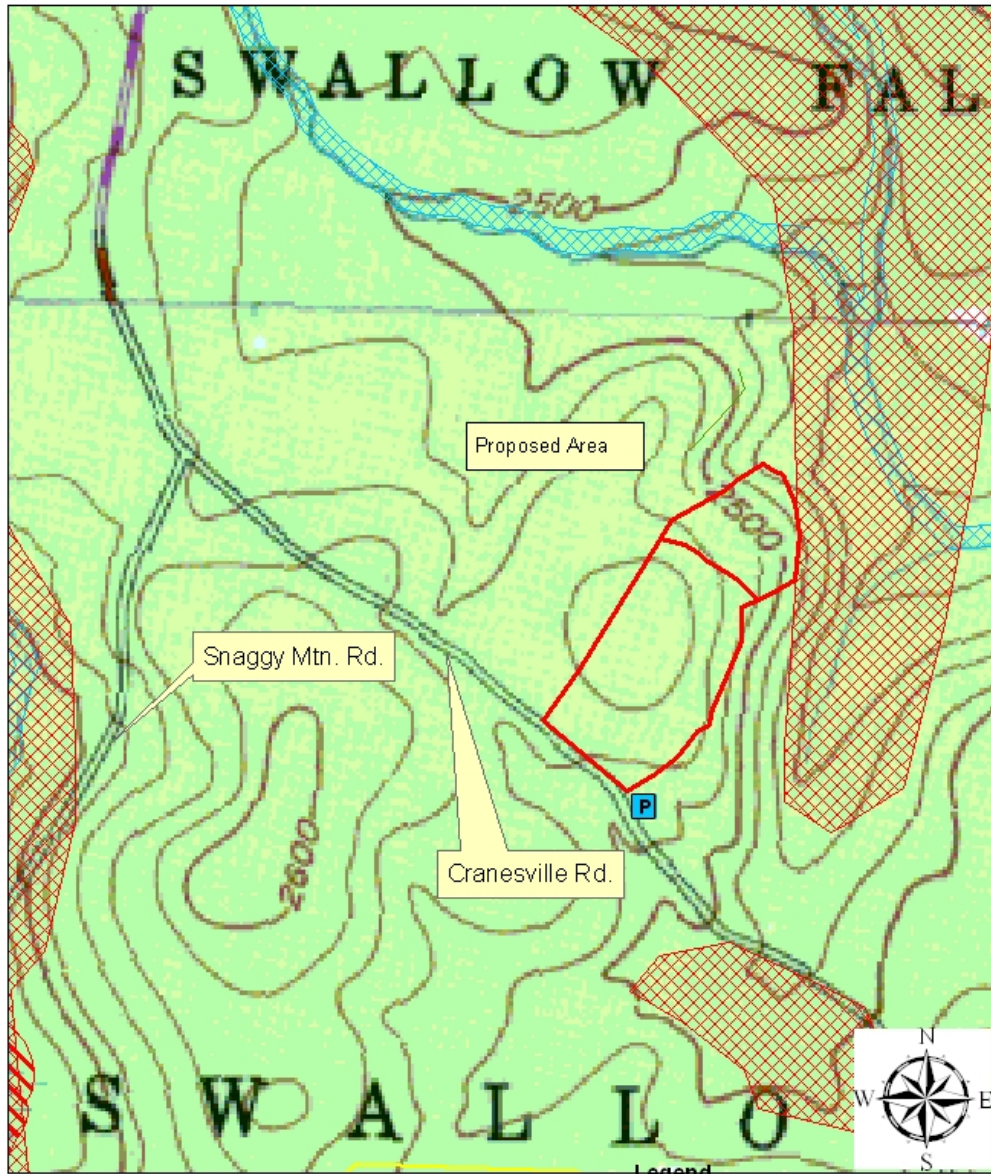
Underlying soils include: 'Dekalb and Gilpin very stony loams'. These soils are moderately deep and well drained and some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and early in spring. Degree of slope ranges from 0-25% throughout the site. The site has fair to good productivity for woodland management, with a site index of 50-60 for Red Oak.

