

GREEN RIDGE STATE FOREST

ANNUAL WORK PLAN

FISCAL YEAR 2014

Prepared:

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3/26/13
Date

Reviewed:

Robert Shultz
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3-27-13
Date

Reviewed:

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4/18/13
Date

Approved:

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4.19.13
Date

State Forest Annual Work Plan

A. Forest Overview

Includes an over site of the forest; history, size, location, special features, etc.

B. AWP summary

Includes number of sales, total harvest acres, acres by harvest method, estimated harvest volume and other important features for the work to be performed during the next year..

C. Maintenance Projects

Includes boundary maintenance, road maintenance, building maintenance and other such projects.

D. Recreation Projects

Includes projects such as campsite improvements, hunting programs, special recreational activities, ATV and hiking maintenance, trail grants, signage, and other projects specific to benefiting recreational users of the forest.

E. Special Projects

Includes activities to gain or maintain third party forest certification, GIS databases, and other such activities.

F. Silvicultural Projects

Includes forest harvesting, prescribed fire programs, fertilization, reforestation, and other such projects. This section include the following:

Final Silvicultural Activities:

1. Site Map
2. Silvicultural Prescription
3. Stand Data

Review Process:

1. Review Summary
2. Interdisciplinary Team Comments (collective)
3. Advisory Committee Comments
4. Public Comments

G. Watershed Improvement Projects

Includes special projects to enhance water quality, wetland restoration, and other such activities.

H. Special Wildlife Habitat Projects

Includes Special Wildlife Habitat Areas plan development and implementation and other wildlife habitat improvement practices.

I. Ecosystem Restoration Projects

Includes projects to manage exotic invasive species, management activities within High Conservation Value Forests other such activities aimed at improving ecosystem health and vitality.

J. Monitoring Projects

Includes CFI forest inventories, and other inventory projects being conducted on the forest, watershed monitoring, a other such projects.

K. Budget

Include proposed budget specific to the forest.

Forest Overview

Green Ridge State Forest is located in eastern Allegany County. It is the only State Forest located in the Ridge and Valley province. Green Ridge receives the least amount of rainfall in Maryland, averaging 36 inches annually. Consisting of 47,560 acres, Green Ridge is the largest contiguous block of forestland in Maryland within the Chesapeake Bay watershed. It accounts for about 30% of the State Forest System and approximately 12% of all DNR land in Maryland.

The general geographic boundaries of Green Ridge are Town Creek to the west and Sidelining Hill Creek to the east. The northern boundary extends to the Mason-Dixon Line. The southern boundary parallels the Potomac River.

Elevations range from 500 feet above sea level on the Potomac River to 2,000 feet on Town Hill.

Three Major highways traverse the forest in an east to west direction: Route 144, Maryland Route 51, and Interstate 68.

In the early 1800's, Richard Caton and William Carroll in partnership owned much of the land that is Green Ridge State Forest today. Richard Caton was the son-in-law to Charles Carroll of Carrollton, a signer of the Declaration of Independence. William Carroll was the grandson of Daniel Carroll of Rock Creek, a framer of the United States Constitution. The land was originally patented from vacant lands during the 1820-1840 period for inclusion into various timber and mining interests, primarily the Town Hill Mining, Manufacturing, and Timber Company. This business venture was financed by the estate of Charles Carroll of Carrollton. The crumbling stone structure known as the Carroll Chimney, part of the steam-powered sawmill built in 1836, is the only known surviving structure of that period.

In the 1880-1912 era, most of the remaining virgin forest was cut and a period of neglect resulted in numerous wildfires. During the early 1900's, the Mertens family of Cumberland attempted to convert the forest into apple orchards and promoted it as "The Largest Apple Orchard in the Universe."

The orchard was subdivided into 10-acre parcels and sold to individuals as investment properties. Five acres of each property parcel was cleared, burned, and planted into apple trees. The remaining five acres had the best trees cut and the poorer trees were left standing. The orchard company went into bankruptcy in 1918. The interests of the corporation were acquired by the State Department of Forestry in 1931.

The first forest management activities at Green Ridge were performed by the Civilian Conservation Corps (CCC) in the 1930's. Their main focus was fire control. Other work consisted of building roads, trails, recreation enhancements, and the management of existing forest for its future timber and wildlife potential.

Green Ridge State Forest

Fiscal Year 2014

AWP Summary

This work plan includes three silviculture proposals for a total of 281 managed acres within the 24,414 acre general management zone in which area based sustainable forest management is practiced. Within these managed acres, end of rotation harvests are proposed to regenerate the stands while salvaging ice damaged forest resources. These harvests are proposed due to near total mortality of the overstory trees that resulted from a catastrophic hail storm event. There will be some variation between managed acres and actual harvest acres to provide for various buffers and/or retention areas.

On 27 May 2011 a major storm event producing very large hail impacted stands in the Mertens Avenue/Oldtown Road intersection area of the forest causing significant canopy loss. One year later the damage was evaluated and we learned that significant mortality occurred in approximately 400 acres of mature oak stands. The silviculture proposals in this work plan are the result of responding to this mortality. These proposals will focus on regenerating these stands while salvaging the timber loss. Once these salvage proposals are approved, they will be moved ahead to be accomplished during the FY-2013 operation cycle to salvage the timber while it is still merchantable. In return, an equivalent number of proposals approved in the FY-2013 AWP will be held for the FY-2014 operation cycle.

The silviculture proposals within this plan include 281 acres of variable retention harvests for an estimated 1,090mbf of hardwood timber.

