



# GREEN RIDGE STATE FOREST

## Annual Work Plan Fiscal Year 2027

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# A. 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 49,012 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.

## Geographic Setting

The general geographic boundaries of Green Ridge are Town Creek to the west and Sideling 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 along the Potomac River to approximately 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.

## Historic Land Use and Ownership

In the early 1800's, Richard Caton and William Carroll owned much of the land that is now Green Ridge State Forest. Richard Caton was the son-in-law of 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 timber and mining interests, primarily under the Town Hill Mining, Manufacturing, and Timber Company. This venture was financed by the estate of Charles Carroll of Carrollton. The remaining Carroll Chimney, part of a steam-powered sawmill built in 1836, is the only known surviving structure from this period.

Between 1880 and 1912, most of the remaining virgin forest was cut, followed by a period of neglect and repeated wildfires.

In the early 1900's, the Mertens family of Cumberland attempted to convert the forest into apple orchards, marketing it as "The Largest Apple Orchard in the Universe." The land was subdivided into 10-acre parcels and sold as investment properties. Each parcel was partially cleared and planted, while the remaining forest was heavily cut. The orchard venture failed, and the State Department of Forestry acquired the property in 1931.

## **Early Forest Management**

Initial forest management activities were carried out by the Civilian Conservation Corps (CCC) in the 1930's, with a primary focus on fire control. Additional work included construction of roads and trails, recreation improvements, and early forest management for timber and wildlife potential.

During World War II, the CCC camp at Fifteen Mile Creek housed German prisoners of war who were assigned to cut pulpwood in the forest.

As the forest recovered, it became increasingly popular for recreation, particularly hunting, while also contributing to the regional wood products industry.

## **Current Forest Conditions**

Today, Green Ridge State Forest is a diverse forest composed primarily of approximately 110-year-old even-aged mixed oak stands, along with a wide range of age classes resulting from silvicultural activities beginning in the late 1960's.

Dominant oak species include black oak, white oak, red oak, scarlet oak, and chestnut oak. Five native pine species are present: white pine, Virginia pine, pitch pine, table-mountain pine, and shortleaf pine.

Common understory species include flowering dogwood, redbud, and serviceberry.

## **Wildlife and Plant Communities**

Upland wildlife species present in abundance include white-tailed deer, fox and gray squirrels, raccoons, red fox, and cottontail rabbits. Additional species include muskrat, beaver, mink, chipmunks, mice, flying squirrels, weasels, skunks, opossums, bobcats, and black bears.

Game bird species include wild turkey, ruffed grouse, and woodcock. Other bird species include pileated woodpecker, red-tailed hawk, barred owl, and a wide variety of neotropical migrants and songbirds.

Wildflowers commonly found in the forest include mayapple, coltsfoot, spring beauty, trillium, bloodroot, and spiderwort.

# **B. Annual Work Plan Summary**

## **Introduction**

This work plan includes silviculture proposals for a total of 200 managed acres within the 20,000-acre General Management Zone, where area-based sustainable forest management is practiced. Of these managed acres, harvests are proposed. There will be some variation between managed acres and actual harvest acres to provide for various buffers and/or retention areas. Under area-based management, the annual target is 200 managed acres.

The silviculture proposals within this plan include 151.5 acres of variable retention harvests for an estimated 1,023 MBF of hardwood.

In addition to the silviculture projects, this plan includes maintenance, recreation, ecosystem restoration, watershed improvement, monitoring, and special projects. Specific projects are described in the sections that follow.

## **Key Outcomes for FY 2027**

- Implementation of area-based forest management across 200 managed acres
- Completion of 151.5 acres of variable retention harvests
- Continued maintenance of recreation infrastructure, including trails, campsites, and access points
- Ongoing enhancement of early successional wildlife habitat across priority sites
- Continued implementation of monitoring, restoration, and partnership-driven projects across the forest

## **C. Maintenance Projects**

Maintenance activities support access, public use, and day-to-day operations across Green Ridge State Forest. General maintenance will continue across core facilities and infrastructure, including primitive campsites, administrative areas, and recreation assets.

### **1. Access and Roads / Boundaries**

- Identify and mark all new acquisition boundaries and re-blaze 15 miles of existing State Forest boundary lines

### **2. Facilities and Infrastructure**

- Continue to maintain 100 primitive campsites
- Continue to maintain the public shooting range
- Continue maintenance of the headquarters complex and associated outbuildings

### 3. Recreation Access and Amenities

- Continue to maintain viewsheds on six overlooks
- Continue to maintain four disabled hunter access roads
- Continue to maintain the Potomac River boat ramp at Bonds Landing

### 4. General Operations

- Hazardous tree removal as needed
- Pole gate installation as needed

## D. Recreation Projects

Recreation projects focus on maintaining access, improving infrastructure, and supporting public use across Green Ridge State Forest.

### 1. Trail System

Maintain approximately 62 miles of trails, including 50 miles of hiking trails and 12 miles of mountain bike trail.

