2020 - 2025 Forest Action Plan

Part II: Strategy

The Mission of the Maryland Department of Natural Resources

The mission of the Maryland Department of Natural Resources (DNR) is to lead Maryland in securing a sustainable future for our environment, society, and economy by preserving, protecting, restoring, and enhancing the State's natural resources. DNR is the state agency responsible for providing natural and living resources-related services to citizens and visitors. DNR manages more than 467,000 acres of public lands and 17,000 miles of waterways, along with Maryland's forests, fisheries, and wildlife for maximum environmental, economic and quality of life benefits. A national leader in land conservation, DNR-managed parks and natural, historic, and cultural resources attract 14.5 million visitors annually. DNR is the lead agency in Maryland's effort to restore the Chesapeake Bay, the state's number one environmental priority. Learn more at www.dnr.maryland.gov.

The Mission of the Maryland Department of Natural Resources Forest Service

The Forest Service mission is to restore, manage, and protect Maryland's trees, forests and forested ecosystems to sustain our natural resources and connect people to the land.

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Forest Strategy Executive Summary

The first goal of the **2020 Maryland Forest Action Plan Strategy** is to "**Grow forests, habitats, markets, and jobs."** This is reinforced and refined by an additional four goals to maximize public benefits over the long term: **Manage forest health and fire, provide clean water, create healthy, livable communities,** and **respond to climate change.** The 2020 strategy remains based on the seven principles of sustainable forestry as defined in the international Montreal Process: biodiversity, forest productivity, ecosystem health, soil and water health, global carbon, socio-economic support, and legal/institutional frameworks.

Maryland's **Forest Assessment** characterized a growing and maturing forest land base, a renewable natural resource that supports considerable biological diversity, the potential expansion of saw timber and other durable wood products, net gains in carbon sequestration, and protection of water quality. Maryland forests have a **wide diversity of species**, hardwood and pine from coasts to mountains, but **less diversity in ages**, particularly very old and very young. Recent inventory data in Maryland showed increasing natural mortality on forestland overall, although not on timberland, where harvesting can create healthy densities of trees that can withstand drought, disease, or pests. Forest **growth outpaced losses** from mortality and harvest by twice the volume. **Development and fragmentation** are considered the greatest threat to our woodlands and their benefits. **Forest health challenges** include new pests, diseases, and exotic invasive plants, often associated with the **ecological changes** of a populated landscape: loss of historic low-intensity wildfire, loss of top predators for wildlife, more fragmented forests, and the addition of invasive species. Maryland is an **urbanized state,** with over 6 million people on 6.2 million acres, that also supports a **multi-billion dollar forest products industry, diverse wildlife habitat, and outdoor recreation**.

Priorities for 2021 to 2025:

<u>Grow forests, habitats, markets, and jobs</u>*:* Core commitments in the Strategy are for **sustainably managed forests**, both public and private, and maintaining a **skilled logging workforce** to ensure high-quality harvests. State Forest Managers lead dual third-party-verified certification, demonstrating and innovating forest practices that contribute to the local economy and nature-based recreation, while protecting ecologically important areas. The expansive public reserves with goals for very mature forests and old-growth make up about 10% of forests statewide. Most forests are privately owned, so growing certification on private lands, where appropriate, through programs such as the Maryland Tree Farm is a priority, calling for more outreach such as reaching new landowners through realtor training. Expanding **diversity and connectivity of forests through partnerships** is another focus, pursuing greater proportions of both **very old and very young forests** on which different suites of declining wildlife species depend.

The 2020 strategy emphasizes the role of **expanded forest markets** that can support the kind of careful forest management that builds forest health and diversity over time, practices landowners can access regardless of income, education, or experience. Beyond equity considerations, renewable resource-based markets are critical to maintain viable local economies and jobs, keeping watershed areas rural with low impervious cover. **Forestry technical assistance, cost-share and tax abatement** programs are core commitments that help private landowners plan and carry out goals for their forest. Public access to technical expertise to translate landowner ideas into good forestry can make the difference in how well today's forests transition into tomorrow's productive and protective resources in a complex and changing ecology. New measures to conserve and expand forests to offset ongoing development are sought, from outreach initiatives and **funding for restoration and conservation**, to better interaction with **local land use planning** and permitting. The **Forest Legacy Program** and the newly approved Maryland Assessment of Need will be an important tool to augment state conservation programs with permanent easements for working forests.

Manage Forest Health and Fire: Priorities include **training, coordination, planning, and information exchange** to most effectively manage forest health stressors, tapping **partnerships** such as The Nature Conservancy's Fire Learning Network and Resilient Forests Program. **Interagency and multi-partner planning** with Maryland Department of Agriculture Forest Pest and Plant Protection programs will be continued for long-term strategies for problem species such as hemlock woolly adelgid, emerald ash borer, and spotted lanternfly. State lands will be used to strategically address forest health issues, including biocontrol release and recovery and training on invasive plant control. Maintaining **readiness** to address wildfires with training and equipment, proactively reducing risk through **Firewise prevention**, and carrying out **prescribed fires** are intertwined priorities, balancing the threats and benefits of fire for fire-adapted native forests. Maryland remains committed to providing resources for **national mutual aid** for wildfire suppression and other emergencies, simultaneously expanding skills and training for in-state preparedness.

Provide Clean Water: Forests are the natural land cover most places in the Mid-Atlantic, and the best land use for water quality, in combination with **best management practices** that protect streams and water quality during harvests. The Maryland Forest Service is expanding technical assistance for field reviews on harvest sites. An additional priority is the **fair and consistent application of forest harvest regulations** throughout the state, similar to nearby states. **Chesapeake Bay goals for riparian forest buffers and urban tree canopy** remain a core priority, underscored by the 2013 Forest Preservation Act goal for maintaining 40% tree cover. Plantings have lagged behind desired progress even with successful programs such as the Conservation Reserve Enhancement Program, Backyard Buffers, and Healthy Forests/Healthy Waters, so new, flexible opportunities will be sought to expand tree plantings and post-planting maintenance and care.

Create Healthy, Livable Communities: Maryland benefits from **strong environmental policies** that help retain trees, forests, and forestry, including the Seed Tree Law, State Highway Reforestation law, Roadside Tree Law, Licensed Tree Expert Licensing Law, Forest Conservation Act, and Sustainable Forestry Act. These work to limit but not prevent forest loss

during development and encourage sustainable forest management. An array of **tree planting programs** are in place, from Marylander Plant Trees coupons for a discounted containerized tree to TreeMendous for public land plantings and Lawn to Woodland for private landowners wanting to plant an acre or more. More options are needed to **expand progress in tree planting and capacity for post-planting care**, partnering with communities and volunteers such as District Forestry Boards. **Tree canopy cover** is being updated as part of investments to advance Chesapeake Bay restoration, which will help target work to address heat islands, recreation needs, and greenways, factoring in community goals and equity considerations. Work such as Green Cities: Good Health is expanding awareness of the close **connection of trees and human health**, and more progress is sought, building on the recent planting project with the Veteran's Administration hospital project recognized through the Arbor Day Foundation's Tree Campus, Health Care program. Continued **training opportunities** will be offered for tree experts and Forest Conservation Act compliance. Youth outreach through the **Forestry Boards' Natural Resources Career Camp** will continue, and career ladder options are desired. **Maryland Urban and Community Forest Committee'**s grant program will work with small communities to expand their tree planting efforts.

Respond to Climate Change: Efforts to **expand tree planting, retain existing forests, and manage for diverse, well-stocked, vigorous forests** help Maryland adapt to the changing climate and building resilience while sequestering carbon. **Better information on carbon sequestration** by forest management practices is sought, evaluating effects over life-cycles of forests and forest products and across the landscape. **Forest management plans for drinking water reservoir forests** will be revised to directly address adaptation needs for climate change. Commitments to meet the **Greenhouse Gas Reduction Act mitigation** will be tracked for rural and urban tree planting, forest management, and renewable biomass projects. **Woody biomass energy with clean, new technology** may meet only a modest portion of Maryland's renewable energy needs, but it is a critical market for small-diameter wood from thinning for forest health; it is an important complement for other variable renewable sources with on-demand production. With projected variability in rainfall and storms, maintaining **readiness** will be a priority for wildfire response, storm response, and prescribed fire for native forest types. **Education** for landowners will continue, including increasing access to information on how to access economic benefits of voluntary carbon credits. Forestry practices to mitigate and adapt to climate change will provide **options** that enhance other forest benefits simultaneously, supporting water and air quality improvements, local efforts for climate resilience and hazard mitigation, biodiversity, habitat connectivity, and renewable natural resource-based industries.