Management and Silvicultural Recommendations:

The proposed silvicultural treatment for this stand is to carry out the second stage of the shelter wood system by completing a liberation cut. This harvest will involve the clear cutting of the remaining overstory trees to “liberate” the established regeneration from overhead competition. A variable retention approach will be used whereby, islands ‘varying’ from 8-12 healthy, dominant or co-dominant trees and the associated understory, shall be retained for each 2 acres of this harvested area. Particular emphasis shall be placed on retaining groups of dominant and co-dominant oaks as well as any live den trees. All other trees greater than 2 inches DBH shall be harvested as part of the liberation effort.

As desired competitive oak regeneration is only moderately provided at present, the harvest will be managed to retain all top wood from sawlogs, as well as to not trim down these tops and lops during the logging process. The resulting thicket of tops will serve as a natural impediment to browsing deer and will help protect the competitive oak seedlings. These practices will “liberate” existing desirable competitive regeneration from overhead competition, thereby allowing them to further develop into a fully stocked stand. Delaying this harvest will result in the loss of these established and competitive oak seedlings, and the eventual loss of the Mixed oak component of this stand.

Compartment 39-B FY - 12



Compartment39
 Area..... 16 Acres
 Species Mix.....Mixed Oak/Cherry
 Size Class.....Med. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

- Legend**
- line_gen
 - PGSF_HCVF_OLD_GROWTH_300FT_BUFFER
 - PGSF_HCVF_OLD_GROWTH_MGT_UNIT
 - Wildlands
 - PGSF_HCVF_WSSC_100_FT Buffer
 - PGSF_HCVF_ESA
 - PGSF_HCVF_BLUE_LINE_50FT_BUFFER

COMPARTMENT 43 (A) Kindness Demo FY-12

This site is located within Compartment 43 of the Garrett State Forest within the Kindness Demonstration Forest. The area is accessed by way of an existing forest access road that serves as a Handicapped Hunter Access Road. The site is located on gently sloping ground with a west/southwest aspect and is drained by an unnamed tributary to Chisholm Run, part of the Youghiogheny River drainage system.

The site consists of a 8.5 acre immature, mixed hardwood stand made up primarily of Scarlet Oak (26%), White Oak (21%), Northern Red Oak (13%) and Red Maple (13%). This stand had been thinned in 2004, as the first stage of a Two-Stage Shelterwood Regeneration System. The thinning was applied to provide conditions suitable for the development of a well stocked seedling/sapling understory. Current inventory indicates that there is sufficient desired regeneration to carry out the next step in this regeneration system. Presently 65% of the site contains competitive oak seedlings, and 90 % of the stand contains some desirable competitive hardwoods. The main stand is presently fully stocked at 64% relative density and contains 76 sq.ft. BA/acre offering optimum growing conditions for the residual overstory, but providing significant shade and competition to the developing understory below.