State staff are overseeing work completed by the Appalachian Conservation Corps under SHA Recreational Trail Grant RT2412. Year two of trail maintenance under this grant is ongoing and the grant will be completed in Spring 2026.

State staff are planning a bridge project on the Pine Lick Trail to replace two washed-out bridges. This project is in the design stage, with the goal of beginning groundwork in FY27.

Maryland Forest Service staff, in coordination with the Office of Outdoor Recreation, are planning a refurbishment project for the Mountain Biking Loop. This project is currently in the design stage.

### 2. Wildlife-Related Recreation

Continue to enhance upland game hunting opportunities by improving early successional wildlife habitat at the following locations:

- Kirk Orchard
- Bull Ring Ranch
- Anthony's Ridge
- Town Creek

- Kasecamp Bottomlands

### **3. Public Engagement and Interpretation**

Provide 2–4 guided interpretive tours on the forest to share management principles and practices with the public.

## **E. Special Projects**

Special projects support long-term forest management, monitoring, and partnerships.

### **1. Forest Regeneration Inventory**

A critical part of achieving long-term sustainable forestry is monitoring and measuring outcomes and responses to management activities. Since completion of the stand delineation and inventory project in 2017, technician resources are available to focus on regeneration inventory and forest response to management.

This work will include collecting regeneration inventory data under the Silvah protocol. All stands will be sampled 3–5 years post-regeneration harvest.

### **2. Partnerships and Coordination**

Green Ridge State Forest is committed to functioning as a “teaching forest” and reconnecting people to the land through tours, training, events, service learning projects, and use as a natural laboratory for schools and universities.

- Maintain working relationship with Allegany College of Maryland Forestry Program
- Continue participation with the Appalachian Forest Heritage Area (AFHA)
- Continue partnership with the Ridge and Valley Stream Keepers (RVSK); GRSF provides meeting space and shares information, and RVSK monitors water quality within the forest
- Continue partnership with the Wildlife Management Institute and Ruffed Grouse Society (RGS) to enhance early successional wildlife habitat
- Continue to support and collaborate with volunteer groups to facilitate service and public engagement on the forest

## **F. Watershed Improvement Projects**

Watershed improvement projects focus on riparian enhancement and water quality protection.

## 1. Town Creek Riparian Buffer Enhancement

Continue to establish and enhance riparian buffers along Town Creek through volunteer tree planting projects. Non-invasive tree and shrub species will be planted to establish forest buffers and improve wildlife habitat.

## G. Special Wildlife Habitat Projects

Wildlife habitat projects focus on maintaining, enhancing, and expanding priority habitat conditions across Green Ridge State Forest.

### 1. Habitat Management Plans

Continue implementation of the following Special Wildlife Habitat Plans:

- Kirk Orchard
- Anthony's Ridge
- Kasecamp Bottoms
- Town Creek

### 2. Grassland and Opening Management

Continue rotational mowing and brush management in approved grasslands and other wildlife openings.

### 3. Prescribed Fire

Use prescribed burning to maintain and enhance warm-season grass habitat areas.

## H. Ecosystem Restoration Projects

Ecosystem restoration efforts focus on invasive species control and restoration of priority ecological communities.

### 1. Invasive Species Management

Work will continue to suppress *Ailanthus* and *Paulownia* populations across the forest. Priority will be given to roadside populations, Special Wildlife Habitat areas, and individuals located within or adjacent to harvest proposal areas.

Research indicates that suppression of *Ailanthus altissima* is most effective when basal bark or cut surface treatments are applied prior to harvest. Other invasive species will be treated on a case-by-case basis, with priority given to early detection and control of new populations.

## **2. Shale Barren Restoration and Management**

Continue implementation of shale barren restoration and management activities in coordination with the Maryland Wildlife and Heritage Service. Work includes invasive species control, prescribed fire, and long-term monitoring across Tier 1 and Tier 2 Ecologically Significant Areas.

**See Appendix A – Shale Barren Restoration and Management Plan.**

# **I. Monitoring Projects**

Monitoring efforts support evaluation of forest conditions, wildlife populations, water quality, and management outcomes.

## **1. Aquatic and Water Quality Monitoring**

- Maryland DNR Fisheries will continue to monitor aquatic populations in Town Creek and the Potomac River
- Ridge and Valley Stream Keepers will continue monitoring water quality within forest streams
- Maryland Department of the Environment will continue stream water quality sampling

## **2. Forest Management Monitoring**

- GRSF staff will monitor regeneration by completing post-harvest regeneration inventories during the fifth growing season
- GRSF staff will monitor and document all timber operations on a weekly basis

## **3. Wildlife Monitoring**

- Maryland DNR Wildlife and Heritage Service will continue monitoring Threatened and Endangered species, including wood turtle, timber rattlesnake, multiple lepidoptera species, and bat species
- Continued monitoring of big game harvest through the required hunter check-in system

- Monitoring of resident black bear populations, including collared sows and cubs

#### **4. Species-Specific Monitoring Programs**

- Monitoring of whip-poor-will populations through annual spring nightjar surveys
- Coordination of Golden-winged Warbler (GWWA) population monitoring through spring surveys
- Summer acoustic bat surveys and Allegheny woodrat camera trapping surveys

#### **5. Forest Health Monitoring**

Maryland Department of Agriculture will continue monitoring for spongy moth, hemlock woolly adelgid, and other forest pest species

## **J. Silvicultural Projects**

Silvicultural activities are proposed on approximately 200 managed acres within the General Management Zone, with 151.5 acres of harvest activity and an estimated yield of 1,023 MBF of hardwood.

