



**County of Albemarle**  
**Community Development Department - Planning Division**

**Scott Clark**  
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## MEMORANDUM

To: Albemarle Conservation Easement Authority  
From: Scott Clark, Secretary  
Re: PRF201400004 Clifton Lake - Kostelac Timbering Plan  
Date: August 4, 2022

### Background

In December, 2014, a 64.5-acre easement on parcels 79C-1 and 79-23 was donated to the Authority. The property included two parcels and, as permitted, has been reconfigured into a different two-parcel layout and conveyed to two separate owners. The current request relates to the southern parcel, 79C-1 (39.31 acres).

The deed requires that all timbering on the property be carried out according to a forest stewardship management plan, and that a pre-harvest plan be submitted to the Authority for approval. The deeds states that the Authority's approval of the pre-harvest plan "...shall be limited to determination of whether or not the pre-harvest plan is in compliance with the Forest Stewardship Management Plan and is consistent with the purposes and restrictions of this easement."

The management plan and pre-harvest plan, both prepared by Mr. Paul Haney, are attached to this memo.

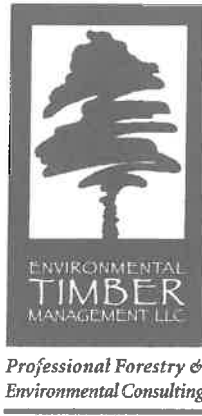
### Discussion

Page 15 of the attached Forest Stewardship Management Plan identifies the proposed harvest type as "selective harvest."

The attached pre-harvest plan and map identify the areas available for this harvest, correctly accommodating the 200-foot riparian/pond buffers established in the deed of easement. The pre-harvest plan also identifies best management practices to be followed during after the proposed harvest.

### Recommendation

Staff finds no conflict between the proposed pre-harvest plan and the restrictions of the easement, and recommends that the Authority approve the proposed pre-harvest plan.



# Forest Stewardship Management Plan

## Dominique Kostelac

June 28, 2022

# Virginia Forest Stewardship Management Plan

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## ABOUT THIS PLAN

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This Forest Stewardship Plan was developed to help guide you in the active management of the natural resources on your property. The plan is based upon the objectives you identified as being important to you. All of the management recommendations are for your consideration. The stand data table figures in this plan are for planning purposes ONLY and not intended for making economic decisions where more detailed information would be required.

## PRIMARY GOALS THAT YOU IDENTIFIED FOR MANAGING THE PROPERTY

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1. Managing timber for Income
2. Forest stand management
3. Soil and water conservation
4. Maintenance of a scenic forest

## INTRODUCTION

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This multiple-use forest management plan covers the examination of approximately 39.3 acres of forestland in Albemarle County, Virginia on a tract identified as Parcel 79C-1. The management recommendations, given on the following pages, were developed for your specific parcel. Boundaries and acres are only estimates derived from aerial photographs and county GIS files.

By having this plan developed, your property is now eligible to become a certified Tree Farm through the American Forest Foundation's Tree Farm System. It also qualifies as a Natural Resource and Conservation Service Conservation Activity Plan #106. Contact your local VDOF Forester to learn more about the benefits of these two programs.

## TRACT LOCATION

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This tract is located at the south end of Shadwell Road.

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Dominique Kostelac

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## PROPERTY OVERVIEW

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The property is at the end of and on both sides of a ridge. Hurtt's Pond forms the western boundary while most of the eastern boundary is a small creek. The property has one forest type, which is primarily a mature mixed oak stand with poplar becoming more prevalent in the hollows and on the lower slopes. There are small patches of overmature Virginia pine, much of which came down in the recent storms.

Shadwell Road dead ends at the property, but a private road turns to the west essentially forming the northern boundary. This road has two branches going to the south along the higher areas.

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

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## STAND ONE – OPERABLE FOREST

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<b>Descriptions and Recommendations:</b>	<p>As described above, this is a mixed oak forest with poplar on the slopes and along the drains. There are some small patches of Virginia pine, most of the pine is on the ground.</p> <p>A selective harvest of mature sawtimber would harvest most of the value out of this stand, while opening the forest floor up to sunlight to encourage tree regeneration.</p>
<b>Acres:</b>	26.2 acres
<b>Forest Type:</b>	Mixed oak and poplar
<b>Species Present:</b>	Red and white oaks, yellow poplar, red maple, hickory, and beech.
<b>Age:</b>	80 to 100 years.
<b>Stand History:</b>	The stand appears to have been relatively undisturbed for many years.
<b>Size:</b>	Most of the trees are between 16 and 26 inches dbh (diameter breast height, measured 4.5 feet above ground level).
<b>Tree Quality:</b>	Good.
<b>Stocking/Density:</b>	Well stocked.
<b>Growth Rate &amp; Vigor:</b>	Good but slowing. Some mortality in the larger oaks.
<b>Site Quality &amp; Soils:</b>	Most of the soil is a Bugley channery silt loam, with a red oak site index of 65. This means that a red oak that was free to grow would be 65 feet tall at 50 years of age. This is a poor to moderate growth rate.
<b>Aspect &amp; Topography:</b>	A ridge sloping down to a creek on the east and south sides.
<b>Water Resources:</b>	A creek is the boundary and two small drains within the stand.
<b>Invasive Species:</b>	Not a noticeable problem.
<b>Wildlife Habitat:</b>	Good habitat for most wildlife species.

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

**Dominique Kostelac**

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- Recreation/Aesthetics:** Attractive appearing stand with opportunities for hunting, hiking, wildlife watching.
- Cultural Resources:** None noticed.
- T&E Species Present:** None observed.
- Fire Risk:** Low, except for small areas of down Virginia pine.
- Unique Natural Features:** None.
- Recommendations:** A selective harvest of mature sawtimber.

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Dominique Kostelac

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## STAND TWO – LAKE BUFFER

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**Descriptions and Recommendations:** As described above, this is a mixed oak forest with poplar on the slopes and along the drains. There are some small patches of Virginia pine, most of the pine is on the ground.

This stand should have no management activities at this time. It is protecting the water of the lake and the appearance from across the lake.