Another major project proposed in this AWP is the GRSF Motorized Access Network; Restoration and Sustainable Environmentally Sensitive Maintenance of East Valley, Twigg, and Gordon Road Project. This project will restore environmental sustainability of three dirt and gravel roads on the forest while improving public access to areas of the state forest.

In addition to the above projects, other maintenance, recreation, ecosystem restoration, watershed improvement, monitoring, and special projects are included in this plan. Specific projects are described within the following pages.

Maintenance Projects

General Maintenance will continue such as maintaining 100 primitive campsites, hazardous tree removal, pole gate installations as needed, mowing and maintenance of handicap access hunting areas, and general maintenance of headquarters complex, shooting range, and outbuildings.

1. GRSF Motorized Access Network; Restoration and Sustainable Environmentally Sensitive Maintenance of East Valley, Twigg and Gordon Road Project.
2. Recover 3 miles of boundary & re-blaze 20 miles of existing state forest boundary.
3. Continue to maintain 100 primitive camp sites.
4. Continue to maintain public shooting range.
5. Continue to maintain viewsheds on 5 overlooks.
6. Continue to maintain 4 handicap hunter access roads.

Trails and Recreation Capitol Improvement Proposal for Green Ridge State Forest

Project Title: GRSF Motorized Access Network; Restoration and Sustainable Environmentally Sensitive Maintenance of East Valley, Twigg and Gordon Road Project.

Total Project Funds Requested: \$550,000.00

Background: This project will restore ecological sustainability to **East Valley (8.7 miles), Twigg (2.2 miles) and Gordon (3.0 miles) Roads** and restore motorized public access to recreation features within Green Ridge State Forest. In 2010 DNR made the difficult decision to close East Valley Road to all motorized traffic because the road surface is no longer ecologically sustainable and has become dangerous for vehicle traffic. This decision reduced public access to the forest significantly and included closure of approximately eighteen miles of motorized access and seven campsites. East Valley Road was closed to all public motorized traffic because it had become degraded to the point that it was no longer ecologically sustainable as well as become impassable for most licensed vehicles. Much of this degradation was caused by ATV Traffic. East Valley Road is no longer designated as an ORV Trail. Public ATV traffic has proven to be an inappropriate use of this resource. However, DNR wishes to restore this road to eliminate sediment and erosion control problems and restore motorized recreation access for licensed motor vehicles.

Gordon Road and Twigg Road remain open to licensed motor vehicles despite the poor road conditions. Both of these roads have long been in need of major reconditioning to improve environmental conditions and transportation function.

Project Design – the Solution: This project will address the problems described above utilizing environmentally sensitive best management practices for dirt and gravel roads and restore motorized public access to the forest. Water quality and aquatic habitat in Fifteen Mile Creek and Town Creek watersheds will be enhanced by eliminating excessive erosion from the road surface and safely diverting road runoff before it enters the streams.

Specific work to be completed includes replacement of over thirty failed culverts and installation of additional cross pipes where needed. Other water diversion structures will be used in conjunction with ditches, culverts and cross pipes to decrease volume and velocity of water on these roads. These diversion structures will include rolling dips, broad based dips, and turnouts.

These roads are also incised and will require installation of significant amounts of new aggregate to facilitate adequate crowning of the road and proper installation of cross pipes.

Monitoring and Maintenance: The Green Ridge State Forest Manager and staff are committed to long term environmentally sensitive maintenance and continuous monitoring of this implementation project. The State Forest will include this project in their Transportation Inventory and Maintenance Plan and assume the responsibility for long term maintenance of this project. An ecologically sustainable transportation system is a requirement of the state forest to maintain FSC and SFI Forest Certification.

Alternatives: The likely alternative to this project proposal is that these roads will continue to deteriorate creating additional ecological degradation to waterways and habitats while remaining closed or needing to be closed to public access to state forest trails, campsites, hunting access and other public recreation on these sections of the forest.

Recreation Projects

1. Maintain approximately 60 miles of trails including 50 miles of hiking trails and 12 miles of mountain bike trail..
2. Continue to enhance upland game hunting opportunities by enhancing early successional wildlife habitat at Kirk Orchard, Bull Ring Ranch, Malcolm Road, and Kasecamp Bottomlands.
3. Provide 2-4 guided interpretive tours on the forest to share management principles and practices with the public.
4. Continue to maintain and enhance a virtual geocaching program to interpret county and state Big Tree champions within the forest as well as other natural and cultural heritage assets of the forest.

SPECIAL PROJECTS

A. Forest Stand Delineation and Inventory:

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 stand inventory data on approximately 1700 stands over the entire state forest. The data will be collected, analyzed, and entered into the GIS database. Staff assignments and field operations have been adjusted to assure the timely and accurate completion of this important field level assessment that will serve as the basis which we will draw management decisions from for the next 10-15 years. The department's goal is to have this project completed by FY-2016.

B. Continue to Network with Partners:

GRSF is committed to being a “teaching forest” and strives to reconnect people to the land through providing forest management tours for the general public, hosting training sessions and forest resource-based events, service learning projects, and serving as natural laboratory for schools and universities.