Detailed stand data and site maps should be referenced as follows:

- Appendix B – Silvicultural Prescriptions and Stand Data
- Appendix C – Site Maps

### **1. GR-27-S-01 – Sugar Bottom Road**

Variable retention harvest in a mature, overstocked mixed oak stand to promote regeneration while retaining structural habitat features.

### **2. GR-27-S-02 – Dailey Road**

Variable retention harvest in an over-mature mixed oak stand to initiate regeneration and improve stand structure.

### **3. GR-27-S-03 – Green Ridge Road**

Variable retention harvest in a mature mixed oak stand to support regeneration and maintain habitat and aesthetic values.

## 4. GR-27-S-04 – Mountain Road

Variable retention harvest in an over-mature, overstocked mixed oak stand to promote regeneration and improve stand condition.

## 5. GR-27-S-05 – Oldtown Orleans Road

Variable retention harvest in a mature mixed oak stand to regenerate oak while retaining key structural elements.

Proposal Name	Compartment	Managed Acres	Harvest Acres	Est (MBF*)	Prescription
1. Sugar Bottom Rd	42	55	37	231	Variable retention
2. Dailey Rd	16	12	11	74	Variable retention
3. Green Ridge Rd	14	60	51	376	Variable retention
4. Mountain Rd	49	11	10	69	Variable retention
5. Oldtown Orleans Rd	47	62	42.5	273	Variable retention
<b>TOTAL</b>	-	200	151.5	1,023	-

\* MBF: Thousand board feet

**Table 1.** Silvicultural projects summary

## K. Review Process

The Annual Work Plan is reviewed through multiple stages to ensure technical accuracy and coordination across programs.

### 1. Interdisciplinary Review

Review by Maryland Department of Natural Resources staff across relevant disciplines, including forestry, wildlife, and watershed programs.

## 2. Internal Coordination

Coordination among Maryland Forest Service staff and partner programs to support implementation of planned activities.

## 3. Public and Partner Engagement

Ongoing engagement with partners, volunteers, and stakeholders through outreach, tours, and collaborative projects described throughout this plan.

# L. Budget

## Introduction

This section outlines the annual costs and revenues associated with the operational management of Green Ridge State Forest. It is the Department's intent that most revenues generated from the forest are used to support its management and operation.

As stated in the Green Ridge State Forest Sustainable Management Plan, the primary goal is to demonstrate that an environmentally sound, sustainably managed forest can contribute to local and regional economies while protecting significant natural communities and biological diversity.

The values presented are estimates and averages of annual expenses and revenues. These figures will fluctuate each year based on management prescriptions, economic conditions, weather, and public use of the forest.

## Revenue

**Estimated Total Revenue:** \$300,000 – \$325,000

Revenues generated from Green Ridge State Forest are deposited into the Department's Forest Reserve Fund. To expend these funds, a Green Ridge Forest budget must be developed in advance as part of the larger DNR budget and approved through the State legislative process. Once adopted, the budget goes into effect at the start of the fiscal year (July 1).

### Forest Product Sale Revenue

- Estimated: \$200,000 – \$225,000
- Generated from the sale of pulpwood and sawtimber

- Closely tied to harvest activities identified in the Annual Work Plan
- With the current age class distribution, most revenue will come from regeneration harvests

## Recreation Revenue

- Estimated: \$100,000 – \$125,000
- Generated from camping permits, fuelwood permits, and shooting range permits

## Other Revenue and Funding Sources

Annual amounts vary. Additional funding may come from the Forest or Park Reserve Fund and General Funds.

## Grants

- Estimated FY2027: \$0
- Used for recreation, habitat, and watershed restoration projects
- May include external funding such as Recreational Trail Grants

## Operational Costs

**Estimated Total Annual Expenses:** \$411,181

Operational expenses are those costs paid directly from the Green Ridge State Forest operational budget and vary annually based on approved activities.

## Staffing Costs

- Classified Salaries, Wages, and Benefits: \$230,200
- Contractual Staffing: \$96,259

Staff are responsible for implementing the Annual Work Plan, including forest management, recreation, maintenance, and administrative functions.

## Land Operations

- Estimated: \$84,722

Includes costs for:

- Equipment and vehicles
- Roadwork and construction

- Boundary maintenance and surveying
- Invasive species control
- Tree planting and site preparation
- General forest management activities

## **Forest Certification, Inventory, and Monitoring**

- Estimated: \$10,000

Supports ongoing monitoring, inventory, and research tied to forest certification requirements. Monitoring ensures forest health is evaluated and informs future management decisions.