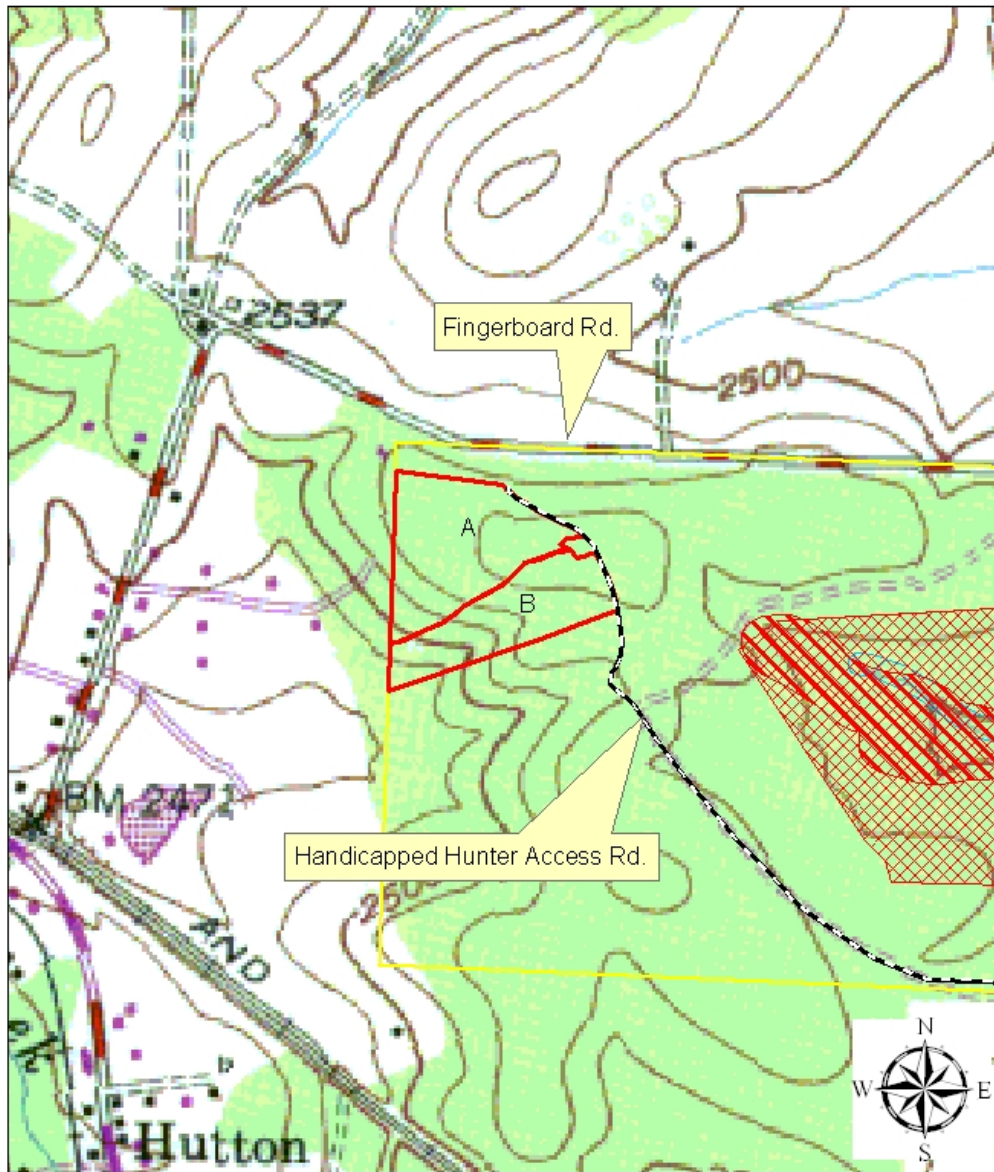
Underlying soils include 'Dekalb and Gilpin very stony loams'. The Dekalb soils are moderately deep and well drained with only slight equipment limits due to slope. Degree of slope ranges from 5-25% throughout the site. The productivity of the site is good with site index of 65 for White Oak.

Silvicultural Recommendations:

The proposed silvicultural treatment for this stand is to complete the planned second stage of the initial Two-stage shelterwood system. In this case, the well-developed understory shall be "liberated" or released from the overstory competition by means of a clear cut harvest with residuals retained. The main stand shall be harvested while retaining islands of 8-12 dominant and/or co dominant trees per each Two acres. Particular emphasis shall be placed on retaining live den trees, various oaks and other mast producers. Regeneration is accounted for in the form of the well developed understory of competitive advanced regeneration which will be further supplemented through seedling development and vegetative reproduction from stump sprouts.

This practice will provide for the liberation/release of the well developed competitive oak seedlings from overstory competition. The resulting stand will be comprised of healthy and vigorous seedling-sapling, mixed oak stand, interspersed with larger mature trees providing additional habitat needs of cavity/nesting sites and mast production among this early successional stage stand.