1. Maintain working relationship with Garrett College – Forestry classes use forest as training laboratory and implement practices directed by Forest Manager.
2. Maintain working relationship with Allegany College of Maryland-Forestry Program will use GRSF for forestry lab and site for their Summer Harvesting Course. GRSF will provide a site where timber can be extracted as part of harvesting course in return for in-kind services.
3. Continue participation with Appalachian Forest Heritage Area (AFHA) Forest Manager serves as Executive Board member.
4. Continue partnership with the Ridge and Valley Stream Keepers (RVSK). GRSF provides meeting room and shares information in return RVSK monitor water quality in the streams within GRSF.
5. Cooperate with American Chestnut Foundation. GRSF staff continues to maintain a 50- tree American Chestnut plantation at Kirk Orchard.
6. Continue partnership with Wildlife Institute to work on Appalachian Mountain Woodcock Initiative to enhance American Woodcock habitat on the forest.
7. Continue to support and collaborate with Volunteer Team Incorporated to facilitate the spirit of service on the forest and reconnect people to the land.
8. Continue to participate in I&E Programs including Arbor Day, Project Learning Tree, Becoming an Outdoors Woman, Natural Resources Careers Camp, etc..

Green Ridge State Forest Fiscal Year 2014 Silviculture Projects Summary

<u>Proposal Name</u>	<u>Compartment</u>	<u>Managed Ac.</u>	<u>Harvest Ac.</u>	<u>Est (mbf)</u>	<u>Prescription</u>
1 Stafford Rd	56/57	121	121	480	SLVG
2 Oldtown Orleans Rd	58	127	127	485	SLVG
3 Mertens Ave.	64	33	33	125	SLVG

*Total

281

281

1090mbf

Abbreviations for prescriptions:

TSI Timber Stand Improvement

VR Variable Retention

SLVG Salvage

Silviculture Proposal Narrative

Proposal Name: Stafford Road Salvage
Managed Area: 121 Acres
Harvest Area: 121 Acres

Resource Impact Assessment

Forest Community Types and Development: This is a mixed oak stand within the general forest area that was killed by a severe hail storm in May 2011. The stand is approximately 94 years old and has over 50% mortality over the entire area. It is also overstocked. These facts constitute the selection of this stand for regeneration silviculture treatment.

Rare, Threatened and Endangered (RTE) species: There are no known RTE species currently on or impacted by this site.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

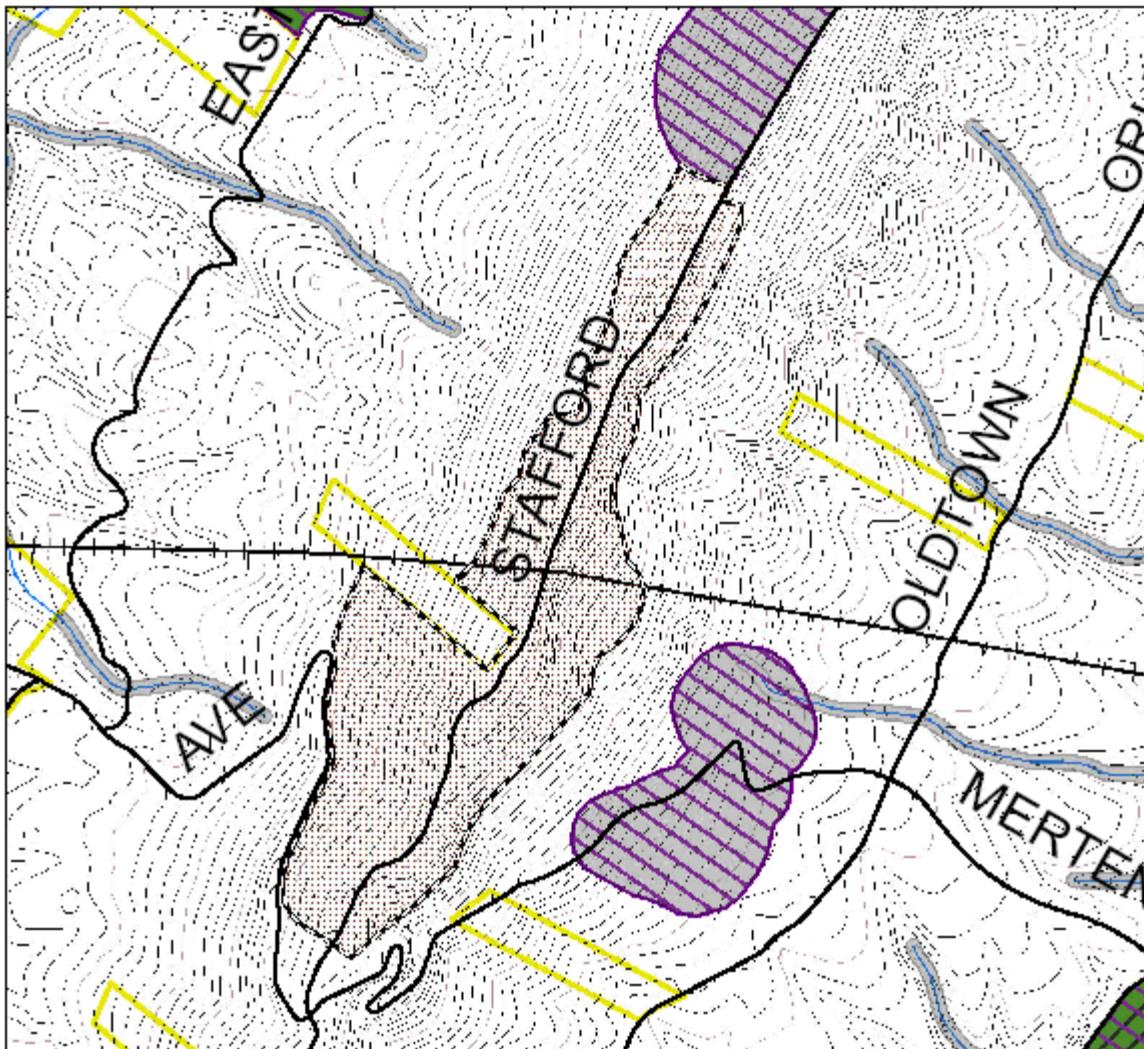
Water Resources: Water resources will be protected on this site. Access to the site is an existing road. All streams are already identified as HCVF and will be protected by a 50-foot wide no-cut forest buffer.