<b>Acres:</b>	6.9 acres
<b>Forest Type:</b>	Mixed oak and poplar
<b>Species Present:</b>	Red and white oaks, yellow poplar, red maple, hickory, and beech.
<b>Age:</b>	80 to 100 years.
<b>Stand History:</b>	The stand appears to have been relatively undisturbed for many years.
<b>Size:</b>	Most of the trees are between 16 and 26 inches dbh (diameter breast height, measured 4.5 feet above ground level).
<b>Tree Quality:</b>	Good.
<b>Stocking/Density:</b>	Well stocked.
<b>Growth Rate &amp; Vigor:</b>	Good but slowing. Some mortality in the larger oaks.
<b>Site Quality &amp; Soils:</b>	Most of the soil is a Bugley channery silt loam, with a red oak site index of 65. This means that a red oak that was free to grow would be 65 feet tall at 50 years of age. This is a poor to moderate growth rate.
<b>Aspect &amp; Topography:</b>	The slope on the east side of Hurtt's Pond..
<b>Water Resources:</b>	Hurtt's Pond.
<b>Invasive Species:</b>	Not a noticeable problem.
<b>Wildlife Habitat:</b>	Good habitat for most wildlife species.

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

**Dominique Kostelac**

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- Recreation/Aesthetics:** Attractive appearing stand with opportunities for hunting, hiking, wildlife watching.
- Cultural Resources:** none noticed.
- T&E Species Present:** none observed.
- Fire Risk:** Low, except for small areas of down Virginia pine.
- Unique Natural Features:** Hurtt's Pond
- Recommendations:** No activity is recommended.



# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

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## **STAND THREE - POND**

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**Descriptions and Recommendations:** A pond.

**Acres:** 4.3 acres

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

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## **COST-SH-ARE ASSISTANCE PROGRAMS**

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Cost-share assistance programs may be available to help defray reforestation project costs. Programs generally may pay between 35 percent and 75 percent of the costs involved in certain projects. Funds are available on a first-come, first-served basis and must be approved prior to the start of any management work. Please check with your local Virginia Department of Forestry representative for availability of programs and funds.

## **CULTURAL AND HISTORIC RESOURCES**

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Cultural resources refer to landscapes, structures, archeological artifacts and vegetation that represent a culture or society of historic value. Federal and state laws protect some archeological, cultural and historic sites from disturbances, destruction or removal. It is critical to understand where such sites may be located prior to ground-disturbing forest management activities.

Historic and cultural resources are a vital link to past land-use practices in Virginia. While no sites were identified during my visits, old records for the area may exist. The Department of Historic Resources offers programs which survey, catalog and encourage the preservation of historic resources. This Department maintains records of historic sites and these records are available to the general public. While no sites were identified during my visits, old records for the area may exist. To check if any information is in the database or to request a survey of the area please contact: Department of Historical Resources; 221 Governor Street; Richmond, VA 23219; (804) 786-3143.

## **THREATENED OR ENDANGERED SPECIES**

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No endangered or protected species were observed on the property. For more information regarding threatened and endangered species, or any regulations involved with them please contact the Virginia Department of Wildlife Resources, P. O. Box 90778, Henrico, VA 23228-0778; (804) 367-1000.

## **FOREST HEALTH AND PROTECTION**

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A healthy forest is a forest that possesses the ability to sustain the unique species composition and processes that exist within it. Active management of the forest helps to maintain and improve its productive capacity, taking into account all the factors that influence the resource elements addressed in the Forest Stewardship Plan. Silviculture harvest practices and the use of prescribed fire as a tool can reduce risk from wildfire, pests and invasive species, and ensure long-term forest health and vigor. Forest health

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protection issues are often directly related to the active management of insects and diseases, invasive plants and wildfire. Annual inspections for signs of insects, diseases or invasive plant infestations should be completed by the landowner.

No disease or insect problems were identified on the property. Continued monitoring is the best preventative measure to ensuring forest health. If any unusual problems are found, please contact the Virginia Department of Forestry, 900 Natural Resources Dr. #800, Charlottesville, VA 22903; (434) 977-6555 for an examination.

## **FIRE**

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Prescribed fire, also known as “controlled burn,” refers to the controlled application of fire by a team of fire experts under specified weather conditions that help restore health to fire-adapted environments to obtain specific management objectives. Prescribed burning is a critical management tool that enhances and benefits forests, grasslands and wildlife habitats. Prescribed fire is an effective tool in site preparing harvested areas for replanting tree seedlings as well as reducing excessive amounts of hazardous fuel build up and catastrophic damage of wildfire on our lands and surrounding communities. Prescribed fire is one of the most effective tools we have in preventing the outbreak and spread of wildfires.

Protection of your property from wildfire is essential. Wildfire rapidly destroys valuable timber, wildlife and property. From February 15 through April 30, open air fires are not permitted within 300 feet of woodland, brushland or field containing dry grass or other flammable material between midnight and 4:00 p.m. The number one cause of wildland fire in Virginia is debris burning. In other words, MOST of the fires that occur could have been prevented. In the case of an emergency, please report all woods fires to your local County Fire Dispatch Center at 9-1-1.

## **CARBON CYCLE**

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All forest plants and soils “store” carbon, so active forest management influences the natural cycles of that storage in both living and dead plant material. The removal of carbon from the atmosphere is the process called carbon sequestration. Carbon sequestration is the process by which atmospheric carbon dioxide is consumed by trees, grasses and other plants through photosynthesis and stored as carbon in biomass (trunks, branches, foliage and roots) and soils. Sustainable forestry practices can increase the ability of forests to sequester atmospheric carbon while enhancing other ecosystem services, such as improved soil and water quality. Planting new trees and improving forest health through thinning and prescribed burning are some of the ways to increase forest carbon in the long run. Harvesting and regenerating forests can also result in net carbon sequestration in wood products and new forest growth.

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

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## WETLANDS

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Wetlands include areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Wetlands are also highly diverse and productive ecosystems with emphasis on supporting timber production, water quality protection, wildlife habitat and more. It is important for you to be aware of and understand the laws and regulations related to forestry practices before engaging in wetland management activities on your land. Chapter 9 of the publication “Virginia’s Forestry Best Management Practices for Water Quality Technical Manual, 2011” offers many of the guidelines for forestry activities within a wetland. The publication can be found on the web at: <http://www.dof.virginia.gov/print/water/BMP/Technical/BMP-Technical-Guide.pdf>. Your local Virginia Department of Forestry forester can provide information on forestry practices permitted in wetlands.