Certification costs include audits and compliance with Sustainable Forestry Initiative® (SFI®) and Forest Stewardship Council® (FSC®) standards.

Future plans include additional staffing to support wildlife management, restoration, recreation, and monitoring activities.

## **Summary**

Projected FY2027 revenues of \$300,000–\$325,000 will support a substantial portion of annual operating costs, which are estimated at \$411,181. Remaining costs are supported through the Department's Forest Reserve Fund and other funding sources.

# Appendices

**Appendix A - Shale Barren Restoration and Management Plan**

**Appendix B - Silvicultural Prescriptions and Stand Data**

**Appendix C - Site Maps**

**Appendix D - Definitions of Silvicultural Activities**

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# Shale Barren Restoration and Management Plan

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## Project Lead:

Jason Harrison, State Restoration Ecologist  
Maryland Department of Natural Resources – Wildlife and Heritage Service  
Natural Heritage Program  
P.O. Box 68, Wye Mills, MD 21679  
410-827-8612 ext. 109

## Project Period:

July 2026 – June 2032

## Project Description

The purpose of this five-year work plan is to outline projected shale barren restoration and management activities at the following locations within Green Ridge State Forest:

- Turkey Camp Shale Barren
- Hanging Prairie Shale Barren
- Sugar Hollow
- Yonkers Bottom Shale Barren
- Maple Run
- Fossil Run
- Sulphur Run
- Carroll Road Barrens
- West Boyer Knob
- Fifteen Mile Creek North Complex
- Fifteen Mile Creek South Complex
- Potomac Bends Macrosite

All areas listed are recognized as high priority (Tier 1 or Tier 2) Ecologically Significant Areas (ESA) within Green Ridge State Forest.

## Background

Maryland shale barren (savanna) communities support a number of rare plant and insect taxa that depend on high irradiance levels and sparse leaf litter cover.

Biodiversity conservation sites for shale barren species have been transitioning from savanna to woodland condition, characterized by increased canopy closure and a near-continuous surface layer of leaf litter. Based on research and field observations, expansion of pignut hickory is a primary driver of this transition, largely due to fire exclusion and historical silvicultural practices.

Virginia pine has also established high densities on some barrens, contributing to excessive shade and litter accumulation. In addition, non-native invasive species have expanded across many sites, including:

- Tree-of-heaven (*Ailanthus altissima*)
- Japanese barberry
- Beefsteak
- Barren brome

## Management Strategy

The overall goal of this project is to restore and maintain savanna conditions across all Tier 1 and Tier 2 shale barrens, particularly those supporting the most diverse community types, including those dominated by Pennsylvania sedge.

Management actions will include:

### Woody Vegetation Control

- Treatment of pignut hickory, Virginia pine, and tree-of-heaven
- Methods include drill-and-kill, hack-and-squirt, and girdling
- Herbicides may include:
  - Imazapyr (e.g., Arsenal)
  - Triclopyr (e.g., Garlon 3-A)
  - Mixtures selected to improve effectiveness while minimizing non-target impacts

Treated trees will be tallied and left in place to minimize soil disturbance and provide wildlife habitat.

### Invasive Species Management

- Targeted control of Japanese barberry using foliar applications
- Control of species such as Japanese stiltgrass, beefsteak, mullein, and barren brome where they threaten rare species populations
- Preference for hand removal over herbicide use where feasible to avoid impacts to native and rare species
- Ongoing survey and treatment of newly identified invasive populations

All treatments will be documented, mapped, and conducted under supervision of a certified pesticide applicator.

## **Prescribed Fire**

- Prescribed fire will be implemented where appropriate on a 5–10 year interval
- Fire will be used to restore and maintain open savanna conditions and support rare species populations
- Burn objectives will be developed in coordination with Natural Heritage Program staff
- Burn plans will be reviewed by the State Restoration Ecologist and approved by the Maryland Forest Service Regional Fire Manager

## **Monitoring and Evaluation**

- Vegetation surveys
- Rare, Threatened, and Endangered (RTE) species assessments
- Photopoint monitoring
- Ongoing site condition evaluation to inform adaptive management

Monitoring will be conducted by Natural Heritage Program staff.

## **Implementation and Coordination**

Implementation will be a collaborative effort led by the Maryland Forest Service and the Natural Heritage Program. Coordination will ensure that restoration activities are integrated with other resource considerations, including forest management operations and wildlife conservation strategies.

## **Works Cited**

Turner, Mark A., William D. Gulsby, and Craig A. Harper. "Mixture of triclopyr and imazapyr more effective than triclopyr alone for hardwood forest stand improvement." *Forest Science* 67.1 (2021): 43–48.