Soil Resources: Soil resources on this site will be protected under the *Maryland Department of Natural Resources-Forest Service: Rutting Guidelines for Forest Operations on Maryland State Forests*.

Historic Conditions: This stand like most of GRSF likely developed on its own over the past 120 years into what it is today despite the fact that it was commercially clearcut, and likely the ground was converted to fruit orchard in years prior to 120 years ago. Historically this site was likely dominated by American chestnut. However, chestnut blight has eliminated American chestnut from having a dominant position in the landscape.

Silvicultural Prescription: The recommendation for this stand is to regenerate the stand under the principles of variable retention in a timely manner to salvage the dead standing wood. The objective is to achieve regeneration of a mixed oak stand while maintaining some attributes of the original stand for wildlife habitat, natural heritage, and aesthetics values.

FY- 2014 Proposed Salvage Harvest Stafford Rd



Compartment - 56/ 57
Managed Area - 121 Acres
Harvest Area - 121 Acres
Age - 94 years
Type - Mixed Oak
TPA - 238
AGS - 11 sq. ft.
Stocking - 110+%

Growth Rate - <1%
Soil Type - Hazleton
Site Index - 60
Composition - SO-34%
WO-29%



1 Inch equals 1,000 feet

1,000 500 0 1,000 Feet



Legend

- Managed Area
- Harvest Area
- Wildlands
- OGEMA
- ESA
- HCVF
- GRSF Boundary
- Transmission Line

Silviculture Proposal Narrative

Proposal Name: Oldtown Orleans Road Salvage
Managed Area: 127 Acres
Harvest Area: 127 Acres

Resource Impact Assessment

Forest Community Types and Development: This is a mixed oak stand within the general forest area that was killed by a severe hail storm in May 2011. According the GRSF specified 100 year rotation, this stand is over-mature at 106 years. Furthermore it is an overstocked stand. These facts constitute the selection of this stand for regeneration silviculture treatment.

Rare, Threatened and Endangered (RTE) species: There are no known RTE species currently on or impacted by this site.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

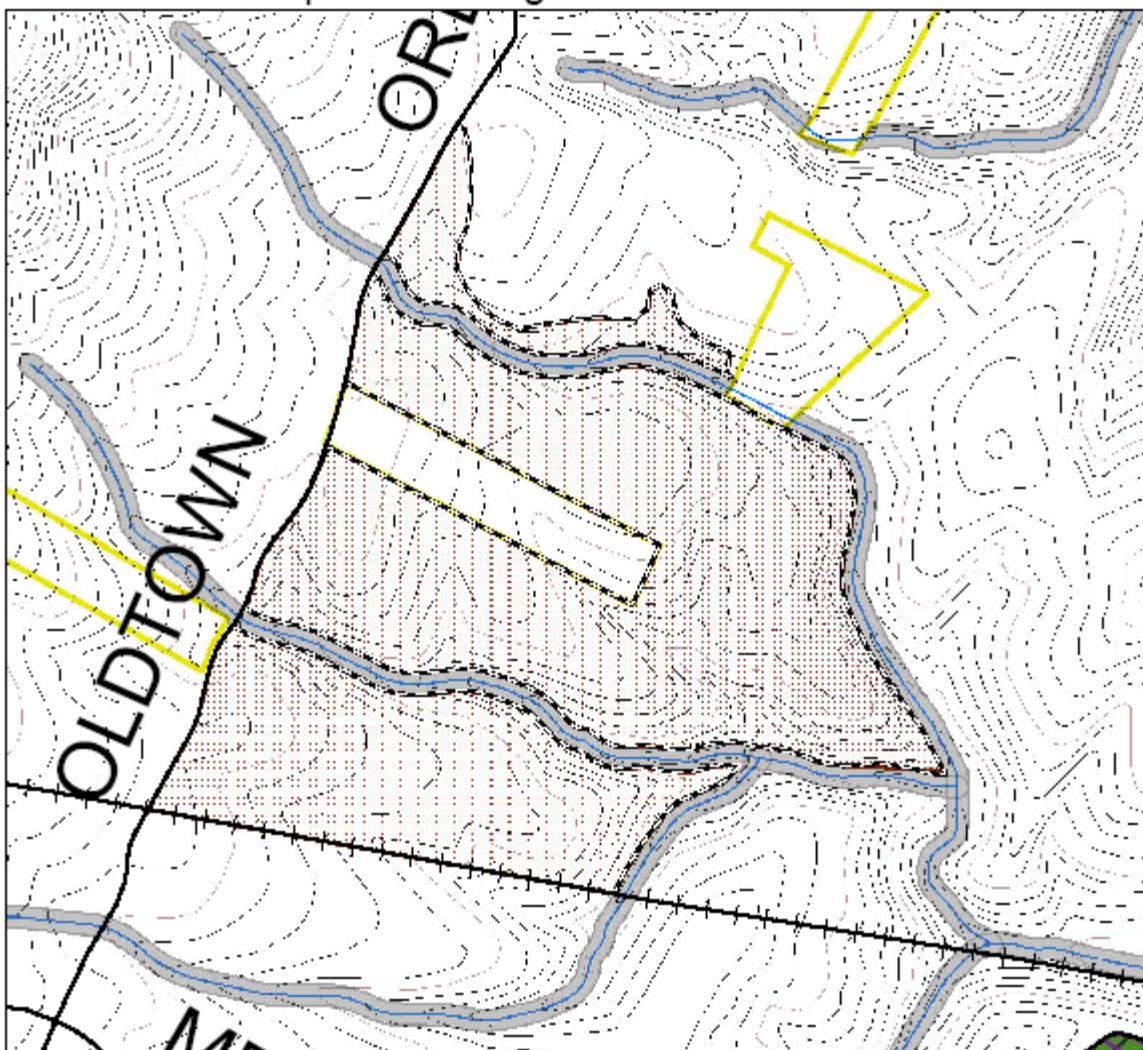
Water Resources: Water resources will be protected on this site. Access to the site is an existing road. All streams are already identified as HCVF and will be protected by a 50-foot wide no-cut forest buffer.