## BIOLOGICAL DIVERSITY

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Biodiversity is the variety of life (including diversity of species, genetic diversity and diversity of ecosystems) and the processes that support it. Landowners can contribute to the conservation of biodiversity by providing diverse habitats. It is important to select management options that offer the greatest opportunities for promoting wildlife habitats and conserving biodiversity while fulfilling other land management objectives. Some of these options include, but are not limited to, the conservation of wildlife habitats and biodiversity by:

1. Managing stand-level habitat features.
2. Promoting aquatic and riparian areas.
3. Managing landscape features.
4. Conserving rare species and communities.
5. Protecting special features and sites.

## AGROFORESTRY/SILVOPASTURE

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**Agroforestry** intentionally combines agriculture and forestry to create integrated and sustainable land-use systems. Agroforestry takes advantage of the interactive benefits from combining trees and shrubs with crops and/or livestock. In the United States, agroforestry is commonly divided into five main practices: Windbreaks, Alley Cropping, Silvopasture, Riparian Forest Buffers and Forest Farming.

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**Silvopasture** combines trees with forage and livestock production. The trees are managed for high-value saw logs while providing shade and shelter for livestock and forage, reducing stress and sometimes increasing forage production. Silvopasture is increasingly popular in the southeastern region of the United States as a way to supplement timber income on small pine plantations and some hardwood stands. However, there can be problems with combining the two management schemes if it is not done correctly or actively managed. This management system requires active rotational grazing to avoid damage to the standing trees and allowing the forage to recover. Before any new silvopasture system is established, you should thoroughly explore the associated economic and environmental considerations along with local land use, zoning, cost-share programs and tax regulations.

## HIGH CONSERVATION VALUE FORESTS

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These are forests of outstanding and critical importance due to their environmental, social, biodiversity, or landscape values. High Conservation Value Forests are considered critically important because they contain a unique combination of values. These can be social, cultural, biodiversity and environmental values.

**Social or cultural values** are aspects of a forest that are critical to the surrounding community's identity. They can range from significant historical features, such as sacred sites or burial grounds, to the forest's role within the community — for example, whether local residents have traditionally depended on the forest for berries, firewood or other products.

**Biodiversity values** are critical to preserving local flora and fauna. Such values could include rare ecosystems or habitats, or unusual communities of plant or animal species. Keep in mind that these ecosystems and species need not be on state or Federal Threatened or Endangered Species lists — they may just be considered rare regionally or locally.

**Environmental values** can benefit the whole community. Some examples are forests whose presence helps protect local watersheds or prevent erosion in vulnerable areas.

When forestry professionals and other experts evaluate a forest as a potential HCVF, they look at the entire landscape — not just a single stand of trees — and consider all of these values.

Places that combine and contain these features are rare, so it's especially important to protect them. (*American Forest Foundation*)

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## INTEGRATED PEST MANAGEMENT

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A pest control strategy may use a variety of complementary strategies including mechanical devices, physical devices, genetic, biological or cultural management and chemical management. (U.S. EPA)

Integrated Pest Management (IPM) combines several appropriate pest control tactics into a single plan to reduce pests and their damage to an acceptable level. Using many different tactics to control a pest problem causes the least disruption to the living organisms and non-living surroundings at the treatment site. Relying only on pesticides for pest control can cause pests to develop resistance to pesticides, can cause outbreaks of other pests, and can harm surfaces and non-target organisms. With some types of pests, using only pesticides achieves very poor control.

To solve pest problems, first:

- Identify the pest or pests and determine whether control is warranted for each,
- Determine pest control goals,
- Know what control tactics are available,
- Evaluate the benefits and risks of each tactic or combination of tactics,
- Choose the most effective strategy that causes the least harm to people and the environment,
- Use each tactic in the strategy correctly, and
- Observe local, state, and Federal regulations that apply to the situation.

The best strategy for each situation depends on the pest and the control needed.

*(Michael J. Weaver, Patricia A. Hipkins, Virginia Tech Pesticides Program, 2013)*

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

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## LEGACY PLANNING

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### YOUR LAND LEGACY

Owning forestland is a privilege. Whether you are a first generation owner or part of a long line of family owners, your decisions have lasting impacts. Perhaps the greatest opportunity you have to impact the future is by answering this question; “What will happen to this land after my tenure?” Will it become one of the thousands of properties sold each year and subsequently developed, never to return to woodland, or will it remain intact, in forest and family owned?

Most landowners desire to pass their land forward to the next generation of family members, yet few take the next steps to insure that exchange will happen. The plan you now hold helps to guide your management decisions to reach certain property management goals. Likewise, a legacy, or succession plan helps to guide you and your family along a path to successfully transferring not only land, but also values & ethics, to your next generation.

Do you need a legacy plan? Consider these questions:

1. Do you know what you want to have happen to you land?
2. Are the people who need to know this answer aware of your desires?
3. Do you know what other members of the family want to have happen?
4. Is there strong agreement within the family on these matters?
5. Have you considered various ownership tools like LLC's & Trusts?

If you answered “NO” to any of these questions, it may be worthwhile to learn more about this topic. Many estate planning resources exist both in print and online.

A good place to start for Virginia landowners is this following website <http://www.ext.vt.edu/topics/environment-resources/legacy-planning/index.html>. On this website is a list of resources that have been critically reviewed for accuracy by VDOF, VT and VCE. For printed material, contact the Generation NEXT program coordinator at (540)231-6391 or Virginia Department of Forestry at (434)220-9182.

**VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN**

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<b>10-YEAR RECOMMENDED SCHEDULE OF MANAGEMENT ACTIVITIES</b>						
Year	Stand	Activity	*Possible Cost Share	Future Stand Conditions		
				Year	Stocking	Species
2022	One	Selective Harvest	No	2032	Good	Poplar, mixed oak
This schedule may need to be adjusted depending on financial needs, timber markets, timing of actual harvest and availability of contractors.						