Tyndall, R. Wayne. "Restoration Results for a Maryland Shale Barren after Pignut Hickory Management and a Prescribed Burn." *Castanea*, vol. 80, no. 2, 2015, pp. 77–94. JSTOR, <http://www.jstor.org/stable/24621222>.

## Silvicultural Prescriptions and Stand Data

Stand ID	Proposal Name	Management Acres	Harvest Acres	Forest Community Types and Development	Rare, Threatened, and Endangered Species (RTE)	Habitats and Species of Management Concern	Water Resources	Soil Resources	Historic Conditions	Silvicultural Prescription
GR-27-S-01	Sugar Bottom Road	55	37	This is a mixed oak stand within the general forest area. According to the GRSF specified 100-year rotation, this stand is mature at 107 years. The stand is also overstocked. These facts constitute the selection of this stand for regeneration silviculture treatment.	There are no known RTE species currently on or impacted by this site.	There are no known habitats or species of management concern on this site.	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 on this site will be protected under the Maryland Department of Natural Resources-Forest Service: Rutting Guidelines for Forest Operations on Maryland State Forests.	This stand likely developed over the past 107 years following clearcutting and orchard conversion. Historically this site was likely dominated by American chestnut.	Variable retention regeneration to promote mixed oak regeneration while maintaining habitat, heritage, and aesthetic values.
GR-27-S-02	Dailey Road	12	11	This is a mixed oak stand within the general forest area. According to the GRSF specified 100-year rotation, this stand is over-mature at 117 years. The stand is also overstocked.	There are no known RTE species currently on or impacted by this site.	There are no known habitats or species of management concern on this site.	Water resources will be protected on this site. All streams are identified as HCVF and protected by 50-foot buffers.	Soil resources protected under DNR rutting guidelines.	Developed following historic clearing and orchard conversion; formerly chestnut-dominated.	Variable retention regeneration.
GR-27-S-03	Green Ridge Road	60	51	This is a mixed oak stand within the general forest area. According to the GRSF specified 100-year rotation, this stand is mature at 114 years. The stand is also overstocked.	There are no known RTE species currently on or impacted by this site.	There are no known habitats or species of management concern on this site.	Water resources protected via existing access and 50-foot buffers.	Soil resources protected under DNR rutting guidelines.	Developed following historic clearing and orchard conversion; formerly chestnut-dominated.	Variable retention regeneration.
GR-27-S-04	Mountain Road	11	10	This is a mixed oak stand within the general forest area. According to the GRSF specified 100-year rotation, this stand is over-mature at 108 years. The stand is also overstocked.	There are no known RTE species currently on or impacted by this site.	There are no known habitats or species of management concern on this site.	Water resources protected with 50-foot buffers.	Soil resources protected under DNR rutting guidelines.	Developed following historic clearing and orchard conversion; formerly chestnut-dominated.	Variable retention regeneration.
GR-27-S-05	Oldtown Orleans Road	62	42.5	This is a mixed oak stand within the general forest area. According to the GRSF specified 100-year rotation, this stand is mature at 114 years. The stand is also overstocked.	There are no known RTE species currently on or impacted by this site.	There are no known habitats or species of management concern on this site.	Water resources protected with 50-foot buffers.	Soil resources protected under DNR rutting guidelines.	Developed following historic clearing and orchard conversion; formerly chestnut-dominated.	Variable retention regeneration.

Appendix C  
**Site Maps**

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# FY-2027 Proposed Harvest Sugar Bottom Road

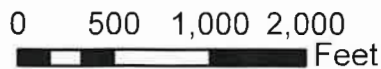


## GR-27-S-01

Compartment- 11  
 Managed Area- 55 Acres  
 Harvest Area- 37 Acres  
 Age- 107  
 Type- Mixed Oak  
 TPA- 252  
 AGS- 95 Sq. Ft.  
 Stocking- 92%  
 Growth Rate- <2%  
 Soil Type- Weikert channery silt loam  
 Site Index- 60  
 Composition- WO- 60%  
                   NRO- 11%