Introduction

Maryland's forests are the foundation for native wildlife, healthy watersheds, scenic beauty, and a renewable natural resource-based economy in the state. Maryland faces many challenges in sustaining ecologically functional and economically viable forests in the face of rapid urban development and other threats. When European colonists arrived, more than 90% of Maryland was forested. Today, 39% of Maryland's 6.2 million acres are covered by forest over an acre. Maryland remains the nation's fifth most densely populated state, with more than 6 million people (U.S Census Bureau, 2019). The state's population has more than doubled since 1950. This translates to less than one-half acre of forest per person.

Maryland has been called "America in Miniature" because of the diversity of it's landscape - from the sandy ocean beaches and marshy estuaries across the rolling hills of the Piedmont to the steep slopes of the Blue Ridge Mountains and Allegheny Plateau. This fosters a tremendous variety of conditions and habitats within a small state. Maryland also has extensive urban and suburban areas, housing 95% of the state's population on a little over 10% of the land area. Marylanders rely on their trees and forests for recreation, scenic beauty, and pleasant neighborhoods. Many take for granted that forests also support healthy streams, fish and wildlife habitat, and clean air. Forest products contribute renewable natural resources for rural economies and urban wood manufacturing centers, as well as supplying wood for heat. The intersection of the diverse forests, rising population, and varied demands yields an abundance of issues for Maryland's forests.

Maryland supports a $3.5 billion forest products industry and has capacity to grow. Maryland benefits from an active policy environment that helps retain trees, forests, and forestry, including the Seed Tree Law and the Forest Conservation Act. The importance of Maryland's forests was recognized in 2009 when the State Legislature passed the Sustainable Forestry Act, and in 2013, with the Forest Preservation Act.

National and Regional Charges for the State Forest Action Plans

The Maryland Forest Action Plan was produced as part of the national strategy to "redesign" how federal and state cooperative assistance programs address America's forest lands. Conceived in 2007, this approach within the USDA Forest Service State and Private Forestry (S&PF) improves the ability to identify the greatest threats to forest sustainability, target program delivery and accomplish meaningful on-the-ground changes in high priority areas. The 2008, 2014, and 2018 Farm Bills required states to develop the plans, pushing strategic action in spending public resources. The Farm Bill identified three national priorities from the Redesign Process and amended Cooperative Forestry Assistance Act.:

- Conserve and manage working forest landscapes for multiple values and uses
- Protect forests from threats
- Enhance public benefits from trees and forests

State Forest Assessments- To ensure that federal and state resources are being focused on high priority areas with the greatest opportunity to achieve meaningful outcomes, each state, territory or island has worked collaboratively with the USFS and other key partners to develop a comprehensive state forest resource assessment. These assessments provide a comprehensive analysis of the forest-related conditions, trends and opportunities in each state.

Assessments are slated to be reviewed on a five year cycle and updated on a 10 year cycle . The assessments encompass existing planning requirements for USFS State and Private Forestry funding, moving assessment and planning tasks to be more integrated. At a minimum, Maryland's forest resource assessment:

- Describes forest conditions on all ownerships in the state
- Identifies forest-related benefits and services
- Highlights issues and trends of concern as well as opportunities for positive action
- Delineates high priority forest landscapes to be addressed
- Outlines broad strategies for addressing the national priorities along with critical issues and landscapes identified through the assessment

Maryland's Forest Assessment also identifies critical information gaps so that this information can be acquired as opportunities arise and to better coordinate with other natural resource plans. The assessment addresses all public and private ownerships in Maryland, spans the urban to rural continuum, and is guided by the following Seven Criteria of Forest Sustainability established through the Montreal Process - the internationally agreed upon criteria and indicators for the conservation and sustainable management of temperate and boreal forests.

Criterion 1: Conservation of **biological diversity**
Criterion 2: Maintenance of **productive capacity** of forest ecosystems
Criterion 3: Maintenance of forest ecosystem **health and vitality**
Criterion 4: Conservation and maintenance of **soil and water** resources
Criterion 5: Maintenance of forest contribution to **global carbon cycles**
Criterion 6: Maintenance and enhancement of long-term multiple **socioeconomic benefits** to meet the needs of societies
Criterion 7: **Legal, institutional, and economic framework** for forest conservation and sustainable management

Forest Strategy - With the background provided by the State Forest Assessment, the Maryland DNR Forest Service worked collaboratively with partners and stakeholders to develop a Forest Action Plan Strategy. This described Maryland's desired actions for forestry issues, specific to current forest conditions, laws, programs, political subdivisions, and stakeholders. The Action Plan will be used as a basis for Maryland to propose needed investments of state and federal dollars, in combination with other available income streams.

Maryland's Forest Strategy:

- Describes how the Maryland Forest Service proposes to invest both competitive and non-competitive federal funding, along with other available resources, to address national and regional priorities as well as those identified in the state's forest resource assessment
- Describes how the state's proposed activities will accomplish national program objectives and respond to specific performance measures
- Outlines a specific timeline for project/program implementation
- Provides a detailed budget including opportunities to leverage non-federal resources
- Identifies partner/stakeholder involvement
- Identifies strategies for monitoring outcomes and revising action as needed

Strategy

Maryland's Forest Action Plan is intended to chart a course that builds towards a desired future outcome - a vision of Maryland's future forests. The following strategies are meant to guide actions and investment of resources over the next five years. It is built on an understanding that forests are long-term investments needing near-term actions to contribute to progress over decades. The strategy for managing Maryland's forests and trees is based on the conditions, trends, threats, and opportunities in the 2020 Assessment document. The assessment uses the seven criteria for sustainable forestry developed through the Montreal Process. The seven criteria for sustainable forests support the five statewide issues for the Forest Action Plan. The assessment also identifies priority areas to focus targeted actions addressing threats that vary across Maryland's forested landscape.

Findings: Maryland Assessment 2020

1. Maryland has 39% forest cover and a continued trend of slow loss of forest land. When all tree canopy is considered, including patches smaller than an acre, tree canopy covers almost 50% of the state. Trends correlate with the pace of development, constrained but not stopped by existing laws, policies, and programs.
2. In a year, Maryland's forests absorb 4.3 million metric tons of carbon dioxide equivalent (MMtCO2e) emissions. Urban trees and forests also contribute to carbon sequestration and store an additional 2.2 MMtCO2e per year.
3. Maryland is well-positioned to provide mature forests, which now make up 78% of Maryland's forest cover; 40% of Maryland's forests are over 80 years old. The benefits of more mature forest for recreation, timber supply, interior forest habitat, and sustained carbon storage also come with the trend of slower annual net growth rates and increasing natural mortality. The related decrease in young forests has reduced early successional habitats that are needed for a variety of species now in decline, and potential for higher carbon sequestration rates in the future.
4. A quarter of Maryland's forests are publicly owned, and over 41% of that forest is considered reserved from forest harvesting, about 10% of the forest area. Renewable resource-based industries important for stable rural economies and watersheds source more wood from private lands.
5. 16.9 million trees have been planted through ten planting programs in the last 14 years. The Backyard Buffer program has expanded to twenty counties, the Marylanders Plant Trees coupons continue to be available, and state funding for residential plantings in priority areas has increased. Pine seedling planting has decreased while hardwood seedling planting has increased.
6. Planting and maintaining forested riparian buffers is an integral strategy for protecting water quality. Since 1996, over 1,400 acres of riparian buffers have been planted in Maryland. 57% of Maryland's streams are fully buffered and another 27% are partially buffered.
7. Forest health concerns are expanding as many forests age, combined with continued new introductions of invasive, exotic pests, such as emerald ash borer and spotted lantern fly. Gypsy moth (exotic) and southern pine beetle (native) continue to pose significant risks of interacting with seasonal weather, biocontrol organisms, and drought stress.
8. The area of sustainably certified forests has expanded since 2010. Over 800,000 acres are certified and audited, including private lands certified though the American Tree

Farm System, dual certified State Forests, and other Sustainable Forestry Initiative certified private forests.The sustainable forestry certification on State Forest Lands includes protection of old-growth systems and plans for managing significant additional areas as Old-Growth Ecosystem Management Areas where old-growth characteristics can develop over time.

9. Wildfire acres burned has declined, which is correlated with trends in increased rainfall and increased use of prescribed fire to restore fire-adapted ecosystems and manage wildfire risk.

10. Markets for locally sourced forest products are decreasing due to several factors including the loss of the fumigation capability at the Port of Baltimore, decline of log truck driving capacity, and closure of saw and paper mills. The Luke Paper Mill, Maryland's last remaining paper mill, located on the Potomac River in Allegany County, closed in 2019. Before its closure, it was capable of producing 450,000 tons of freesheet paper products annually.