\*Cost-share program eligibility requirements vary between the programs and funding may not be available. Contact your local VDOF forester for up-to-date information about the various programs.



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RT – Reforestation of Timberlands Program

EQIP – Environmental Quality Incentives Program

CRP – Conservation Reserve Program

WHIP – Wildlife Habitat Incentives Program

AgBMP – Agricultural Best Management Practices Program

CREP – Conservation Reserve Enhancement Program

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

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## STAND DATA SUMMARY

Stand	Forest Type	Acres	Year Estab.	Age	Site Index	Avg. DBH	Stocking/ Density	Stand Quality	Annual Growth	Other Important Stand Attributes (nat. regen., invasive plants, etc.)
1	Mixed oak/poplar	26.2	1920	100	65	18	high	Good	Fair	Limited natural regeneration
2	Mixed oak/poplar	6.9	1920	100	65	18	high	Good	Fair	Limited natural regeneration
3	Pond	4.3								

**Parcel:** Identifying letter or number for each parcel      **Site Index:** For dominant species present, indicate base age

# VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

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**Forest Type:** Pine – by primary species      **Stocking/Density:** Basal area or trees per acre

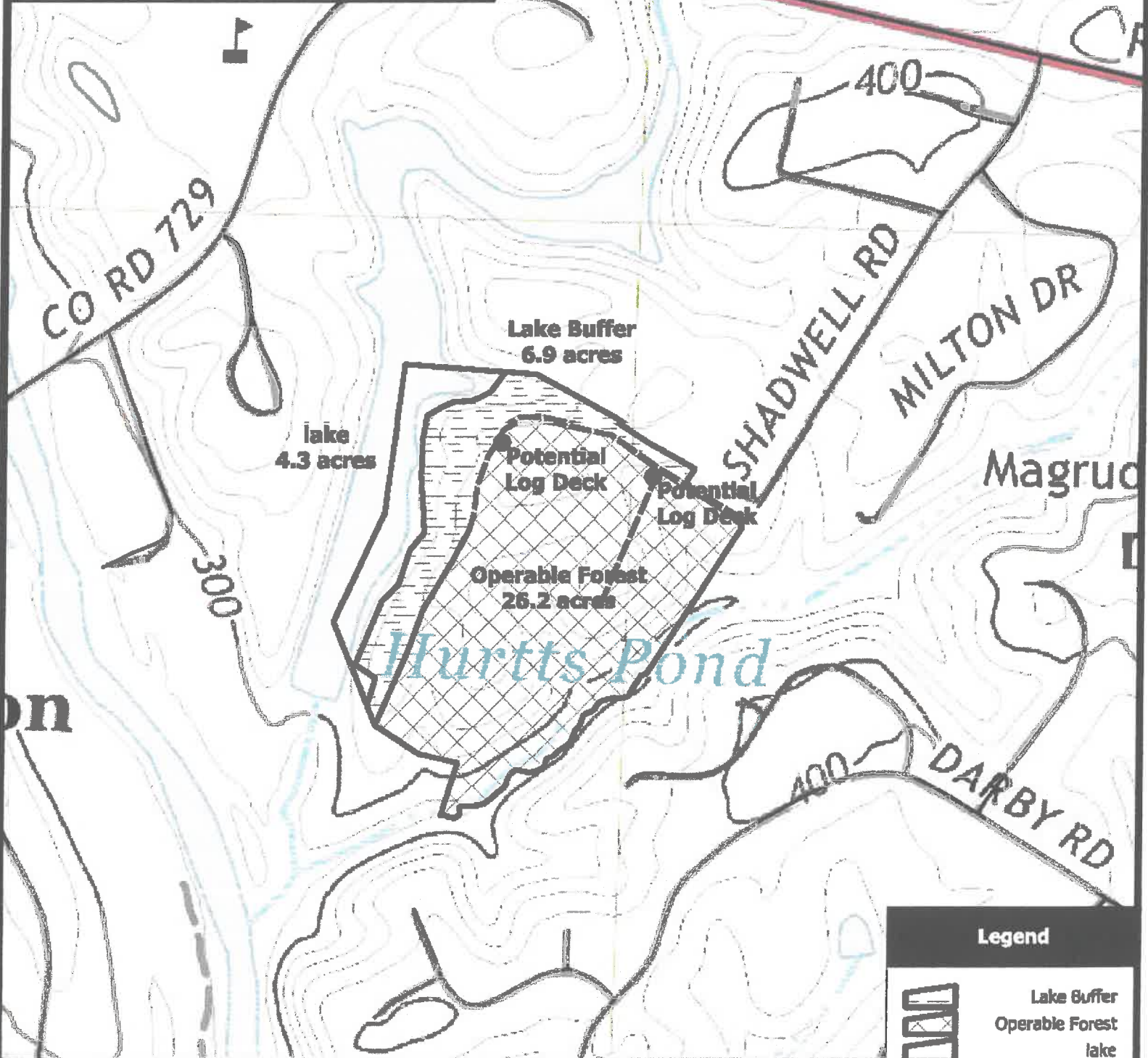
**Pine/Hardwood** – by primary species or major species group      **Other Important Stand Attributes:** Is natural regeneration present?