Scale: 1:12,000

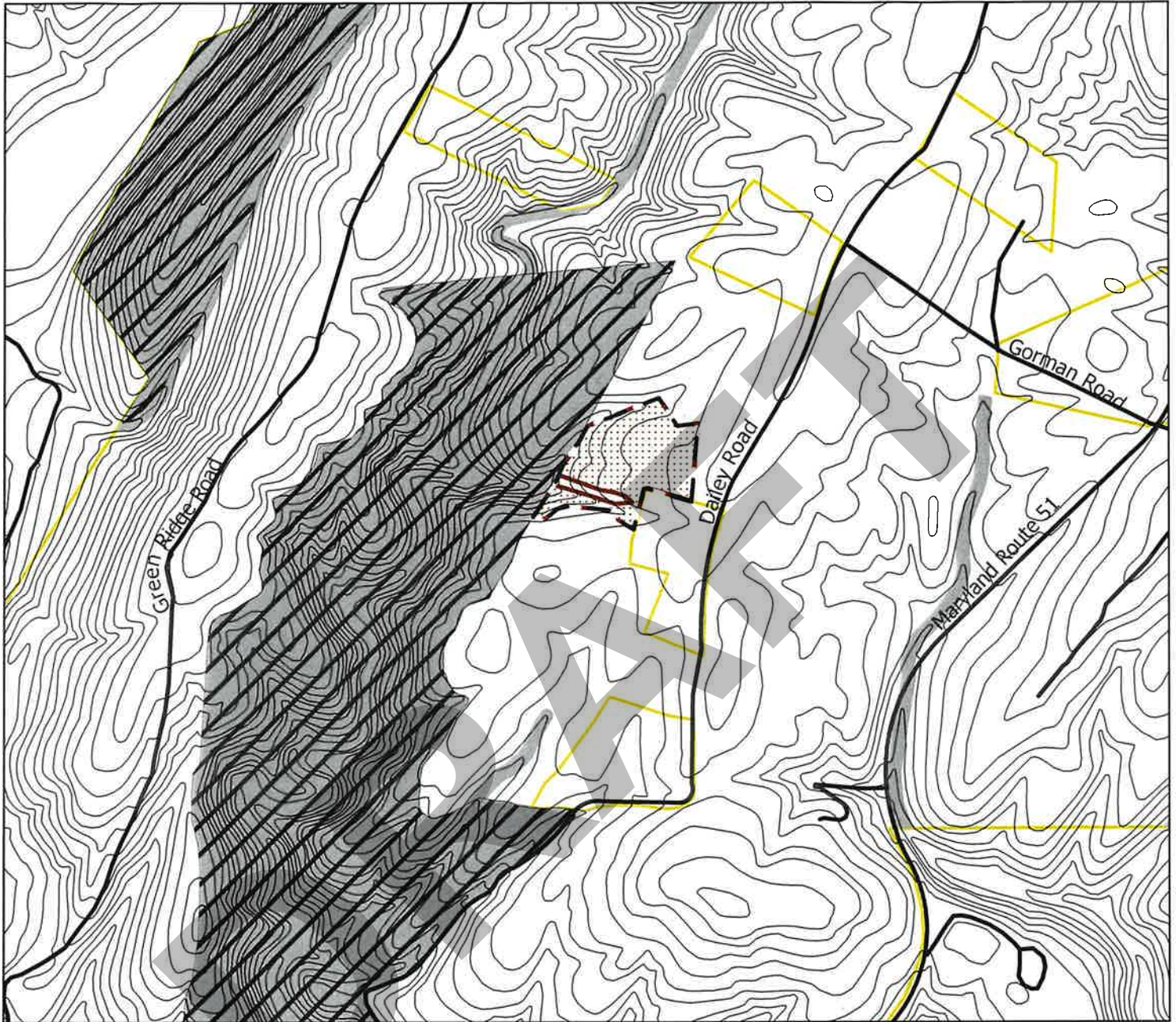


## Legend

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



# FY-2027 Proposed Harvest Dailey Road

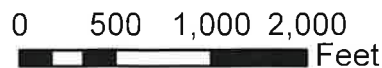


## GR-27-S-02








Compartment- 58  
 Managed Area- 12 Acres  
 Harvest Area- 11 Acres  
 Age- 117  
 Type- Hardwood Hard Pine  
 TPA- 169  
 AGS- 52 Sq. Ft.  
 Stocking- 93%  
 Growth Rate- <2%  
 Soil Type- Leehew channery fine sandy loam  
 Site Index- 43  
 Composition- WO- 31%  
                   WP- 28%  
                   CO-20%



Scale: 1:12,000



## Legend

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



# FY-2027 Proposed Harvest Green Ridge Road



## GR-27-S-03

Compartment- 26/24  
 Managed Area- 60 Acres  
 Harvest Area- 51 Acres  
 Age- 114  
 Type- Mixed Oak  
 TPA- 159  
 AGS- 118 Sq. Ft.  
 Stocking- 99%  
 Growth Rate- <2%  
 Soil Type- Berks flaggy silt loam  
 Site Index- 60  
 Composition- CO- 34%  
                   WO- 12%  
                   VP-11%



Scale: 1:12,000



## Legend

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



# FY-2027 Proposed Harvest Mountain Road

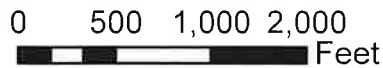


## GR-27-S-04








Compartment- 47  
 Managed Area- 11 Acres  
 Harvest Area- 10 Acres  
 Age- 108  
 Type- Mixed Oak  
 TPA- 224  
 AGS- 91 Sq. Ft.  
 Stocking- 97%  
 Growth Rate- <2%  
 Soil Type- Calvin channery loam  
 Site Index- 60  
 Composition- WO-35%  
                   BO- 25%  
                   CO- 16%