11. Declining markets have impacted forestry's contribution to the economy. From 2005 to 2015, the economic impact of forestry in Maryland declined from $4.7 billion to $3.5 billion. Investing in existing markets like poultry bedding and new markets like woody biomass for thermal and electrical energy, could help revitalize the forest products industry, and provide income to landowners and sustainable management of forests.

12. Forest harvest best management practices (BMPs) are widely used and are properly implemented at a rate of 88% during forest harvest, with 97% implementation on public lands. The natural land cover in Maryland is predominantly forest, and with wide use of good BMPs, forests are the most protective land use for water quality and watershed function.

13. Most Maryland forest types, dominated by oaks and yellow-poplar, are considered to have moderate to high adaptive capacity in the face of climate change, but red spruce habitats are more at risk. Faster growth has been documented for many tree species and is expected to continue with the higher carbon dioxide levels (needed for photosynthesis), and observed trends of warmer, wetter conditions, especially in winter and spring. However, all forest types, regardless of climate change adaptive capacity, require climate informed management to address threats that may be exacerbated by climate change.

14. Coastal maritime forests are at risk, where saltwater intrusion is a particular concern. Maritime forests face increasing levels of saltwater, and a 2016 survey by MDA found that 50,406 acres had been affected by saltwater intrusion. This was an increase from 18,117 acres of forest in 2013.

Maryland's Forest Strategy addressed the priorities identified in the national strategic planning effort by the U.S. Forest Service. The goals and objectives identify and respond to the current situation in Maryland's forests, and reference priority areas from the 2020 Forest Assessment. Please refer to the Assessment document for details of the GIS models, data sources, and analysis used to develop the priority areas. The priority areas do not mean that no actions will be taken outside of those areas for a particular goal or set of actions, but that planning and resources will emphasize progress in those areas. Colors in maps are used to distinguish among areas and do not denote different levels of priority.

Socioeconomic setting:

Maryland has a robust set of laws and strong institutions designed to protect natural resources and ensure legal forest harvests. For markets where people want assurance that the forest products that they buy have been produced legally and sustainably, these laws serve as sideboards for sustainable forest and natural resource management. Investments in staffing and systems that carry out the laws and regulations mean that Maryland can serve as a source of renewable forest products with substantial certainty that products are legally harvested from sustainable sources with appropriate protection of water, air, and biodiversity resources.

The earliest laws, starting in 1906 in Maryland, established the authority to own public forests, manage forest resources and fight wildfire, engaging staff and volunteers. Forest cover was at an historic low, and the state established a nursery to expand tree planting. Other laws have provided technical and financial assistance to support good management and a renewable forest resource, and to assist communities with urban trees and forests. These laws help people manage their trees and forests, and address concerns that cross landowner boundaries, such as forest health.

- Forest Management   NAT. RES. ARTICLE 5-1
- Tree Nursery   NAT. RES. ARTICLE 5-4
- Required County Payments   NAT. RES. ARTICLE 5-212g
- Forest Resources Plan   NAT. RES. ARTICLE 5-214
- Reforestation and Timber Stand Improvement Program NAT. RES. ARTICLE 5-219
- Woodland Incentives   NAT. RES. ARTICLE 5-3
- Urban/Community Forestry   NAT. RES. ARTICLE 5-4
- Forestry Boards   NAT. RES. ARTICLE 5-6
- Fire Hazards   NAT. RES. ARTICLE 5-7
- Mid-Atlantic Fire Compact   NAT. RES. ARTICLE 5-8
- Sustainable Forestry Act of 2009   NAT. RES. ARTICLE 5 et al
- Reduced Property Tax Assessments for FCMAs TAX PROPERTY ARTICLE 8-211

Laws to protect trees in Maryland date back to 1914, with the establishment of the Roadside Tree Law. The Seed Tree law in the 1970s required replanting or leaving seed trees to assure a future forest on pine harvests. As development replaced harvesting as the major means of forest loss, laws affecting development have expanded, including 1:1 replacement for forest acreage cleared for highways, retention and mitigation of forests near tidal waters (Critical Area), and partial replacement to limit loss of trees during development through the Forest Conservation Act (applicable outside of the Critical Area to all counties except the two most heavily forested counties in Western Maryland). Because counties and municipalities have land use authority in Maryland, some of these laws establish statewide standards that the local jurisdictions have to incorporate in their unique ordinances for zoning, subdivision, grading, and others.

- Roadside Tree Law   NAT. RES. ARTICLE 5-4
- Seed Tree Law   NAT. RES. ARTICLE 5-5
- State Highway Reforestation Law (Nat. Res. Article 5-103)
- Forest Preservation Act   NAT. RES. ARTICLE 5-104
- Forest Conservation Act   NAT. RES. ARTICLE 5-16
- Chesapeake and Coastal Bays Critical Area Law NAT. RES. ARTICLE 8-18

Other laws establish licensing and standards so Maryland citizens have access to basic consumer protection while trying to take care of and benefit from their trees:

- Tree Expert Law   NAT. RES. ARTICLE 5-4
- Forest Product Operators Licensing   NAT. RES. ARTICLE 5-6

Other laws address environmental goals for biodiversity, clean air, and clean water, including wetlands:

- Threatened and Endangered Species   NAT. RES. ARTICLE 10-2
- Greenhouse Gas Reduction Act   Environment Article 2-12
- Erosion & Sediment Control   Environment Article 4
- Nontidal Wetlands Law   Environment Article 5-9

Other State commitments are in policies and signed agreements, such as grant funding and the Chesapeake Bay Agreement Action Plan. For the Chesapeake Bay, forest buffers, urban tree canopy, and conserving other forests of high value for water quality will be near-term priorities based on existing commitments for 2025. Two-year milestones, like the Natural Filters strategy, focusing on revegetating buffers, wetlands and highly erodible lands, have been established for several forest restoration practices to meet Chesapeake Bay nutrient reduction commitments in the Chesapeake Bay Watershed Implementation Plan.

Maryland Goal I. Grow Forests, Habitats, Markets, and Jobs

(Supports National Priority I, Conserve and Manage Working Forest Landscapes for Multiple Values and Uses)

When the health and integrity of natural resources deteriorate, so do the environmental, economic, and social benefits they provide. These benefits include, but are not limited to: cleaner drinking water, reduced carbon emissions, climate benefits, thriving wildlife, increased recreational opportunities, community health, and economic prosperity. Forest markets are an essential part of paying for practices needed for forest health and costs of land ownership. The Maryland Forest Service will work with partners to restore and sustain the forest landscapes and provide incentives to prevent the loss of private forests and other working lands. Public forests are uniquely situated to provide some wider ranges of benefits and serve as models for ecological forestry. None of the other benefits of forests can be provided if the forests themselves do not remain.
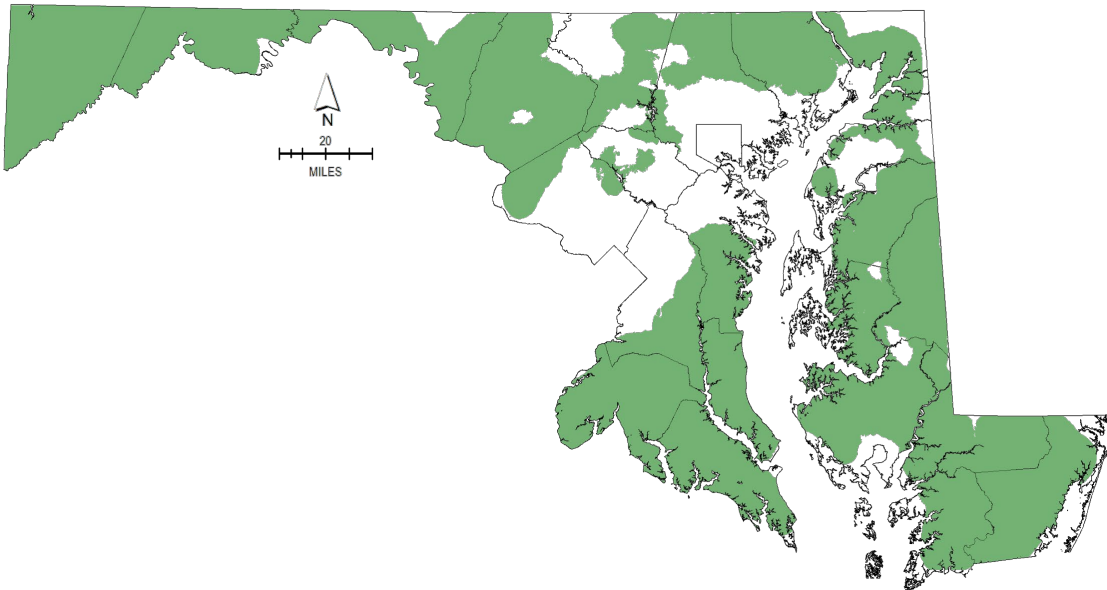
Figure 1: Priority areas to encourage working forests

Objective I.A. Keep Forests as Forests

Strategy I.A.1. Expand and diversify forest product markets to improve demand for keeping land forested and managed for renewable, recyclable, and biodegradable forest products.
Three-quarters of Maryland's forests are privately owned, and most landowners need some cash flow to pay for conservation practices and other costs of land ownership. Diverse markets provide the financial engine to carry out good silviculture - thinning small trees creates larger, healthier trees for future function and value and a diversity of species and stand ages make forests more resilient across the landscape. Skilled loggers are an indispensable link in the supply chain, applying the silvicultural practices and providing raw materials for shelter, heat,

and other needs. Resource-based jobs support a viable rural economy associated with low-density, healthy watersheds.