**Upland Hardwood** – by pure species or major species group      Are there invasive plant species present?

**Bottomland Hardwood** – by pure species or major species group      (species and level of presence – heavy, moderate, low)



Dominique  
Kostelac Tract  
Albemarle Co  
Virginia  
June 28, 2022



**Legend**

-  Lake Buffer
-  Operable Forest
-  lake
-  Existing roads
-  Harvest Area
-  Property Boundary

2000 ft 29



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Albemarle County, Virginia**

**Kostelac**



June 28, 2022

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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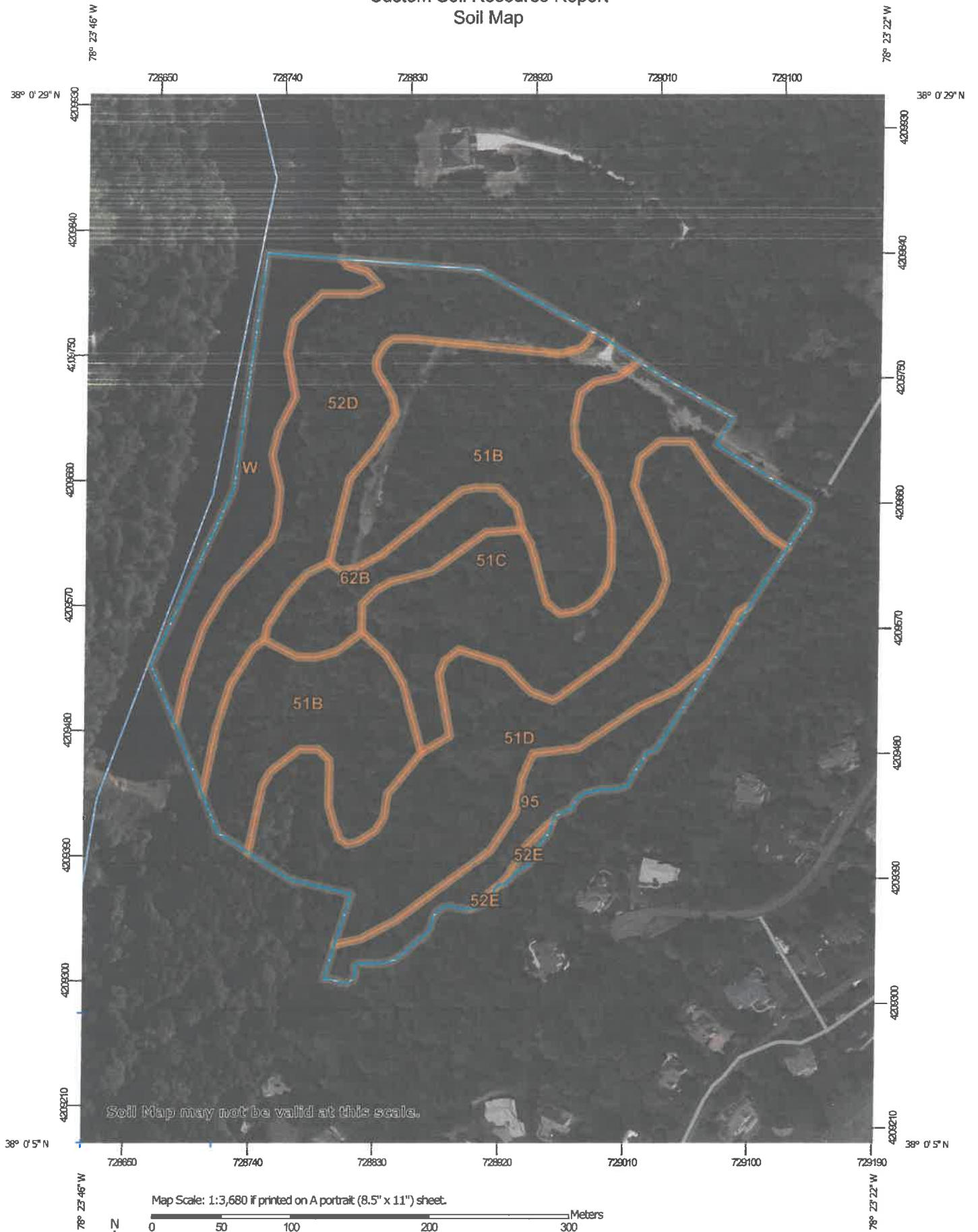


# Soil Map

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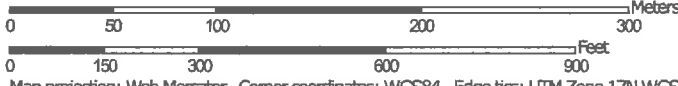
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map












































Soil Map may not be valid at this scale.

Map Scale: 1:3,680 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 17N WGS84

## MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Area of Interest (AOI)	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 <b>Special Point Features</b>	 <b>Special Line Features</b>
 Blowout	 Streams and Canals
 Borrow Pit	 <b>Water Features</b>
 Clay Spot	 <b>Transportation</b>
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	 <b>Background</b>
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projector that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Albemarle County, Virginia  
 Survey Area Data: Version 15, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 8, 2020—Sep 23, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
51B	Bugley channery silt loam, 2 to 7 percent slopes	9.7	25.9%
51C	Bugley channery silt loam, 7 to 15 percent slopes	6.4	17.0%
51D	Bugley channery silt loam, 15 to 25 percent slopes	8.6	22.9%
52D	Bugley very channery silt loam, 15 to 25 percent slopes	6.0	16.1%
52E	Bugley very channery silt loam, 25 to 45 percent slopes	0.1	0.3%
62B	Buffstat silt loam, 2 to 7 percent slopes	1.8	4.7%
95	Hatboro silt loam, 0 to 2 percent slopes, occasionally flooded	2.2	6.0%
W	Water	2.7	7.2%
<b>Totals for Area of Interest</b>		<b>37.4</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a

## Custom Soil Resource Report

given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Albemarle County, Virginia

### 51B—Bugley channery silt loam, 2 to 7 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2v7jg  
*Elevation:* 360 to 1,540 feet  
*Mean annual precipitation:* 25 to 65 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 195 to 231 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Bugley and similar soils:* 80 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Bugley

##### Setting

*Landform:* Interfluves  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sercicite schist

##### Typical profile

*Ap - 0 to 6 inches:* channery silt loam  
*Bw - 6 to 18 inches:* very channery silt loam  
*R - 18 to 79 inches:* bedrock

##### Properties and qualities

*Slope:* 2 to 7 percent  
*Depth to restrictive feature:* 15 to 20 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Very low (about 2.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

## 51C—Bugley channery silt loam, 7 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v7jh  
*Elevation:* 360 to 1,540 feet  
*Mean annual precipitation:* 25 to 65 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 195 to 231 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Bugley and similar soils:* 80 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bugley

#### Setting

*Landform:* Interfluves  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sercite schist

#### Typical profile

*Ap - 0 to 6 inches:* channery silt loam  
*Bw - 6 to 18 inches:* very channery silt loam  
*R - 18 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 7 to 15 percent  
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Very low (about 2.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