Scale: 1:12,000

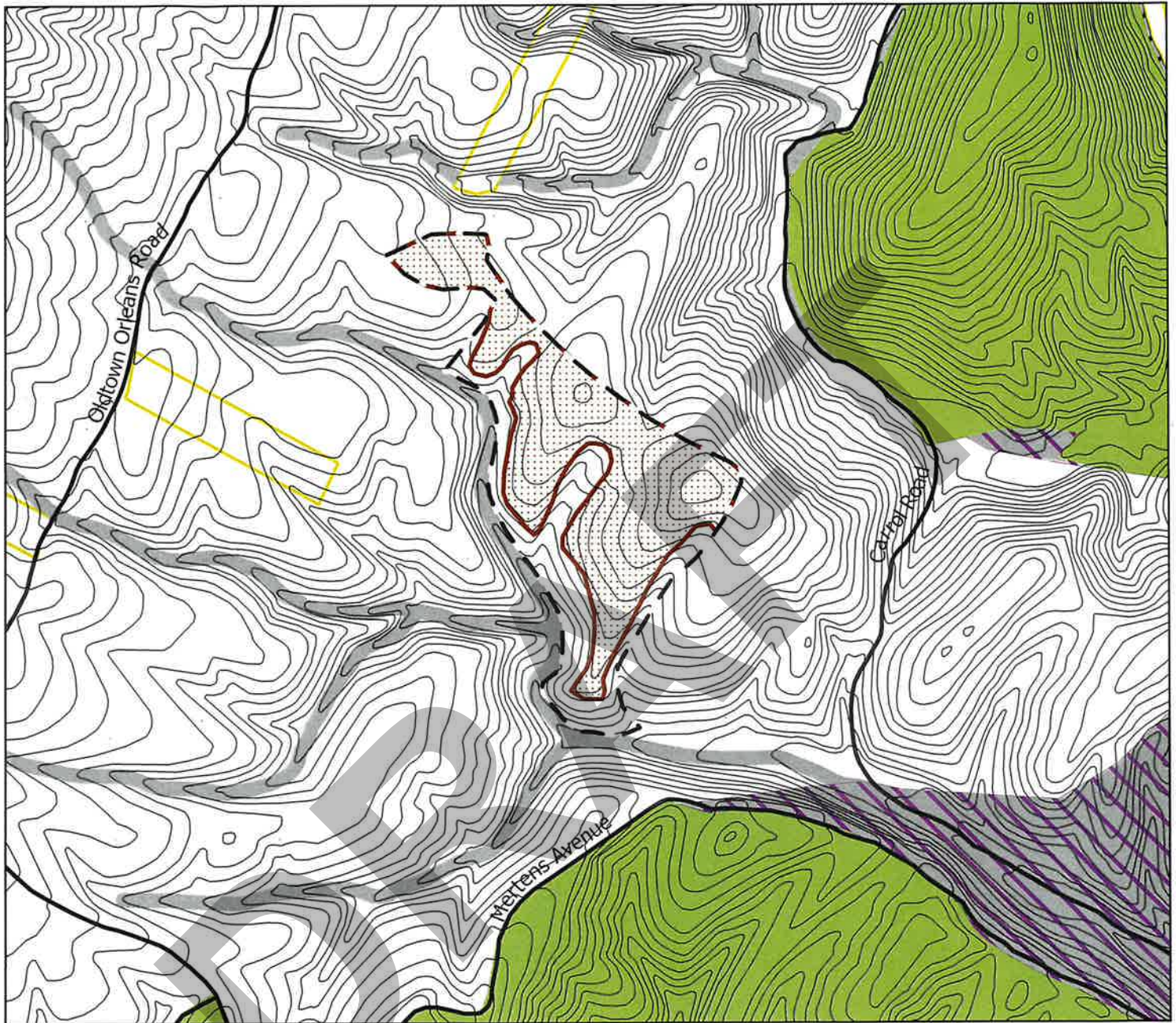


## Legend

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



# FY-2027 Proposed Harvest Oldtown Orleans Road

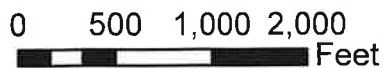


## GR-27-S-05

Compartment- 58  
 Managed Area- 62 Acres  
 Harvest Area- 42.5 Acres  
 Age- 114  
 Type- Mixed Oak  
 TPA- 229  
 AGS- 72.4 Sq. Ft.  
 Stocking- 90%  
 Growth Rate- <2%  
 Soil Type- Weikert channery silt loam  
 Site Index- 53  
 Composition- WO- 23%  
                   CO- 21%  
                   H-12%



Scale: 1:12,000



## Legend

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



Appendix D

## Definitions of Silvicultural Activities

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### **Aerial Release Spraying**

An aerial spray of herbicide used to reduce undesirable hardwood species (i.e., sweet gum and red maple) within a stand. In many cases, a reduced rate (well below the manufacturer's recommendation) is applied to selectively control undesirable species while maintaining desirable species (e.g., yellow poplar and oaks). All aerial applications are based on precision GPS mapping and include on-board flight GPS controls. GPS-generated maps showing each pass of the aircraft are provided by the contractor to demonstrate precision application. Aerial applications are not allowed in specially designated wetland areas or within 150 feet of riparian areas on the forest.