Example Tactics:
- Develop a forest economic adjustment strategy for countering the economic impact of numerous mill closures across the state of Maryland, and to provide a roadmap for capitalizing on new opportunities in the forest industry which will lead to the creation of jobs and businesses in designated Opportunity Zones throughout the region. This would include markets for small-diameter wood from thinning or timber stand improvement needed to support longer rotations for sawtimber or veneer, as well as other high-value products to increase forest land value.
- Maintain a skilled logging workforce for high-quality harvests through an improved business climate and increased coordination throughout the supply chain.
- Work with economic development partners to provide technical and business management support to expand existing forest industry, aid in business ownership transition, and/or develop new industries that add value for forest landowners, especially primary job creation sectors such as timber.
- Develop a Wood Innovation Team with wood energy expertise to support regionally tailored forest product markets that help fund forest health practices, including clean wood energy and other options for small-diameter, low-grade wood.
- Prepare and publish a risk analysis to identify Maryland as a reliable source of legally harvested and sustainably sourced forest products for domestic and export markets.
- Identify and provide technical support to building code officials, architects, and specifiers for using cross-laminated and other mass timber products, and build demand for renewable, sustainably produced materials that aid long-term carbon sequestration.
- Reach out to community and local government leadership to identify ways that forest products could be used to meet community needs, reduce costs for solid waste, and support local businesses.
- Use or develop public policies and regulations that reduce barriers to efficient forest industry, such as trucking rules, environmentally friendly forest product treatment options for phytosanitation, low-interest capital, favorable tax treatment, and marketing.
- Work with local governments and the Maryland General Assembly on zoning and permitting issues to avoid or address restrictions for acceptable forestry practices and processing, building on recommendations from the Rural Economies Workgroup of the Maryland Sustainable Growth Commission.
- Provide a fair, consistent and effective regulatory structure for forest harvesting in Maryland, including timely permitting, prioritizing areas with forest stewardship plans and coordinating closely with the Maryland Department of Environment, Soil Conservation Districts, and delegated local governments.
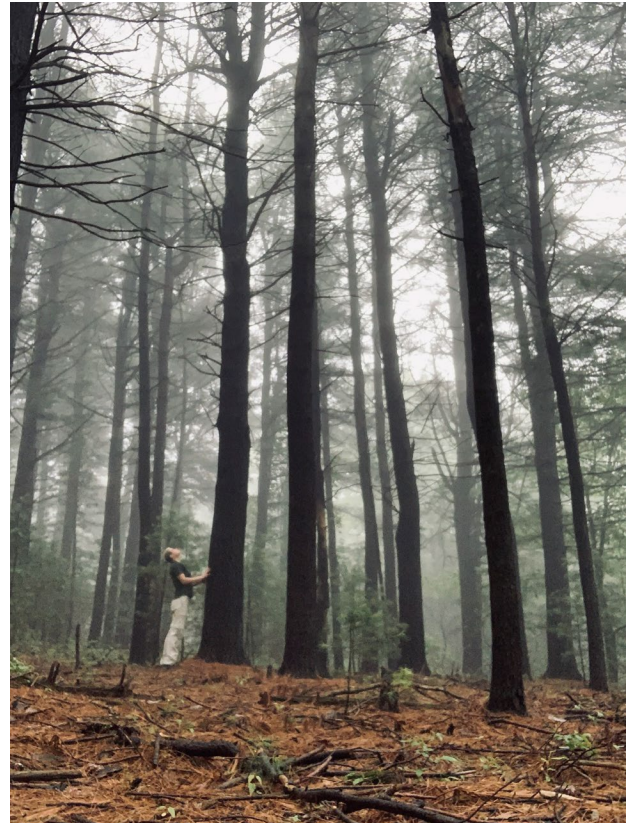
- Support regulatory reforms that ensure a fair approach to forest-based businesses across all sectors of the forest products industry, including timberland owners, loggers, and mills, and expand awareness of their role as needed, valued, and sustainable partners in contributing to a vibrant economy in Maryland.
- Publicize forest market and income options for landowners and Maryland forest product operators, communicating their contributions to forest health, wildlife habitat diversity, and carbon sequestration.
- Develop options for forest income on smaller forest parcels (< 10 acres), including agroforestry, networking with farmer's markets and grow-local or farm-to-table businesses.

Strategy I.A.2. Conserve Maryland forests using a spectrum of land conservation programs, policies, and laws in a way that honors private property rights and sustains diverse forest habitats and product markets.

Losses to development remain the greatest threat to maintaining Maryland's forests, and development values usually far exceed values from sustainable resource management. Conservation is much less expensive than restoration and better maintains the full suite of benefits from trees and forests. A variety of programs is needed for diverse land conditions, landowner goals, and providing habitat across a spectrum of forest types and ages.

Example Tactics:
- Use the Forest Legacy program and Maryland's 2020 Assessment of Need, (Appendix F.), to protect critical forests threatened by development, and other non-forest land uses augmenting state land conservation efforts and maintaining a focus on working forests.
- Coordinate with partners to track and expand land conservation of forests, partnering with the Forever Maryland Foundation, Maryland Environmental Trust, Maryland Agricultural Land Preservation Foundation, Maryland Department of Planning, and DNR's Land Acquisition and Planning unit.
- Use existing laws to reasonably limit forest loss during development and transportation projects, including the Forest Conservation Act, Chesapeake and Coastal Bays Critical Area laws, the State Highway Reforestation Law, and Roadside Tree law, with consideration of sustainable development.
- With land conservation partners, identify important tracts of forests over 40 acres not currently protected from development, and develop conservation options for willing landowners, such as Rural Legacy easements, Program Open Space easements or acquisition, Maryland Agricultural Land Preservation Foundation easements, federal easement programs, donated conservation easements, purchase of development rights, and other land preservation techniques to protect priority forest lands (see areas in Figure 1).
- For landowners not drawn to permanent conservation options, expand familiarity with the benefits of forest management, forest markets, and property-tax reduction programs through 15-year Forest Conservation Management Agreements or 3-year options in the Woodland Assessment Program.
- Increase coordination between the Maryland Agricultural Land Preservation Foundation and Forest Conservancy District Boards, continuing to coordinate at least one annual meeting as required by the 2009 Sustainable Forestry Act.
- Work with federal defense agencies to conserve land in zones that maintain ability to support missions on military bases, working across multiple states.

Strategy I.A.3. Expand tree planting, forest restoration, and post-planting care to help meet or exceed the no-net-loss-of-forest goal.
Even with Maryland's strong regulatory policies protecting trees, increased economic development and expanding populations have contributed to forest losses that need to be offset by vigorous tree planting and forest restoration in many parts of the landscape.

Example Tactics:
- Provide incentives for small acreage owners to convert lawn to natural areas, building on programs such as Lawn to Woodland or the Healthy Forests, Healthy Waters partnership funded by the Chesapeake and Coastal Bays Trust Fund.
- Expand conservation financing options for cost-effective forest restoration, tapping new sources such as crowd-funding or voluntary nitrogen footprint offset purchases.
- Implement the Sustainable Forestry Act of 2009 and the Forest Preservation Act of 2013, reviewing requirements, monitoring progress, and scheduling needed steps.
- Clarify goals and tracking methods for forest cover and tree canopy used for evaluating no-net-loss of forests in Maryland required by the Forest Preservation Act of 2013 (40% tree canopy).
- Update the forest and tree cover information every five years and provide data to local jurisdiction planning contacts and the public.
- Develop market-based options identified in the 2013 Act: forest mitigation banking, carbon credit or sequestration system, clean water credit trading system, environmental services credit trading system, and renewable energy credit trading system.
- Expand tree planting and post-planting care on public and private land to offset forest loss, engaging new funding sources and partners.
- Provide training materials for caring for trees and new forests and build peer learning networks, partnering with local volunteers, including District Forestry Boards, Watershed Stewards, Master Gardeners, and Master Naturalists.
- Utilize Marylanders Plant Trees coupons as a way to incentivize homeowners to plant more trees - especially native species.
- Encourage the public to use the Tree-Mendous website, which provides resources for tree care.