## 51D—Bugley channery silt loam, 15 to 25 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v7jj  
*Elevation:* 360 to 1,540 feet  
*Mean annual precipitation:* 25 to 65 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 195 to 231 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Bugley and similar soils:* 80 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bugley

#### Setting

*Landform:* Interfluves  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sercite schist

#### Typical profile

*Ap - 0 to 6 inches:* channery silt loam  
*Bw - 6 to 18 inches:* very channery silt loam  
*R - 18 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Very low (about 2.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No



## 52D—Bugley very channery silt loam, 15 to 25 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v7jl  
*Elevation:* 360 to 1,540 feet  
*Mean annual precipitation:* 25 to 65 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 195 to 231 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Bugley and similar soils:* 80 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bugley

#### Setting

*Landform:* Interfluves  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sercite schist

#### Typical profile

*Ap - 0 to 6 inches:* channery silt loam  
*Bw - 6 to 18 inches:* very channery silt loam  
*R - 18 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Very low (about 2.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

## 52E—Bugley very channery silt loam, 25 to 45 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v7jm  
*Elevation:* 360 to 1,540 feet  
*Mean annual precipitation:* 25 to 65 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 195 to 231 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Bugley and similar soils:* 90 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bugley

#### Setting

*Landform:* Interfluves  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sercite schist

#### Typical profile

*Ap - 0 to 6 inches:* channery silt loam  
*Bw - 6 to 18 inches:* very channery silt loam  
*R - 18 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 25 to 45 percent  
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Very low (about 2.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

## 62B—Buffstat silt loam, 2 to 7 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v7jt  
*Elevation:* 360 to 1,540 feet  
*Mean annual precipitation:* 25 to 65 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 195 to 231 days  
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Buffstat and similar soils:* 80 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Buffstat

#### Setting

*Landform:* Interfluves  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sercite schist

#### Typical profile

*Ap - 0 to 8 inches:* silt loam  
*Bt - 8 to 39 inches:* silty clay loam  
*C - 39 to 50 inches:* channery silt loam  
*R - 50 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 2 to 7 percent  
*Depth to restrictive feature:* 40 to 60 inches to paralithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 1.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

## 95—Hatboro silt loam, 0 to 2 percent slopes, occasionally flooded

### Map Unit Setting

*National map unit symbol:* 2v7kb  
*Elevation:* 360 to 1,540 feet  
*Mean annual precipitation:* 25 to 65 inches  
*Mean annual air temperature:* 54 to 59 degrees F  
*Frost-free period:* 195 to 231 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Hatboro, occasionally flooded, and similar soils:* 80 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hatboro, Occasionally Flooded

#### Setting

*Landform:* Flood plains  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from igneous rock

#### Typical profile

*A - 0 to 10 inches:* silt loam  
*Bg - 10 to 52 inches:* silty clay loam  
*Cg - 52 to 79 inches:* sandy loam

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)  
*Depth to water table:* About 0 to 30 inches  
*Frequency of flooding:* NoneOccasional  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* High (about 11.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* B/D  
*Hydric soil rating:* Yes

## **W—Water**

### **Map Unit Setting**

*National map unit symbol:* kbgk

*Mean annual precipitation:* 25 to 65 inches

*Mean annual air temperature:* 54 to 59 degrees F

*Frost-free period:* 195 to 231 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Water:* 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

# **Soil Information for All Uses**

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## **Suitabilities and Limitations for Use**

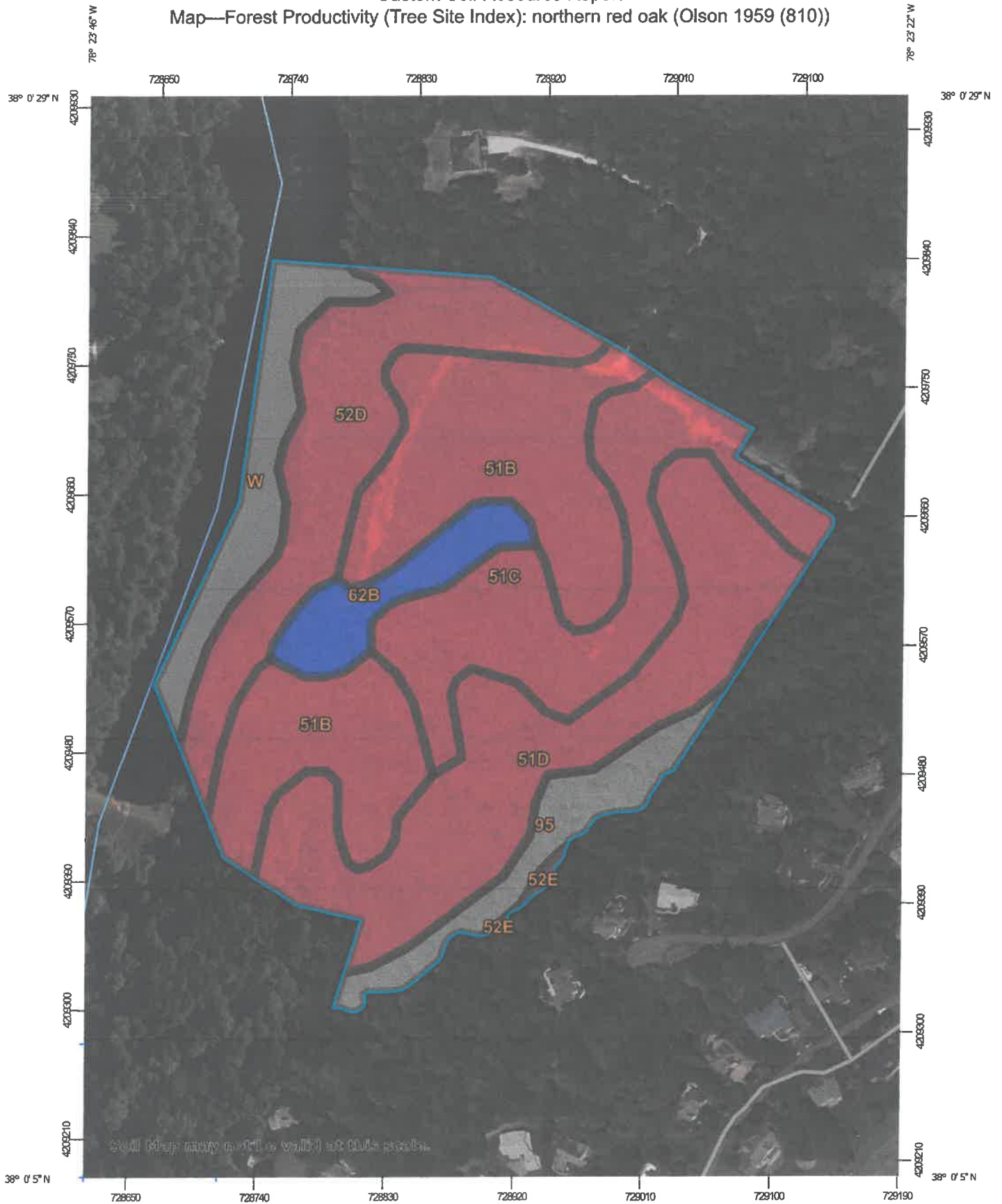
The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