Soil Resources: Soil resources on this site will be protected under the *Maryland Department of Natural Resources-Forest Service: Rutting Guidelines for Forest Operations on Maryland State Forests*.

Historic Conditions: This stand like most of GRSF likely developed on its own over the past 100 years into what it is today despite the fact that it was commercially clearcut, and likely the ground was converted to fruit orchard in years prior to 100 years ago. Historically this site was likely dominated by American chestnut. However, chestnut blight has eliminated American chestnut from having a dominant position in the landscape.

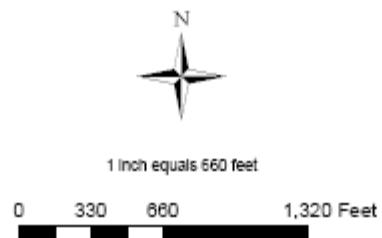
Silvicultural Prescription: The recommendation for this stand is to regenerate the stand under the principles of variable retention. The objective is to achieve regeneration of a mixed oak stand while maintaining some attributes of the original stand for wildlife habitat, natural heritage, and aesthetics values.

FY- 2014 Proposed Salvage Harvest Oldtown Orleans Rd



Compartment - 58
Managed Area - 127 Acres
Harvest Area - 127 Acres
Age - 106 years
Type - Mixed Oak
TPA - 302
AGS - 91 sq. ft.
Stocking - 110+%

Growth Rate - <1%
Soil Type - Lehew/ Klinesville
Site Index - 60
Composition - SO-40%,
WO-33%



- Legend**
- Managed Area
 - Harvest Area
 - Wildlands
 - OGEMA
 - ESA
 - HCVF
 - GRSF Boundary
 - Transmission Line

Silviculture Proposal Narrative

Proposal Name: Mertens Avenue Salvage

Managed Area: 33 Acres

Harvest Area: 33 Acres

Resource Impact Assessment

Forest Community Types and Development: This is a mixed oak stand within the general forest area that was killed by a severe hail storm in May 2011. The stand is approximately 97 years old and has over 50% mortality. It is also overstocked. These facts constitute the selection of this stand for regeneration silviculture treatment.

Rare, Threatened and Endangered (RTE) species: There are no known RTE species currently on or impacted by this site.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

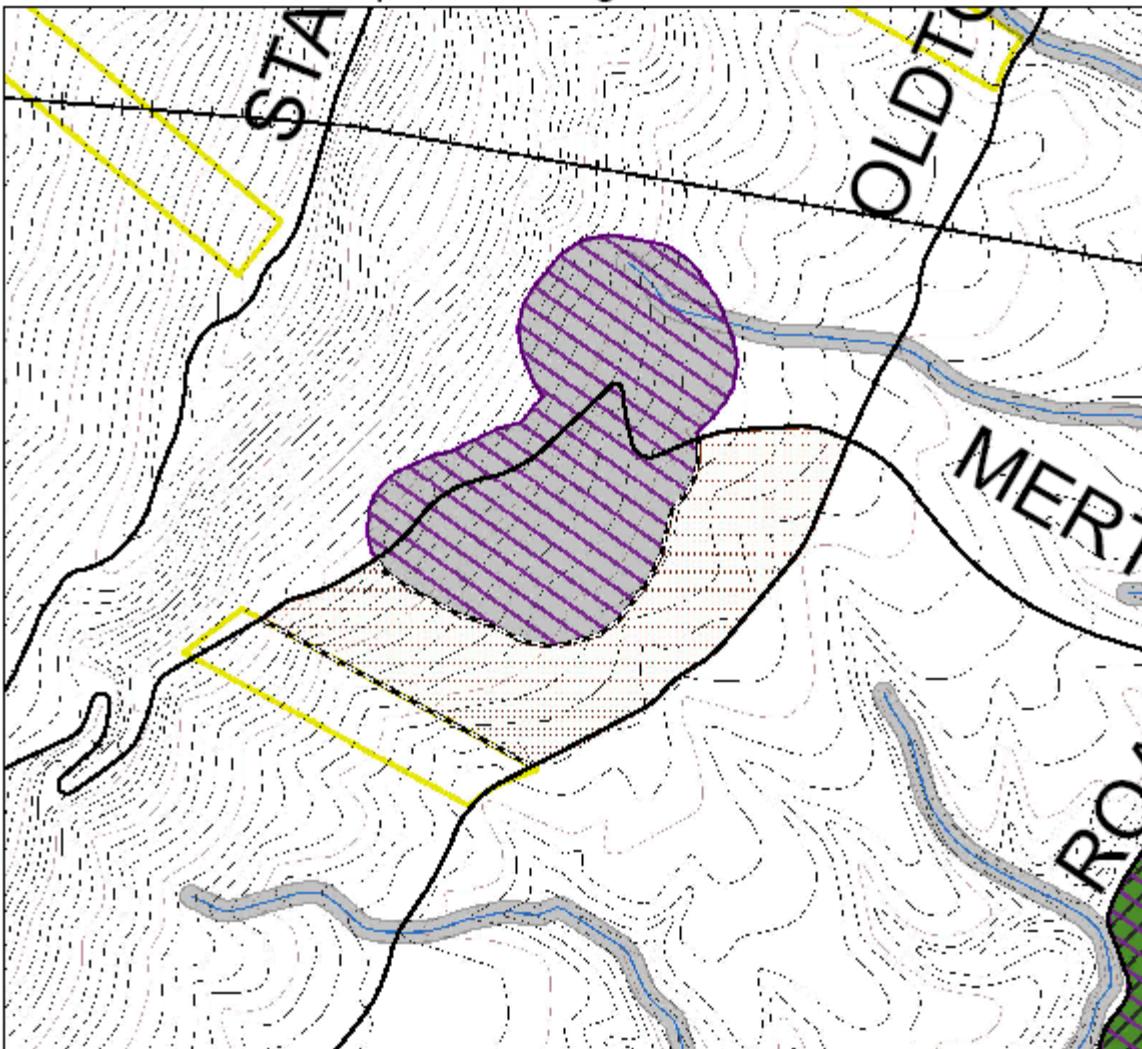
Water Resources: Water resources will be protected on this site. Access to the site is an existing road. All streams are already identified as HCVF and will be protected by a 50-foot wide no-cut forest buffer.