### **First Commercial Thinning**

Usually performed on plantations 20–25 years old to improve forest health and promote development of larger trees over a shorter period of time. In plantations, this is accomplished by removing every 5th row of trees and selectively thinning (poor form and unhealthy trees) between rows. In naturally regenerated stands, thinning corridors are established every 50 feet, with selective thinning along both sides. Approximately 30–40% of total stand volume is removed. Stocking levels are determined using a loblolly pine stocking chart based on basal area, DBH, and trees per acre (USDA Forest Service, 1986). Crown ratio and site index are also considered when determining whether thinning is appropriate.

### **Pre-Commercial Thinning**

The removal of trees to reduce overcrowding in young stands, typically 6–10 years of age. This treatment concentrates growth on more desirable trees and improves overall stand health. The number of trees retained depends on growth rates, species composition, and site productivity. This activity is conducted with hand-held power tools rather than heavy equipment, minimizing soil disturbance.

### **Prescribed Fire**

Fires deliberately set by Maryland Forest Service personnel under appropriate weather conditions to achieve specific management objectives. Prescribed fire is used to enhance wildlife habitat, encourage fire-dependent plant species, reduce fuel loads that contribute to wildfire risk, and prepare sites for planting.

## **Regeneration Harvest**

A harvest that removes up to 95% of a stand in a single entry while retaining at least 5% in green tree retention areas. The placement of retention areas is influenced by riparian zones, soil types, Ecologically Significant Areas, snags, and legacy trees. Coarse woody debris is left evenly across the site to decompose. This method is used to regulate forest age structure and maintain a healthy and vigorous forest condition. It is most commonly applied in General Management and ESA Zone 3 areas, but may also be used in ESA, DFS, and Core FIDS areas. Regeneration is typically achieved through natural seeding from adjacent stands or residual trees; if adequate regeneration is not established within three years, hand planting is required (except in certain restoration projects).

## **Reforestation**

Reestablishment of forest cover through natural regeneration or artificial methods (hand planting), often accompanied by site preparation in the same fiscal year. Site preparation methods are determined through field evaluation. Reforestation may also include grass control using herbicides applied by ground crews or aerial application, with site-specific application rates.

## **Riparian Buffer Zone Establishment**

The establishment and management of vegetated areas adjacent to perennial or intermittent water bodies to protect aquatic, wetland, shoreline, and terrestrial environments and ultimately the Chesapeake Bay. Buffer boundaries are marked, surveyed using GPS, and mapped in GIS. Selective harvesting and thinning may occur to promote a mixed hardwood-pine composition.

## **Second Commercial Thinning**

Usually performed on stands 35–45 years old to extend rotation age and promote the development of larger, healthier trees. This treatment may also improve habitat for Delmarva Fox Squirrel (DFS) and Forest Interior Dwelling Species (FIDS). Approximately 25–30% of total stand volume is removed.

## **Seed Tree Harvest**

A regeneration method in which 12–14 healthy dominant trees per acre are retained as a seed source. These trees may remain for an additional rotation or be removed once adequate regeneration is established. This method is particularly effective for regenerating loblolly pine in the Coastal Plain, where seed production is consistently high (Edwards, 1987; Schulz, 1997).

## **Shelterwood Harvest**

A method involving the gradual removal of a stand through a series of partial cuttings over a portion of the rotation (Smith, 1986). The number of trees retained in initial stages depends on average tree size

(DBH). This method is most effective when overstory trees are more than 30 years old and within their peak seed production period (Schulz, 1997).

## **Single and Group Selection Harvests**

The removal of individual trees and/or small groups of trees within a stand to distribute age classes and adjust species composition. Target residual stocking is a fully stocked basal area of merchantable pines between 60 and 75 ft<sup>2</sup>/acre, with two-thirds to three-quarters in sawtimber size classes. Harvest entries typically occur every 5–10 years and are repeated indefinitely to allow natural regeneration without complete overstory removal (Baker et al., 1996; Schulz, 1997). This method may be applied in general management, riparian buffers, ESA, DFS, or FIDS areas.

## **Site Preparation / Regeneration**

Preparation of harvested areas to promote regeneration, with natural regeneration as the preferred method. Alternative methods include prescribed burning, herbicide application, light mechanical disturbance, or combinations of these treatments, followed by planting of native pines and/or hardwoods as dictated by management objectives and site conditions.

## **Variable Retention Harvest**

A harvest method that removes approximately 80% of a stand while retaining about 20% as wildlife corridors, islands, visual buffers, and legacy trees. Coarse woody debris is left across the site to decompose. This method is used to regulate forest age structure, maintain forest health, and support regeneration of mixed natural stands, particularly within ESA, DFS, and Core FIDS areas. It is also used to address imbalances in age class distribution, including a high proportion of young stands. Regeneration is typically achieved through natural seeding; if not successful within three years, hand planting may be required (except in certain restoration projects).