## **Vegetative Productivity**

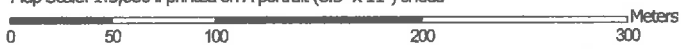
Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

## **Forest Productivity (Tree Site Index): northern red oak (Olson 1959 (810))**

Custom Soil Resource Report  
 Map—Forest Productivity (Tree Site Index): northern red oak (Olson 1959 (810))



Map Scale: 1:3,680 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

## MAP LEGEND




**Area of Interest (AOI)**  
 Area of Interest (AOI)

**Soils**




**Soil Rating Polygons**

-  <= 65
-  > 65 and <= 66
-  Not rated or not available

**Soil Rating Lines**

-  <= 65
-  > 65 and <= 66
-  Not rated or not available

**Soil Rating Points**

-  <= 65
-  > 65 and <= 66
-  Not rated or not available

**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

**Warning:** Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Soil Survey Area: Albemarle County, Virginia  
 Survey Area Data: Version 15, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 8, 2020—Sep 23, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



**Table—Forest Productivity (Tree Site Index): northern red oak (Olson 1959 (810))**

Map unit symbol	Map unit name	Rating (feet)	Acres in AOI	Percent of AOI
51B	Bugley channery silt loam, 2 to 7 percent slopes	65	9.7	25.9%
51C	Bugley channery silt loam, 7 to 15 percent slopes	65	6.4	17.0%
51D	Bugley channery silt loam, 15 to 25 percent slopes	65	8.6	22.9%
52D	Bugley very channery silt loam, 15 to 25 percent slopes	65	6.0	16.1%
52E	Bugley very channery silt loam, 25 to 45 percent slopes	65	0.1	0.3%
62B	Buffstat silt loam, 2 to 7 percent slopes	66	1.8	4.7%
95	Hatboro silt loam, 0 to 2 percent slopes, occasionally flooded		2.2	6.0%
W	Water		2.7	7.2%
<b>Totals for Area of Interest</b>			<b>37.4</b>	<b>100.0%</b>

**Rating Options—Forest Productivity (Tree Site Index): northern red oak (Olson 1959 (810))**

*Units of Measure:* feet

*Tree:* northern red oak

*Site Index Base:* Olson 1959 (810)

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

*Interpret Nulls as Zero:* No

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

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# Virginia Department of Forestry

## Best Management Practices – Pre-harvest Plan

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**Landowner:** Dominique Kostelac  
**Acreage:** 26  
**Location:** End of Shadwell Road, Tax Map 79C-1 in Albemarle County  
**Prepared by:** Paul Haney on 6-29-22

This property is under a conservation easement with the Albemarle County Public Recreational Facilities Authority (ACEA). This pre-harvest plan (Plan) has been prepared to assist in the planned selective timber harvest and natural regeneration on this tract to adhere to Virginia's Silvicultural Water Quality Law (§10.1-1181.1 through 10.1-1181.7, Code of Virginia), Virginia's "Debris in Streams" Law (§62.1-194.2, Code of Virginia), and the terms of the ACEA easement. This plan does not relieve the owners and operators from their responsibility under these laws or the easement. Any agreements between the logger and landowner should be discussed and included in the timber contract. It is the responsibility of the involved parties to determine the boundary lines before the harvest. Any boundary lines drawn on attached maps are for illustrative purposes only. It is also the responsibility of the involved parties to obtain any permits related to entrances (VDOT) and large stream crossings (VMRC) (ACEA).

The recommendations within this Plan follow the guidelines outlined within the Virginia Department of Forestry's Forestry Best Management Practices (BMPs) for Water Quality Fifth Edition Technical Manual. The utilization of BMPs is a good stewardship ethic and it helps protect soil and water quality.

The Kostelac tract includes additional acreage along Hurtt's Pond. No harvesting activities will take place in a 200 foot 6.9-acre buffer strip along the pond (north and west of the access road). This will protect the pond from any potential sedimentation as well as provide an undisturbed view from across the pond.

The Kostelac tract is located at the southern end of Shadwell Road. A private road runs from the end of Shadwell Road westerly across the top of the tract. Two potential logging decks are marked on the map. Both of these are located along the access road where branches turn and run to the south.

A small stream forms most of the eastern boundary. There is a 200 foot no harvest buffer from a deed of easement as shown on the map streamside management zone buffer along this stream. Two smaller streams that drain from the interior of the tract have a 50-foot streamside management zone buffer along both sides. These buffers will be managed according to the Forestry Best Management Practices (BMP) (no more than 50% of the crown cover or basal area to be removed, very limited machinery access).

The slopes on the tract are, for the most part, very gentle. Very little, if any, skid trail construction will be necessary. Any skid trails that are built will follow the Forestry BMP guidelines.

### **RECOMMENDATIONS:**

#### **Haul Road Layout:**

Haul Road (existing road) will be from Shadwell Road along internal road to log decks and loading area. During the harvest, rock and mats may be needed to prevent rutting and erosion.