Soil Resources: Soil resources on this site will be protected under the *Maryland Department of Natural Resources-Forest Service: Rutting Guidelines for Forest Operations on Maryland State Forests*.

Historic Conditions: This stand like most of GRSF likely developed on its own over the past 120 years into what it is today despite the fact that it was commercially clearcut, and likely the ground was converted to fruit orchard in years prior to 120 years ago. Historically this site was likely dominated by American chestnut. However, chestnut blight has eliminated American chestnut from having a dominant position in the landscape.

Silvicultural Prescription: The recommendation for this stand is to regenerate the stand under the principles of variable retention in a timely manner as to salvage the dead standing wood. The objective is to achieve regeneration of a mixed oak stand while maintaining some attributes of the original stand for wildlife habitat, natural heritage, and aesthetics values.

FY- 2014 Proposed Salvage Harvest Mertens Ave



Compartment - 64
Managed Area - 33 Acres
Harvest Area - 33 Acres
Age - 97 years
Type - Mixed Oak
TPA - 208
AGS - 13 sq. ft.
Stocking - 98+%\nGrowth Rate - <1%
Soil Type - Calvin
Site Index - 60
Composition - SO-41%,
WO- 30%



1 Inch = 660 feet

0 330 660 1,320 Feet



- Legend**
- Managed Area
 - Harvest Area
 - Wildlands
 - OGEMA
 - ESA
 - HCVF
 - GRSF Boundary
 - Transmission Line



Green Ridge State Forest

ID Team Annual Work Plan FY 2014
August 14, 2011

Attendance: Mark Beals, Eric Null (Parks), Jim Mullen (Wildlife), Harry Cage (NRP), Brad Metzger (MDE), Bob Webster, Jack Perdue, Jesse Morgan, Rick Latshaw (W&HS - Wildlife), Ed Thompson (W&HS - Natural Heritage), Alan Klotz (Fisheries), John Wilson (LAP), Steve Carr (LAP).

Forest Manager Introductions

ORV meetings and work to

Stakeholders work group to look at ORV alternatives. GRSF has provided several proposals and alternative alignments. They submitted three and one (Town Hill) was selected to be promoted to the stakeholders.

MDA mapped some browning and defoliation on GRSF.

Chronic Wasting Disease of deer was found at GRSF. A quarantine has been issued.

Emerald Ash Borer was discovered at GRSF. It was multiple detections. It probably has been here for some years. A proposal has been forwarded to release predatory wasps to help control EAB.

Just for information, there was some hail damage during Memorial Day holiday. It reduced leaf area in some areas.

Some walking stick defoliation issues were witnessed on Town Hill.

Oak Decline fungus may be here too. Oaks and some other tree species have been declining in a strange way.

The forest certification audit occurred in April 2011. This was the first time the western state forests were included in the scope. These forests were recommended as certified by the Sustainable Forestry Initiative and Forest Stewardship Council.

There were Corrective Action Requests that will have to be completed before the next audit in 2012. There were three themes that encompassed the majority of these CARs – roads, retention and rutting. Another huge CAR involves a Chain of Custody. This is a major FSC CAR and will have to be completed within three months of the release of the final report (September 26).

NewPage has great interest in the CoC policy being completed so they can enter state forest into their certified wood supply.

As result of the audit, a group has met with the Natural Resource Police regarding harvesting of wild ginseng on state forests. This group included members from Forest

Service, Natural Heritage and MD Dept of Agriculture. The purpose was to make the NRP more aware of the ginseng harvesting issue.

The new SFI standards require a risk assessment that includes an internal audit. A checklist was developed that will include the ID Teams to examine a couple completed harvest sites against the standards. This checklist will be distributed to the team and will be open for comments on refinements.

Field Stop – Town Hill

The ID Team visited the Town Hill ORV proposal site – a six-mile loop. The volume of use is an issue and keeping users on the designated trails will be key to success for any ORV trail.

The ID Team reviewed the site and discussed the issues of this trail being used for ORV use and it is their opinion that this trail for ORV use would be unsustainable.