Strategy I.A.4. Provide technical and financial assistance to help private forest landowners practice sustainable forest management.

Example Tactics:
- Provide general forestry assistance and an array of services for landowners, from basic forestry questions to site visits and full USDA Forest Stewardship Plans, tailoring technical assistance based on staffing and landowner interest.
- For landowners with more than 5 acres interested in managing forests, prepare, implement, and monitor sustainable forest management plans that recommend actions to meet landowner goals and address forest health concerns.
- Strengthen partnerships and shared stewardship approaches with the Natural Resource Conservation Service (NRCS), Soil Conservation Districts, University of Maryland Extension, conservation organizations, and others to increase forestry assistance to landowners.
- Use the Mel Noland Woodland Incentive Fund to share some costs with forest landowners applying forest management or tree planting practices.
- Expand sustainable certification of private forest lands through programs such as the American Tree Farm System, accredited by the international Forest Certification

organization "Programme for Endorsement of Forest Certification" (PEFC), headquartered in Geneva, Switzerland.
- Use tax abatement programs to reduce property taxes for landowners who develop and implement forest management plans (15-year Forest Conservation Management Agreements and the 3-year Woodland Assessment Program).
- Use the Income Tax Modification program to offer preferential tax treatment of expenses for landowners implementing desired forest management practices such as reforestation.
- Maintain core technical competence and consistent funding in the Forest Stewardship and Utilization Programs within the Maryland Forest Service to assist landowners with forest management, partnering to expand capacity and avoiding duplication.
- Uphold rights for landowners to lawfully practice forest management, established in the Sustainable Forestry Act of 2009.
- Provide outreach to landowners with easements in conjunction with partner entities to encourage maximum resource returns, best management practices, and ecological conservation and restoration.

Strategy I.A.5. Develop and share informational resources for landowners to help them maintain and manage forests, with emphasis on new and future owners.

Example Tactics:
- Improve landowner access to forest management information, partnering with programs such as Call Before You Cut, Extension's Maryland Woodland Stewards, The Nature Conservancy's Western Maryland Resilient Forests, Alliance for the Chesapeake Bay's Forests for the Bay, and Maryland Forestry Foundation outreach to encourage cooperative land management and use of professional assistance. The National Woodland Owner Survey and other data can be used to tailor information and outlets for effective messages.
- Provide training on transitioning forest ownership and management within families and between generations, reducing conversion to non-forest use at the time of inheritance.
- With partners like the volunteer Forest Conservancy District Boards, Forests for the Bay, and University of Maryland Extension, expand awareness of forestry issues, good practices, and available forest management resources for private landowners, including the Extension General Forestry course and Alliance for the Chesapeake Bay's Real Forestry for Real Estate training.
- Reach landowners with small acreage to encourage forest management and transition of lawn to natural areas through programs like Extension's Woods in Your Backyard.
- Share forest management resource information using social media through "From the Treetops" posts with DNR Office of Communications.
- Reach youth with forestry training, coordinating with organizations such as vocational agriculture programs, Envirothon, and environmental clubs to increase awareness of renewable resource management and education options.

Strategy I.A.6. Assure supply of expertise and materials for forest management and tree planting, continuing efficient production of affordable seedlings with a diversity of species.

Example Tactics:
- Efficiently produce high quality yet affordable forest tree seedlings to support afforestation, reforestation and restoration needs on public and private lands.

- Increase local source seed collection in partnership with conservation and community organizations.
- Provide genetically superior loblolly pine and white pine for reforestation in Maryland and Delaware.
- Establish Mid-Atlantic provenance hardwood seed production areas, selecting sources from forest lands protected from development such as state forests or forest easements.
- Promote species diversity by offering a large variety of affordable tree and shrub seedlings suitable to the diverse habitat types of Maryland and Delaware.
- Develop seedling bundle options suitable for small plantings, pollinator habitat, and other wildlife habitat goals.
- Improve landowner access to and information on licensed foresters and sources of professional forestry advice.
- Expand workforce training in forest product harvesting and processing, partnering with agriculture and natural resources agencies and organizations, commerce, community colleges, and high school technical programs, integrating with existing curriculum and promoting pathways to recruit a diversity of trainees.
- Consider developing and implementing a resource assistance program with the Maryland Ornithological Society.

Objective I.B. Manage for Resilient Forest Landscapes, Habitats, and Partnerships

Today's forests contend with a changed ecology, including lack of historic landscape-scale fire, loss of large predators to keep tree-nibbling herbivores like deer in check, and the addition of new plants, pests, and diseases. Partnerships are essential for addressing the complexity and scale of resource management needed.

Strategy I.B.1. Improve natural resource management and diminish the use of practices that degrade forest quality and wildlife habitat over time.

Example Tactics:
- Use diversity in species, age classes, and forest structure to spread risk from forest health stressors.
- Assess diversity of stand types and ages across the landscape, quantifying old-growth, designated future old-growth forest areas, fire-dependent forest types, and early successional forest habitats.
- Establish forest management for wildlife demonstration areas to showcase ecological forestry techniques that landowners could use to improve desired wildlife habitats, from managing towards mature forest conditions to designing early successional habitat to benefit declining shrubland species. Include options for diversifying pine plantations with a great variety of species and habitats suitable for landowners interested in managing for wildlife, game or non-game.
- Work regionally with wildlife management professionals to identify and communicate geographic areas where a shifting mosaic of managed forest land could best support the expansion of declining early successional species, including American woodcock, bobwhite quail, and ruffed grouse.
- Collaborate with local conservation groups, hunt clubs, fishing clubs, fly shops, and the Ruffed Grouse Society to identify and fund restoration projects, leveraging private fundraising with grants.

- Tap programs such as the Forest Stewards Guild's Foresters for the Birds to work with biologists and conservationists to identify habitat and silvicultural recommendations for at-risk bird species.
- Foster interest and ability for landowners to provide habitat for declining species, considering tax incentives for providing early successional habitat with patches to support nesting and brooding, and public information such as bird call counts for northern bobwhite quail.
- Support continuing education of natural resources professionals, including the ongoing partnership with the Society of American Foresters and other professional organizations to provide training in current forestry skills, science, and advances in technology.
- Support Forest Certification programs, landowner cooperatives, coordinated contracting for land management needs such as weed control, and other innovative programs for private forest landowners.
- Encourage forest management that supports principles of Sustainable Forestry (Montreal Process Criteria and Indicators).

Strategy I.B.2. Prioritize restoration and conservation focus areas across ownerships to increase connectivity and reduce fragmentation at a landscape scale.

Example Tactics:
- Partner with community groups and local governments to identify landscape-scale forest health challenges and local priorities for forest conservation and restoration, considering priority forests in green infrastructure mapping in local planning and policies
- Prioritize activities based on mapped priority areas for urban forestry, fire risk, water quality, forest stewardship need, and Forest Legacy.
- Work with the Natural Resource Conservation Service, Soil Conservation Districts, the Farm Service Agency, and watershed partnerships to implement appropriate forest practices in Priority Watersheds in cooperation with family farm owners and other qualifying forestland owners.
- Enhance forested wetland habitat through wetland restoration and easement programs such as the Natural Resources Conservation Service's Wetlands Reserve Program (WRP) and the Agricultural Conservation Easement Program (ACEP).
- Encourage expanded use of Forest Conservation Management Agreements and other forest conservation mechanisms in watersheds with high priority for working forests.
- Work with local planning and economic development staff to help develop land use practices that support sustainable resource management, a viable resource-based economy, and conservation of priority working forests. Provide technical forestry information to support planning goals such as protecting priority woodlands, supporting rural economies, setting goals for open space, and improving water quality, including during the comprehensive plan development process.