Compartment 43-A FY - 12



Compartment.....43
 Area.....8.5 Acres
 Species Mix.....Mixed Oak
 Size Class.....Med / Lg. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

- Legend**
- PGDF_RCVF_OLD_GROWTH_300FT_BUFFER
 - PGDF_RCVF_OLD_GROWTH_MGT_UNIT
 - Willards
 - Proposed Management Area
 - PGDF_RCVF_WSDC_100_FTEUR
 - PGDF_RCVF_BDA
 - PGDF_RCVF_BLUE_LINE_SOFT_BUFFER

COMPARTMENT 43 (B) Kindness Demo FY-12

This site is located within Compartment 43 of the Garrett State Forest within the Kindness Demonstration Forest. The area is accessed by way of an existing forest access road that serves as a Handicapped Hunter Access Road. The site is located on gently sloping ground with a west/southwest aspect and is drained by an unnamed tributary to Chisholm Run, part of the Youghiogheny River drainage system. The site consists of a 6.5 acre mature, mixed hardwood stand made up primarily of Scarlet Oak (43%), White Oak (19%), Northern Red Oak (18%) and Red Maple (19%). The main stand is presently overstocked at 102% relative density and contains 123 sq.ft. BA/acre, well above optimum growing conditions for best individual tree growth.

The understory is moderately developed with 55% of the site containing sufficient established regeneration to begin natural regeneration of the site. Interfering sapling cover and undesirable regeneration including Red Maple on this predominantly mixed oak site, serve as an impediment to further development of existing oak regeneration. Deer impact/browse pressure varies between low and moderate as indicated by the presence of desired oak regen and the variety of herbaceous plants on the forest floor. This variable impact is largely a factor of the large amounts of available browse in the adjoining harvest sites, as well as neighboring landowners private land deer herd control efforts. Deer pressure must be taken into consideration for any future oak management on this site.

Underlying soils include 'Dekalb and Gilpin very stony loams'. The Dekalb soils are moderately deep and well drained with only slight equipment limits due to slope. Degree of slope ranges from 5-25% through out the site. The productivity of the site is good with site index of 65 for White Oak.

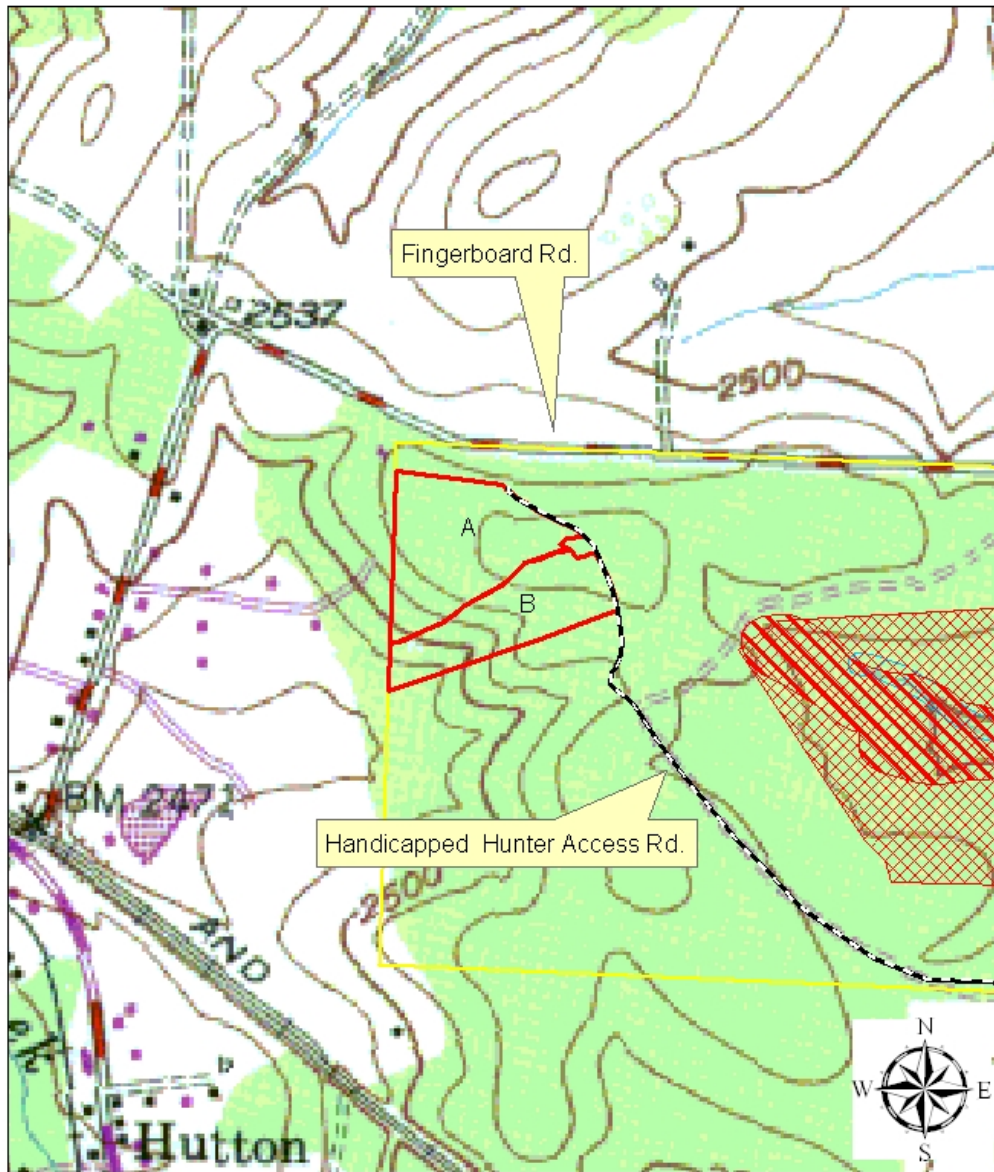
Silvicultural Recommendations:

The proposed silvicultural treatment for this stand is to begin to regenerate the stand using a Two-stage shelterwood system. In this case, the first stage of this system will involve a "Preparation Cut" designed to give the newly established young oak seedlings sufficient sunlight to further develop into a competitive sapling, without allowing the less desirable Red Maple to overtake the site. The Preparation Cut will involve reducing the stocking to 70% by "thinning from below"; removing suppressed, intermediate and weak co-dominant trees from the overstory. The resulting harvest will yield a relatively low volume of timber, (approx 2,300 – 2,800 bd.ft./acre) but when combined with the work proposed for the adjacent Stand A, will result in sufficient volume for commercial harvest.

For demonstration values, in addition to the commercial harvest, on the front half of the site, the reduction of stocking will include control of the undesired interfering saplings which further shade the developing oaks. These saplings will be controlled using a low volume application of herbicide applied directly to the stems using cut surface and or hack and squirt methods.

These practices will provide for the further development of the existing oak seedlings into a competitive position in the understory, thereby assuring a significant oak component exists in the future stand.

Compartment 43-B FY - 12



Compartment.....43
 Area.....6.5 Acres
 Species Mix.....Mixed Oak
 Size Class.....Med / Lg. Sawtimber
 Quad.....Oakland

Scale: 1" = 660'

Legend

-  PGDF_RCVF_OLD_GROWTH_300FT_BUFFER
-  PGDF_RCVF_OLD_GROWTH_MGT_UNIT
-  Willards
-  Proposed Management Area
-  PGDF_RCVF_WSOC_100_Footer
-  PGDF_RCVF_BDA
-  PGDF_RCVF_BLUE_LINE_SOFT_BUFFER

H. Operational Management and Budget Summary

Operational Management and Budget Summary

1. INTRODUCTION

This section of the plan is designed to cover the annual cost and revenues associated with the operational management of Potomac-Garrett State Forest (PGSF). It is the Department's intent that all revenues generated from PGSF will be used to pay for the management and operation of the Forest. The numbers expressed in this section are only estimates and averages of annual expenses and revenues. These numbers will fluctuate each year based on management prescriptions, economic conditions and public use of the forest.

The following information is a breakdown of Funding Sources and Operational costs associated with PGSF. These figures are only estimates that are based on projected revenues and operational expenses. Yearly changes in timber markets and weather conditions can severely affect revenues. Operational expenses will vary from year to year. The numbers below are based on the budget request submitted for FY-2011, as the FY-2012 request has not been prepared at the time this document is being released for initial review.