The use of old mine sites for ORV parks was discussed but no proposals were forwarded.

Also on this site, the team witnessed several trees that had lost their foliage. A large walking stick population was noticed but it is felt the damage is greater than any previous walking stick issues and may be caused by some other agent.

Field Stop - Little Orleans Horse Trail Proposal

A horse trail has been requested by a local campground owner. Two trail proposals were suggested – a long loop trail and a shorter loop trail. It is felt by the campground owner that an expanded trail accessible to horses would attract a larger number of campers.

The longer trail would enter into wildlands. The concern is that the number of users would degrade the area and especially the nearby streams and fish habitat. There most likely would be issues with exotic invasive plant introduction. Wildlife Management Area managers attempted to limit horse access to weekends but this was discontinued due to negative environmental impact issues.

The C&O Canal is open to horses and they are allowed on all GRSF roads. The neighboring campground would provide/develop horse-ready campsites and GRSF wouldn't have to. The trailhead would originate on the campground and lead onto GRSF. DNR Land Acquisition & Planning (LAP) is developing a licensing agreement for use in such situations.

Any trail project here would have to stay out of the flood plain to avoid water issues.

A possible connector trail from campground to GRSF to Yonkers. There may be a trouble spot with use of a connector. This would require seasonal and sediment restrictions.

The ID Team feels the long loop proposal should not be considered. The short loop may be acceptable with certain restrictions and could be recommended to the campground owner. A connector from the campsite to GRSF roads could be a good compromise and solution.

However, any revised proposal should be brought back to the ID Team for further consideration. The final concept should be seasonal access only and work with Wildlife & Heritage for seasonal limitations.

Field Stop - Kase Camp Herbicide Treatment

This area is along C&O Canal. The proposal is to treat with Arsenal to eliminate exotic species. There are some concerns with chorus frog habitat and the chemical response, but not sure of possible herp issues. This proposal may work considering the treatment of exotic plants may outweigh issues with the frog habitat. Knot weed is here and is very bad in some areas. Imazapry is the chemical name, Habitat is the marketing name.

The proposal will require further research by the ID Team for use at this site and with species of concern.

Field Stop - Stafford Trail Harvest

This harvest will include retention islands. The stand age is 88 years. No real concerns from the ID Team, but was some question of oak regeneration levels. Retention areas have not been marked but will be identified as the harvest marking progresses.

Other Proposals Not Visited

Heritage had found a sharpshin hawk at Rock Lick Road site, but is not too concerned with the proposal. This hawk is a S2 species. The ID Team did not visit this site. Twigg Road, Gordan Road (coop with The Nature Conservancy) are other proposals and shale barren burns with the poisoning of invading hickory trees. There were no issues raised from the ID Team regarding these other proposals.

WATERSHED IMPROVEMENT PROJECTS

Continue to establish and enhance riparian buffers along Town Creek with volunteer tree planting projects. Non invasive tree and shrub species will be planted to establish forest buffers and enhance wildlife habitat. The F.J. Bruisers Off-Road Club has participated in such planting projects the previous two springs and plan to continue to contribute this coming year by doing additional planting and buffer maintenance in the Bull Ring area.

SPECIAL WILDLIFE HABITAT PROJECTS

1. Implement the work outlined in the Anthony's Ridge Habitat Plan provided it has been approved.
2. Continue Rotational mowing and brush management in approved grasslands and other wildlife openings.
3. Work will continue to implement practices outlined in the Kirk Orchard Early Successional Wildlife Habitat Area plan to restore, enhance, and maintain an upland ecosystem.

ECOSYSTEM RESTORATION PROJECTS

1. Work will continue to suppress ailanthus populations on the forest. Focus will be put on roadside populations and individuals found within harvest proposal areas. Research has shown that suppression of ailanthus is most successful when using basal bark or cut surface treatments prior to harvest.
2. Development and implementation of an Invasive Species Management Plan for the State Forest to be attached to the long term Sustainable Forest Management Plan for Green Ridge State Forest.
3. Partner with DNR Heritage Division to implement ecosystem restoration practices for shale barrens on GRSF.

MONITORING PROJECTS

1. MD DNR Fisheries will continue to monitor aquatic populations in Town Creek and the Potomac River. The Ridge and Valley Stream Keepers will also continue to monitor water quality in the streams within the region.
2. GRSF staff will monitor regeneration of stands by completing post harvest regeneration inventories on all final rotation harvests during 5th growing season.
3. MD DNR Wildlife & Heritage Division will continue to monitor 2 GRSF resident black bear sows and cubs that are collared and gps equipped.
4. MD DNR Wildlife & Heritage Service will continue to research and monitor T&E species on the forest including wood turtle, timber rattlesnake, and several lepidoptera species.
5. MD DNR Wildlife & Heritage Service will continue to monitor big game harvest on the State Forest via required hunter harvest check in system.
6. Wildlife Institute will monitor American Woodcock population in Kirk Orchard area with annual spring singing ground surveys.
7. GRSF staff will continue to monitor and document all timber operations within the forest on a weekly basis.
8. GRSF staff will monitor turkey and ruffed grouse reproduction by recording observations per mileage driven from June 1 to September 30 within the forest.
9. GRSF staff will work with Wildlife & Heritage Division to develop a bird monitoring program for the Kirk Orchard Early Successional Area to observe responses to habitat work. Golden-winged warbler will be a focal species for monitoring.
10. Maryland Department of Agriculture (MDA) will continue to monitor gypsy moth, hemlock wooly adelgid, and other insect pest populations on the forest.
11. MD DNR Wildlife & Heritage Service will continue to monitor whip-poor-will populations with annual spring nightjar survey.