- Provide free assistance to local governments to help them achieve sustainable forest management certification on resource lands they manage.
- Learn from and expand use of local programs that are conserving rural land and working forest.
- Partner with the Maryland Department of Planning and local planning agencies to assess contributions of existing laws and planning requirements for conserving forests over 40 acres in Maryland, and gaps in programs to encourage retention and management of forests.
- Improve forest conservation and connectivity over time by funding afforestation on lands protected from development.
- Coordinate with land conservation stakeholders to design complementary actions and funding options that support overall landscape conservation and restoration strategies statewide, learning from Pennsylvania's Conservation Landscape Initiative.
- Identify opportunities for easements and continued private land management as alternatives for state-funded land conservation, evaluating current state land ownership patterns and desired limits to continued fee-simple acquisition.
- Continue working with the "White Oak Initiative," which is a partnership across state agencies, conservation groups, landowners, trade associations, academics and oak-dependent industries from 17 different states to ensure the long-term sustainability of white oak in the United States.
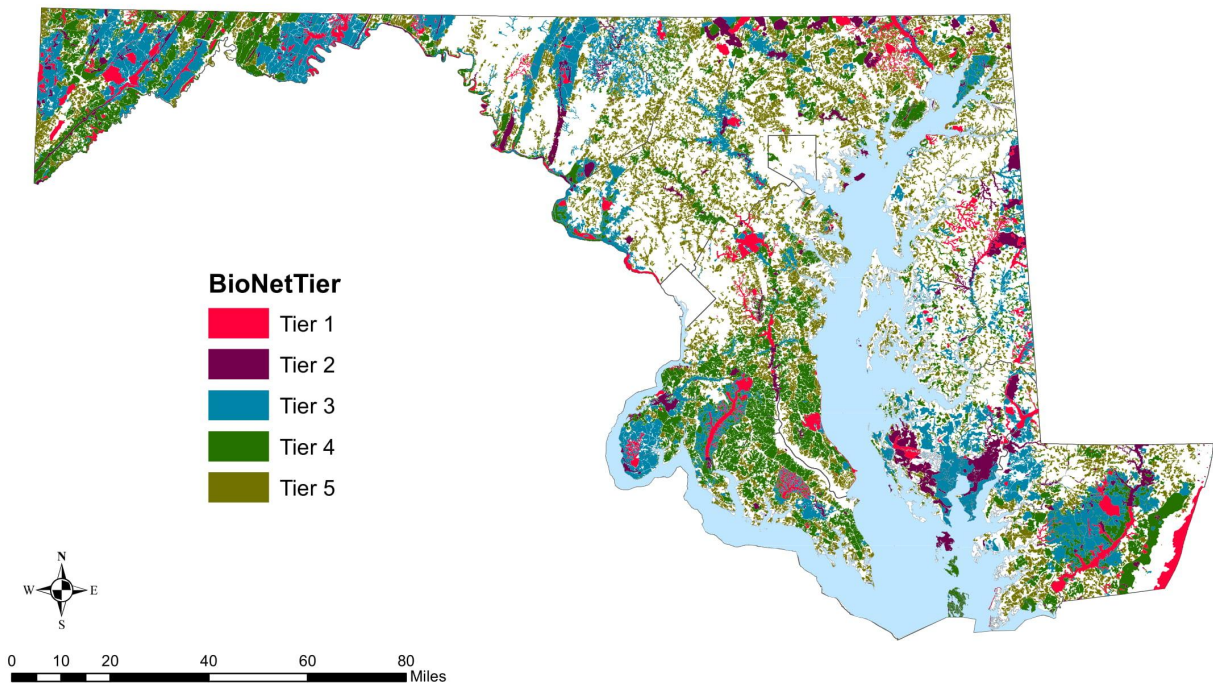

Figure 2: Priority map for fish and wildlife habitat- BioNet map from the 2015 Maryland State Wildlife Action Plan.

The 2015 Maryland State Wildlife Action plan describes the priority mapping: "BioNet integrates information on rare, threatened, and endangered plants and animals, species of greatest conservation need, watch list plants, and rare ecological communities and prioritizes Maryland's vanishing natural landscapes to highlight those areas that are most important to conserve the full complement of terrestrial and freshwater species and natural communities currently found within the state. The criteria used within BioNet primarily focuses on the most irreplaceable species and habitats, as well as the habitats where larger numbers of rare species are concentrated. In addition to focusing on vanishing species and habitats, and on high quality common habitats, the criteria were designed to incorporate the larger landscapes required for migratory animals, population dispersal, and habitat shifts resulting from climate change.

These areas are prioritized into a five-tiered system based on a continuum of rarity, diversity, and quality, with Tier 1 being the highest or most critically significant for biodiversity conservation. Examples of Tier 1 areas include habitats with the only known occurrence of a species in Maryland, with any occurrence of a globally critically imperiled species or vegetation community, with high quality occurrences of globally rare species or communities, or with hotspots where 10 or more state rare species or communities are concentrated.

Strategy I.B.3. Provide habitats for rare native species dependent on forest ecosystems, particularly priorities in the 2015 Maryland's State Wildlife Action Plan (SWAP).

Example Tactics:
- Protect high-quality contiguous forest blocks.
- Identify and plant areas to create contiguous forest and improve habitat for forest interior dwelling species and other rare species (see Figure 2).
- Implement the Habitat Conservation Plan for the Delmarva Fox Squirrel, emphasizing public forest management.
- Cooperatively address declines of the Northern long-eared bat, contributing to solutions that maintain a viable forest industry and actively manage forests to improve future habitat.
- Manage for ecological functions in High Conservation Value Forests identified on certified forest land (usually 30 to 40% of the certified land base).
- Seek opportunities to restore native forest communities such as Atlantic white-cedar, shortleaf pine, pond pine, cherry bark oak, American chestnut, ash, red spruce, and others using local genotypes to the extent possible.
- Provide local seed source for selected species to the state nursery to provide appropriate native genotypes for restoration, including important species to support pollinators.
- Work with partners to improve deer herd management and reduce over browsing of native trees.
- Work with Native American communities to identify species of interest, such as sturgeon or red wolf, and evaluate feasibility of protection or reintroduction.
- Evaluate impacts of and mitigating practices for wind and solar energy generation on forest biodiversity.

Objective I.C. Invest in Forest Management for a Renewable Rural Economy

Managing forests sustainably can provide green jobs and support communities while generating little demand for community services and protecting clean air and water. Renewable resource economies help meet the needs of today's people while preserving the ability of future generations to realize the same benefits, producing timber, other forest products, food, and energy. Without appropriate markets, forest management is not affordable or widely practiced, decreasing forest health and incentives for keeping forests on private land. Our forests are also of immense social importance, enhancing quality of life, sustaining scenic and culturally important landscapes, and oftentimes defining the essence of a community.

Strategy I.C.1. Partner with forest industry and environmental stakeholders to maintain and attract markets to support sustainable forestry and building practices.

Example Tactics:

- Provide a reliable regulatory environment, implementing the Memorandum of Understanding with the Maryland Department of the Environment (MDE) for the Maryland Forest Service to provide staff trained in forest harvest site review for technical assistance, augmenting the existing roles of MDE, Soil Conservation Districts, and local jurisdictions who handle permitting and enforcement.
- Encourage innovation in wood products, support emerging new sectors and build in-state capacity to transform innovation into commercially competitive renewable products that meet goals for sustainable materials and zero-waste initiatives.
- Continue finalizing the Economic Adjustment Strategy to aid job creation and business growth including in designated Opportunity Zones throughout the state.
- Increase coordination among elements of the forest products supply chain and industry sectors to improve local markets that support sustainable forestry practices and improve the business and policy environment for renewable forest product companies.
- Create a forest industry interactive website to readily provide spatial, quantitative information on forest resource characteristics, constraints, and relevant industry infrastructure, as well as environmental attributes such as carbon sequestration, nutrient reduction, and air quality benefits.Develop options to help landowners afford effective land management actions, considering landscape approaches and marketing of aggregated services and products.
- Encourage adoption of wood certification programs to improve sustainable building practices.
- Expand certification for forest management and wood processing/ chain-of-custody to provide consumer products that are reliably sourced through sustainable means.

Strategy I.C.2. Work with rural development partners to create green jobs and promote a diverse forest products industry for sustainable communities.

Example Tactics:
- Develop forestry elements in the Maryland Economic Development Commission's Strategic Plan, work with regional economic development councils to tailor proposed forest-based economic expansion to industry gaps and markets that support sustainable forestry practices and work with the tri-county councils to incorporate the forestry industry in their Comprehensive Economic Development Strategies (CEDs) where appropriate.
- Pursue regional economic development funding for forestry projects and markets that meet local economic, social, and environmental needs, engaging partners such as The Greater Cumberland Commission and Southern Maryland Agricultural Development Commission.
- Work with the Maryland Agriculture and Resource-Based Industry Development Corporation (MARBIDCO) and other partners to help forest products businesses expand with innovation grants or low-interest loans.
- Expand forest management and income streams for rural landowners, working with the Rural Maryland Council and targeting grant requests through the Maryland Agricultural Education and Rural Development Assistance Foundation (MAERDAF), Rural Maryland Prosperity Investment Fund (RMPIF), and other assistance.
- Utilize the resources of the Maryland Rural Enterprises Development Center to encourage the success of small enterprise development, including considering options for military veterans.
- Develop a "Buy Maryland Forest Products" marketing strategy and integrate forest products into local farmers' markets, craft markets, and Buy-Local campaigns..
- Expand training for green jobs for resource management and restoration, including urban stormwater and green infrastructure projects.
- Expand quality contractors available for tree planting, invasive species control, timber stand improvement, thinning, variable density regeneration harvests, and other forest management practices.
- Encourage businesses based on perennial woody crops, such as Christmas trees, greens, and decorative cuttings.