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Upon completion of the harvest the existing road should be left in as good or better condition with properly functioning diversions/turnouts on all sections exceeding 2% in slope, and any sections exceeding 5% in slope will need structures and a non-erodible surface. Rock, brush, or seed and mulch are acceptable. Existing roads will be maintained and may need to be graded and widened to facilitate the harvest operation. Please contact VDOT prior to the beginning of the operation for any entrance permits and approval.

### **Landings/Log Decks:**

Log decks will be located in the harvest area outside of the Stream Management Zones (SMZs). Deck may need gravel, brush, mats, chips or a combination in order to prevent tracking into the state highway and to prevent erosion. Upon completion of the harvest, all decks should have water diversions installed as necessary to prevent erosion on any slopes greater than 2%, and cover should be added on decks over 5% in slope. Acceptable cover can be brush that is properly incorporated into the soil or an appropriate mixture of seed and mulch. Log decks offer an excellent opportunity to install wildlife plots/game food patches. If the decks are properly stabilized, they can be used again for future timber harvests.

### **Skid Trails:**

Skidding should be dispersed throughout the tract and log landings have been located in an attempt to reduce skidding distance and avoid concentrated skid trails. The only areas of concentrated skidding may be around the deck areas or stream crossing approaches. Brush should be applied to all trails to prevent rutting, erosion and soil compaction. Properly brushed trails can also allow the operator to continue working in adverse weather conditions with reduced impact to site and soil. Any concentrated trails that are used for skidding that are not brushed should have properly spaced and constructed water diversions installed where slopes exceed 2%, and vegetation established using seed and mulch on slopes greater than 5%.

### **Stream Crossings:**

Haul Road Crossing:

None

Skid Crossing

Any stream crossings should be done using a three-panel temporary bridge. Bridge placement should be 90 degrees to the stream channel and have bumper drags placed on both sides of the crossing. Brush may be utilized to prevent erosion on the approaches. When use of the crossing is finished remove bridge panels and clean stream channel of any excess debris, and stabilize the approaches using properly spaced and constructed water diversions as well as brush incorporated into the soil or seed and mulch.

Stream crossings are the points where haul roads and skid trails intersect a stream channel and they have the potential to adversely affect water quality by exposing soil at or near streams. It is well known that road networks accumulate and deliver water and sediment to streams. Crossings should be limited and located where the least amount of impact results. Bridges are the preferred method for crossing streams and should be installed at right angles to the stream and maintain at least 5' of bridge/ground contact on each side. Rock haul road approaches and brush skid trail

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## Best Management Practices – Pre-harvest Plan

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approaches extending a minimum of 50' from the stream bank. Retired roads/trails should be stabilized with vegetation or non-erodible surface. It is often appropriate to leave slash mats behind and in some cases add new mats as a closeout bmp. Logs shall not be dragged through any stream for any reason and pipe sizes for stream crossings are available in the BMP Manual or from the VDOF. Close out stream crossings by establishing vegetation and/or sediment retention structures and packing slash where appropriate.

The guidelines set forth in the BMP manual for stream crossing installations on pages 39-45 should be followed.

### **Streamside Management Zones (SMZs):**

Streamside Management Zones (SMZs) are areas adjacent to streams, lakes, ponds, natural springs, and municipal water supplies and are extremely important to the protection of water quality. SMZs should be a minimum of 50 ft. in width on each side of the stream, measured from the top of the stream bank. Within this area up to 50% of the forest canopy can be harvested. There should be a minimum amount of disturbance within the SMZ, leaving the forest floor essentially undisturbed. Keep loading decks, haul roads and skid trails as far away from SMZs as possible.

Not only does the SMZ help protect stream quality, but it also makes most landowners eligible for the Virginia Riparian Buffer Tax Credit Program. This is a non-refundable tax credit for retaining buffers associated with the harvesting of timber. The amount of the credit is equal to 25 percent of the value of the timber retained as a buffer up to \$17,500 in the tax year in which the harvesting operation was completed. Please refer to the enclosed brochure for details on the application requirements for this program.

The section on SMZs can be found on pages 35-39 in the BMP manual.

### **Disturbed Soil Stabilization & Revegetation:**

Upon the completion of the harvest, all temporary roads, trails and log decks should be reclaimed properly. The skid trails should be smoothed, out sloped and water barred. Water bars are needed on grades 2% and greater. The construction of the water bars should be so that a vehicle can travel over them. All grades 5% and greater should be seeded with an appropriate seed for the season and at the recommended rate. Mulch may be needed on the steeper areas and areas in full sunlight.

The landings should be smoothed and sloped to allow for proper drainage. Butt-offs should be piled neatly and all trash disposed of properly. The area should then be seeded with appropriate seed for the season and at the recommended rate and mulched.

The haul road should be smoothed and out sloped if needed. Broad based dips or some type of water diversion structure should then be installed. The road should be seeded with an appropriate seed for the season at the recommended rate and mulched or graveled.

The stream crossings (if there are any) should be left in a manner which allows the stream to flow freely. The stream crossing approaches should have broad based dips installed and a non-erodible surface of either vegetation or gravel to the top of the grade on each side.

Additional harvest closure recommendations can be found on pages 50-51 and recommendations for the type of seed and application rates can be found on pages 151-157 in the BMP manual.

### **Additional BMPs:**

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Maintenance of the haul road, stream crossings (if there are any), log decks and skid trails is critical. Grade roads and trails and maintain water diversions structures. Keep a clean layer of rock or non-erodible running surface on the stream crossings (if there are any) and their approaches. During the harvest and especially during periods of inactivity or heavy rain forecast, install temporary water diversion structures on the haul road and skid trails. Pipeline company will be contacted for crossing requirements and they will be adhered to as needed.





Dominique  
Kostelac Tract  
Albemarle  
County, VA  
July 18, 2022

Professional Forestry &  
Environmental Consulting



Lake Buffer  
6.9 acres

lake  
4.3 acres

Potential  
Log Deck





Potential  
Log Deck

Operable Forest  
26.2 acres

Hurtts Pond

SHAD

**Legend**

-  Existing roads
-  Operable Forest
-  Streamside Buffers
-  Property Boundary

1000 ft US

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