Operational Management

1. Introduction

This section of the plan is designed to cover the annual cost and revenues associated with the operational management of Green Ridge State Forest. It is the Department's intent that most of the revenues generated from the GRSF will be used to pay for the management and operation of the Forest. As stated in Chapter 1 of this plan, "*The primary goal of the Green Ridge State Forest Sustainable Management Plan is to demonstrate that an environmentally sound, sustainably managed forest can contribute to local and regional economies while at the same time protecting significant or unique natural communities and elements of biological diversity.*"

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 on Revenues and Operational costs associated with the Green Ridge State Forest. These figures are only estimates that are based on projected revenues and operational expenses. Yearly changes in the timber markets and weather conditions can severely affect revenues. Also weather can greatly affect recreation revenue. Operational expenses will vary from year to year mainly based on costs associated with proposed projects. For many special projects other sources of revenues such as matching grants will be sought to help offset the cost to the Department.

2. Green Ridge State Forest Revenue

Estimated: \$225,000 to \$300,000

Revenues that are generated from the Green Ridge State Forest are deposited into the Department's Forest Reserve Fund. In order to cover expenses out of this Fund, a Green Ridge Forest Budget must be developed a year in advance as part of the larger DNR budget. It 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).

Forest Product Sale Revenue: *Estimated: \$150,000 to \$175,000*

This revenue is generated from the sale of forest products, which are identified in the Annual Work Plan. Traditional forest products include pulpwood and sawtimber from intermediate and regeneration harvests. This revenue is tied to forest harvest activities identified in the annual work plan and will vary each year. With the current age class distribution of the forest most revenue will be from regeneration final harvest operations.

Recreation Revenue: *Estimated: \$75,000 to 125,000*

This revenue is generated from the sale of camping permits, fuel wood permits, and shooting range permits.

Other Revenue/Funding Sources

Annual Amounts vary, Estimated: \$NA

Other budgetary funding that is utilized on an annual basis in the management of Green Ridge State Forest comes from a variety of sources including the Forest or Park Reserve Fund, General Funds and/or the Off-road Vehicle Fund.

Grants

Annual Amounts vary, Estimated for FY-2014: \$550,000

Other funding comes in the form of grants through state and federal sources and are primarily utilized in recreation, habitat and watershed restoration projects. These funds are project specific. Some funding will be obtained through partnerships and grants, such as National Recreation Trail Grants funds. Expenses include the installation recreation improvements, removing invasive species and re-establishing native plant communities and habitat. This year GRSF was awarded \$550,000 from the Trails and Recreation Capitol Improvement Project for restoration and sustainable environmentally sensitive maintenance of three motorized public access trails.

Another source of funding at GRSF 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 and available per approval award of grant. These funds are designated reimbursable funds. \$50,000

3. OPERATIONAL COST:

Estimated total Annual Expenses: \$550,000

Operational expenses are those costs paid directly out of the GRSF 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-2014 budget proposal was prepared in August of 2012.

Staffing Cost

Classified Salaries, Wages and Benefits, Estimated: \$261,810

This cost is associated with Departmental State Personnel classified salaries. This staff is responsible for developing and implementing annual work plans, managing the daily activities on the forest, including resource management, recreation program management, maintenance, and administration.

Contractual Staffing, Estimated: \$130,000

This cost is associated with contractual staffing associated with operations of the state forest. Contractual personnel are responsible for assisting classified personnel 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 assist

with implementing all maintenance, recreational, silviculture, and ecosystem restoration projects.

Land Operation Cost

Estimated: \$100,000

This includes expenses for office and field equipment, vehicles, gates, 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, pre-commercial thinning and other forest management practices. Some of these costs will vary greatly from year to year based on the activities identified in the Annual Work Plan.

Capitol Improvement

Estimated: \$550,000

This includes all costs associated with completing the GRSF Motorized Access Network; Restoration and Sustainable Environmentally Sensitive Maintenance of East Valley, Twigg and Gordon Road Project.

Forest Certification, Inventory & Monitoring Program

Estimated: \$10,000

This estimate reflects the annual cost of various on-going inventory and research projects on the forest. Expenses are directly tied to Forest Certification. The purpose of forest monitoring is to accurately evaluate forest health and the effects of specific management activities. Resource managers will use the information to make informed future management decisions (i.e. adaptive management). Cost would cover both forest resource and sensitive habitat inventories and monitoring the effects of various restoration projects.

Expenses for forest certification will vary from year to year and will be at their highest at the initial certification and then every five years when the re-certification is done.

Routine audits are used to verify compliance with the various certification programs. The goal is to certify Green Ridge State Forest under both the Sustainable Forest Initiative (SFI) and the Forest Stewardship Council (SFC). Each certifying agency takes a slightly different look at what is needed for sustainable forest management. Expenses will include fees for audits and annual monitoring programs for compliance with the certification requirements.

Future plans include hiring additional staffing to cover wildlife management activities, restoration projects, recreation management, monitoring, and additional forestry related activities outlined in this Sustainable Resource Management Plan for Green Ridge State Forest.

County Payments

Estimated: \$60,000

These are revenue payments to local county governments which will vary every year. Payments are made on an annual basis to Allegany County based on 25% of the gross revenue generated from GRSF. 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.

4. Summary

This is the general breakdown on Revenues and Operational Cost associated with the Green Ridge State Forest for FY-2014. As described, these figures will vary from year to year. This generalization of the operating budget suggests the importance of maintaining income levels in order to achieve the goals set forth in the other portions of this plan (i.e. sustainability).