Strategy I.C.3. Support market-based approaches to encourage private investments in conserving private forests.

Example Tactics:

- Pursue market-based approaches such as water-quality trading, conservation banking, mitigation banking, tax incentives, renewable energy credit trading, and carbon-credit trading, in accordance with the 2013 Forest Preservation Act.
- Sponsor pilot programs and demonstration projects that test and evaluate market mechanisms and innovative approaches.
- Identify options and additions for environmental restoration and resiliency and renewable energy legislation and policies to include forestry contributions, long-term sequestration from durable forest products, new market opportunities, and mitigation and adaptation activities.

Strategy I.C.4 Develop markets for clean-burning, high efficiency woody biomass technology.

Example Tactics:
- Work with MDE to use renewable fuels and reforestation efforts to help meet the state's Clean Energy Goals and Greenhouse Gas Reduction Act goals.
- Demonstrate use, air quality standards, efficiency, and convenience of modern biomass technology at one or more state facilities.
- Identify a reliable supply of biomass from public and private lands through projects that are compatible with sustainable healthy forests, such as thinning for future sawtimber or timber stand improvement to improve forest health.

Strategy I.C.5. Coordinate research needed to support sustainable forestry and efficient markets.

Example Tactics:
- Collect and analyze data pertaining to timber consumption and usage, industrial output, and business trends, sharing with local, state, and federal partners for use in planning and economic development.
- Develop and apply a spatially-based wood resource availability tool to attract forest product businesses that could tap under-utilized forest resources and help diversify forest habitats, manage tree stocking for better forest health, or reduce hazard fuels.
- Work with researchers and forest product operations to develop beneficial uses for wood waste streams that improve the economics of forest product operations and support zero-waste and sustainable materials initiatives.
- Develop techniques for agroforestry practices, product harvesting, and market outlets.
- Identify and market potential sources of underutilized biomass supply for forest products for the future.
- Quantify carbon sequestration with partners, applying relevant research to develop useful estimates for policies and programs.
- Quantify the benefits of Maryland forests across the urban-rural gradient, complementing I-Tree estimates for urban trees and adding spatial distribution.
- Track landowner demographics, attitudes toward management, and patterns of land development related to intergenerational transfer/inheriting land.

Strategy I.C.6. Effectively train public and private forestry, arborist, and natural resource staff and renew that training to provide good service to Maryland citizens.

Example Tactics:
- Provide training in State laws and responsibilities to Maryland Forest Service staff, offering Warden School when 8 or more new or uncommissioned staff members have need.
- Build a career ladder for attracting and retaining diverse talents and backgrounds with core competence in forestry, logging, and wood products processing in state, local, nonprofit, and private settings.
- Maintain clear standards and institutional structure for Maryland Licensed Forester and Maryland Licensed Tree Expert.

- Coordinate with partners such as the Society of American Foresters, Maryland Arborist Association, and International Society of Arboriculture to provide and publicize continuing education in foresters and arborists.
- Provide staff training to support transition to greater scope or responsibility, including supervision, grant writing, grant management, budgets, and leadership.
- Increase coordination and interaction between and among other DNR units and encourage cross-training and mentorship exchange.

Strategy I.C.7. Improve social acceptance of prescribed forest and tree management practices.

Example Tactics:
- Increase use of forest-related curricula by schools, Project Green Classrooms, and other youth organizations such as 4-H, Future Farmers of America, and Young Farmers, integrating with Environmental Literacy requirements.
- Use Walk in the Woods programs to share forest management opportunities with interested citizens.
- Develop Maryland- or region-specific video of the forest to product pathway and connection to a cycle of sustainable forest renewal.
- Expand interpretation of practices on Demonstration Forests and other DNR forest lands and provide themed signage, combining with field tours to foster discussion among participants..
- Implement forest practices on school properties to improve resource sustainability and serve as demonstration areas for classes ("tending the forest garden").
- Implement forest management on local government properties or other lands to serve as demonstration areas for citizens.

Objective I.D. Demonstrate Sustainable Forest Management on Public Lands

Use public forest lands to demonstrate the practice of sustainable forest management that could be emulated on private land and supply scarce landscape elements like old-growth and early successional habitat for the public good.

Strategy I.D.1. Maintain capacity for forest management, including maintaining necessary workforce levels and appropriate skill sets.

Example Tactics:
- Evaluate and address staffing needs for mandated sustainable forest certification.
- Provide appropriate training, equipment, compensation, and job classifications to state forest land management staff.

- Address institutional capability, both in workforce levels and transfer of knowledge.
- Provide priorities for filling vacancies and analyze future needs, particularly for maintenance staff to service additional state forest acreage.

Strategy I.D.2. Continue sustainable third-party certification of state forests to improve the practice of ecological forestry with independent oversight.

Example Tactics:
- Maintain certification of all major state forests.
- Maintain database and documentation capacity to support certification and adaptive management, including derogations to maintain the use of treatments to address invasive species that threaten native species.
- Develop and use a series of indicators to measure sustainable forestry on state lands and at the landscape level.

Strategy I.D.3. Provide a diversity of forest types and ages across the landscape, coordinating with interdisciplinary and advisory teams to assure a balanced approach to multiple resources.

Example Tactics:
- Develop long-term plans that increase diversity over time, increasing extent and quality of older forests and early successional habitat.
- Protect natural systems through best management practices and enhance native ecosystems, using diversity to manage risk with changing conditions, and consider a balance between fire suppression to protect communities and prescribed fire to restore fire-dependent forest types.
- Develop agreements for public lands with allied local, regional, and federal partners to be leaders in cooperating with integrated pest management approaches and development of effective biocontrols for problematic invasive species.
- Support sustainable forest management in state and local parks and wildlife management areas to meet overall land management objectives.
- Integrate measures of landscape context to increase benefits of the diverse forest types and plan for shifting conditions over time, including on prior minelands or degraded lands.

Strategy I.D.4. Maintain a regularly updated natural resources inventory and capabilities for monitoring forest conditions and health.

Example Tactics:
- Invest in needed protocol development, personnel, equipment, and training.
- Collaborate with federal and state partners to maximize utility of inventory data and ability to exchange information.
- Identify additional information needs such as road location and condition, ecological importance, economic analysis, economic forecasts, and other data gaps.

Strategy I.D.5. Provide a diversity of sustainable recreation opportunities on public lands.

Example Tactics:

- Identify and utilize funding sources to develop recreational opportunities in balance with sustainable forestry practice

- Create interpretive signage, exhibits, or web interfaces to increase public understanding and appreciation of forestry during recreational activities.
- Develop partnerships with recreational user groups to aid creating and maintaining recreational resources.
- Address uncontrolled destructive recreational use on public lands.
- Maintain/promote primitive/passive recreation opportunities.
- Improve public access to waterways adjacent to public lands (incl. John Smith Water Trail).