2. PGSF FUNDING SOURCES: Estimated - \$515,087

- General Fund: \$269,234

State Forests in Maryland are funded from several sources. The first is the **General Fund**. This is money generated from taxes. It is used in state forests primarily to fund classified (permanent) employee salaries and benefits.

- Special Fund: \$183,230

The second source is the **Special Fund**. This is money generated from revenue. The state forests generate revenue through the collection of service fees, as well as the sale of timber and forest products as detailed within the annual work plan and deposited in the Department of Natural Resources Forest or Park Reserve Fund. These funds must be appropriated by the General Assembly through the annual budgeting process before being spent. It is used in state forests to fund operational costs. The state forest budget is prepared approximately one year before the beginning of the fiscal year in which it will be spent. The budget then goes through the legislative approval/review process along with all other state operating budgets. Once adopted, the budget goes into effect the first day of the fiscal year (July 1st). The Special Fund contribution of revenue generated by PGSF for FY-11 is expected to be \$113,569 of the \$183,230.

- ORV Fund: \$32,614

In addition, PGSF is included in the Maryland Forest Service's Off Road Vehicle (ORV) Budget. This separate budget is based on **revenue generated from ORV permit sales** statewide and is allocated back to the state forests through the budgeting process. ORV funds are a restricted special fund and can only be spent for ORV Trail related expenditures.

- Recreational Trail Grant: \$30,000

Another source of funding at PGSF is **Recreational Trail Grants**. These grants are competitive and are generally limited to \$30,000 per year per grant. The source of this funding is the Federal Department of Transportation administered through the Maryland Department of Transportation, State Highway Administration. These funds are designated reimbursable funds and are applied to various trail related projects as detailed in specific grant requests.

- Forest inventory grants: 21,500

Grant monies secured for the completion of the forest inventory.

3. OPERATIONAL COST: Estimated Annual Expenses - \$515,087

Operational expenses are those costs paid directly out of the PGSF operational budget by the State Forest Manager and vary based on approval of operational budgets. The Forest Manager prepares a proposed operational budget for the forest based on instructions provided approximately one year in advance of the fiscal year. The FY-2011 budget proposal was prepared in July of 2010.

- Classified Salaries, Wages and Benefits: \$269,234

This cost is associated with General Funds which are state tax revenues provided annually. These funds are used to pay PGSF Maryland Classified Employee Salaries responsible for the management, operations and maintenance of the state forest.

- Contractual Staffing: \$59,266

This cost is associated with contractual personnel hired to assist the classified staff in conducting work outlined in the annual work plan, managing the daily activities on the forest, including boundary line work, maintenance of trails, forest roads, maintaining primitive campsites, a public shooting range, overlooks, wildlife habitat areas, and implementing all maintenance, recreational, silviculture, and ecosystem restoration projects.

- Land Management and Operation Cost: \$95,583

This includes expenses for office and field equipment, vehicles, gravel, signs, boundary paint, roadwork contracts and construction, trash removal from illegal dumping, boundary line work & surveying, tree planting, site preparation, control of invasive species, non-commercial thinning and other forest management practices. These costs vary greatly from year to year based on the activities identified in the Annual Work Plan.

- County Payments: \$28,390

These are revenue payments to local county governments which will vary every year. Payments are made on an annual basis to Garrett County based on 25% of the gross revenue generated from PGSF. These payments come out of revenue generated from timber sales and recreation. These payments are used to help the counties offset the loss in property tax revenues which are not paid on state owned lands.

- ORV Funds: \$32,614

ORV funds are a restricted special fund and can only be spent for ORV Trail related expenditures.

- *Recreational Trail Grants: \$30,000*

These funds are designated for trail improvements to Piney Mtn. trail.

- *Forest Inventory Grants: \$21,500*

These funds designated for completion of forest inventory project.

4. SUMMARY

This is the general breakdown on Revenues and Operational Costs associated with the PGSF. As described, these figures will vary from year to year. A more detailed picture on revenues and operational cost will be reviewed quarterly as the actual picture develops within implementation.