Maryland Goal II. Manage Forest Health and Fire

(Supports National Priority II, Protect Forests from Threat)

The incredible range of benefits from forests relies on maintaining the health of the trees and forest communities over time. The stresses endured by forests have changed over time, and require some changes and additions to management actions. The settled landscape comes with an altered fire regime that demands widespread suppression, more variety and extent of invasive exotic species, and populations of white-tailed deer unrestrained by native predators. Keeping the natural resilience of the forests to storms, pests, and other threats requires addressing both sudden events and chronic stresses.
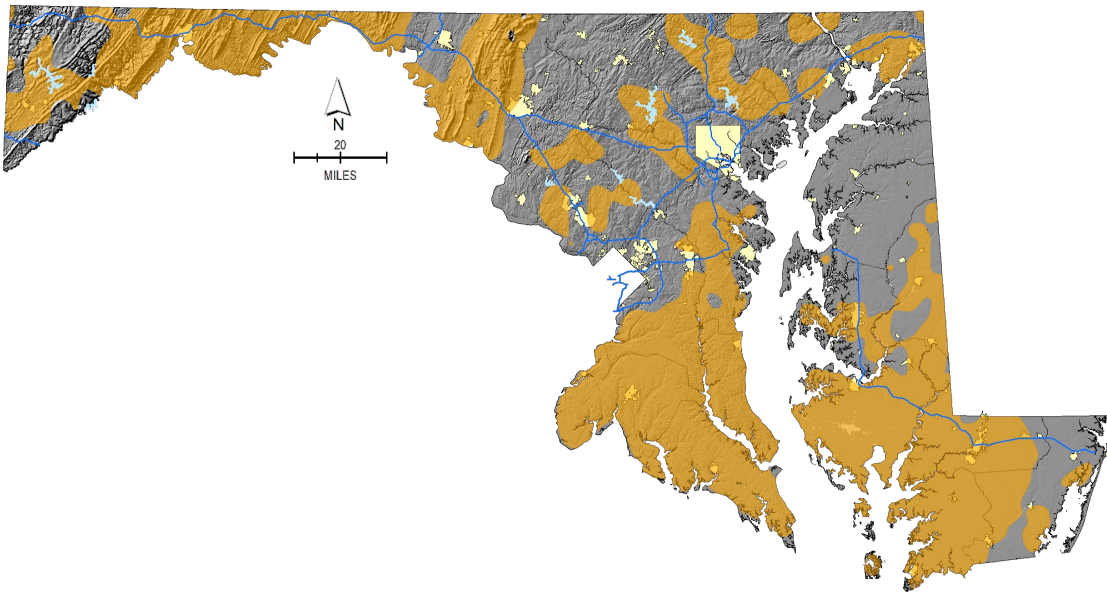
Figure 3: Priority areas for wildfire suppression and risk reduction

Objective II.A. Provide Emergency Response to natural resource threats.

Trained personnel, partnerships and resources are needed during disasters like wildfires, storms, and other deadly threats that require immediate action to protect forests and minimize damage.

Strategy II.A.1. Provide timely and effective fire suppression for wildland fires, maintaining skills for an incident command system.

Example Tactics:
- Maintain levels of trained personnel to effectively control wildfires, maintaining services to priority areas (Figure 3).
- Provide readily accessible wildfire training to agencies and other emergency responders.
- Identify staff in each region of the state with appropriate commercial driver's licenses so that each region of the state can readily move firefighting equipment such as bulldozers onto trailers during emergency response, providing training and support for needed licensure if needed to maintain minimum functional staffing.
- Work with partners to share training and expertise to expand statewide capacity for forestry practices, such as the training and coordination that expands prescribed fire capability through the Fire Learning Network.

Strategy II.A.2. Provide timely and effective response to other emergencies or disasters affecting forests (invasive species, storm damage, earthquakes….).

Example Tactics:
- Use the Incident Command System (ICS) to provide a disciplined and effective response to emergencies.
- Develop policies to guide the response to identified catastrophic threats.
- Develop funding sources for the Forest Health Emergency Contingency Program authorized by the 2009 Sustainable Forestry Act, an emergency response fund similar to the Beach Replenishment Fund.
- Develop pre-approved procurement and strategically located sort yards for better wood utilization during and following emergency responses.

Strategy II.A.3. Maintain partnerships and build response capacity with fire departments and emergency response agencies.

Example Tactics:
- Participate in state and local emergency response planning, assuring compatibility among responders and clarity of supporting roles.
- Provide grant funding opportunities to volunteer fire departments for effective wildland fire response.
- Address wildland fire equipment needs through partnerships, adding participation in programs such as the Fire Fighter Program to pursue a supply of relevant equipment.

- Participate in the Mid-Atlantic Forest Fire Compact for regional coordination of emergency response needs and contributions to the National Cohesive Wildland Fire Strategy.
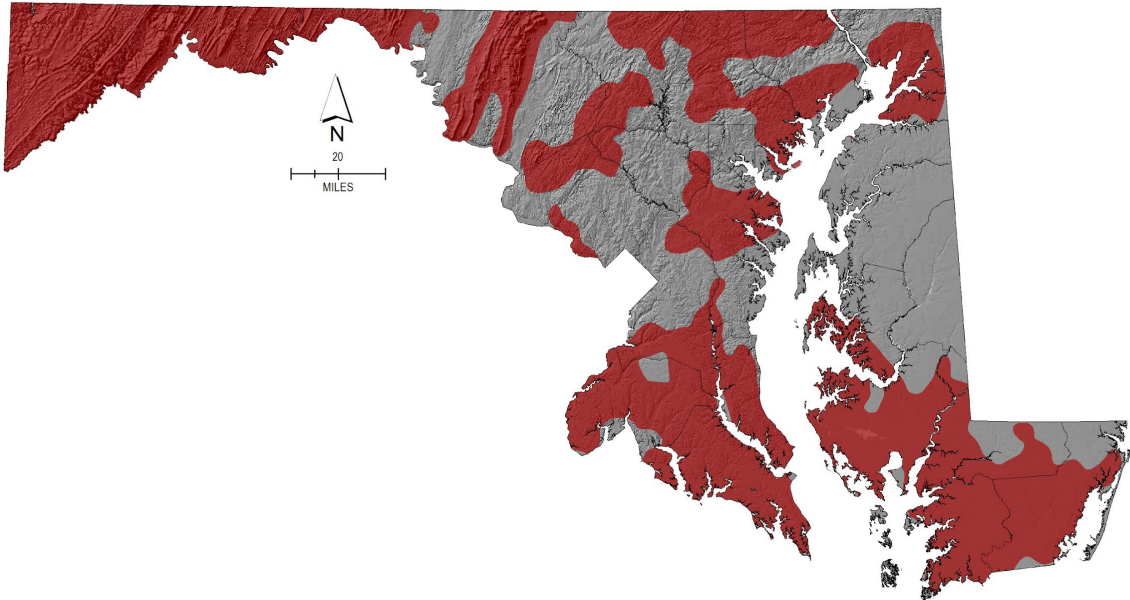
Figure 4: Priority areas for addressing forest health issues

Objective II.B. Develop approaches to reduce threats from long-term stressors to forests.

There are many threats to forests that act gradually and cumulatively and over time, are changing the health, composition, and resilience of our forests. A tailored response identifies gaps in information and actions needed, builds on existing partnerships and planning, and promotes actions that can shift trends toward more sustainable conditions.

Strategy II.B.1. Pursue control of deer browsing where normal forest regeneration is threatened.

Example Tactics:
- Work with DNR Wildlife staff to identify trends in forest regeneration from long-term USFS Forest Inventory and Analysis data, and shifts in stand composition from older to younger forests.

- Work closely with wildlife agencies to support effective deer management policies and rules.
- Develop cost-effective options appropriate to Maryland conditions to regenerate native trees at various levels of browse pressure, including less-preferred species and fencing options.
- Develop and share informational materials for landowners on seedling protection options.

Strategy II.B.2. Control invasive plants where normal forest growth and regeneration is threatened.

<u>Example Tactics:</u>
- Expand awareness of invasive plants through forest stewardship planning and statewide coordination of invasive species control efforts using an integrated pest management approach.
- Provide invasive plant control planning assistance to local jurisdictions and landowners, increasing local capacity to effectively control exotic plants and allow forest regeneration.
- Improve control recommendations in forest management plans and implement the DNR Do-Not-Plant policy for exotic invasive species.
- Improve capacity to quickly control new invasions and reduce damage from established invasive plants, using approaches that protect rare species.
- Prioritize efforts on species of greatest concern for tree regeneration and forest quality, using pilot projects to identify effective approaches for control and targeting.
- Train field staff in invasive species control techniques, supporting pesticide applicators license training and testing.
- Provide annual pesticide recertification training in topics to advance the practice of sustainable forest management, addressing current and emerging forestry issues.

Strategy II.B.3. Control invasive pests, destructive insects and diseases to prevent widespread forest mortality and loss of native forest types.

<u>Example Tactics:</u>
- Work with partner agencies and groups to identify infestations, their extent and severity, and carry out available responses.This includes biocontrol releases and surveys, targeting priority areas in Figure 4.
- Improve capability for rapid response for control.
- Develop long-term action plans to reduce severity of damage and increase resilience of forest ecosystems.
- Develop data on species composition and distribution in urban and rural areas.

- Use Integrated Pest Management practices to minimize unintended effects on non-target organisms like butterflies and beneficial insects.

Strategy II.B.4. Reduce wildfire risk in areas of Wildland Urban Interface.

Example Tactics:
- Develop Community Wildfire Protection Plans to address fuels, hazards, response capability, interactions with recreation, and defensible space in priority locations not already covered (Figure 5).
- Reduce hazard fuels through prescribed burning or mechanical treatments.
- Reach private forest owners with information on managing fire risk on forested property.

DRAFT Maryland Fire Priority Areas Compared
with Community Wildfire Protection Plans (CWPP)
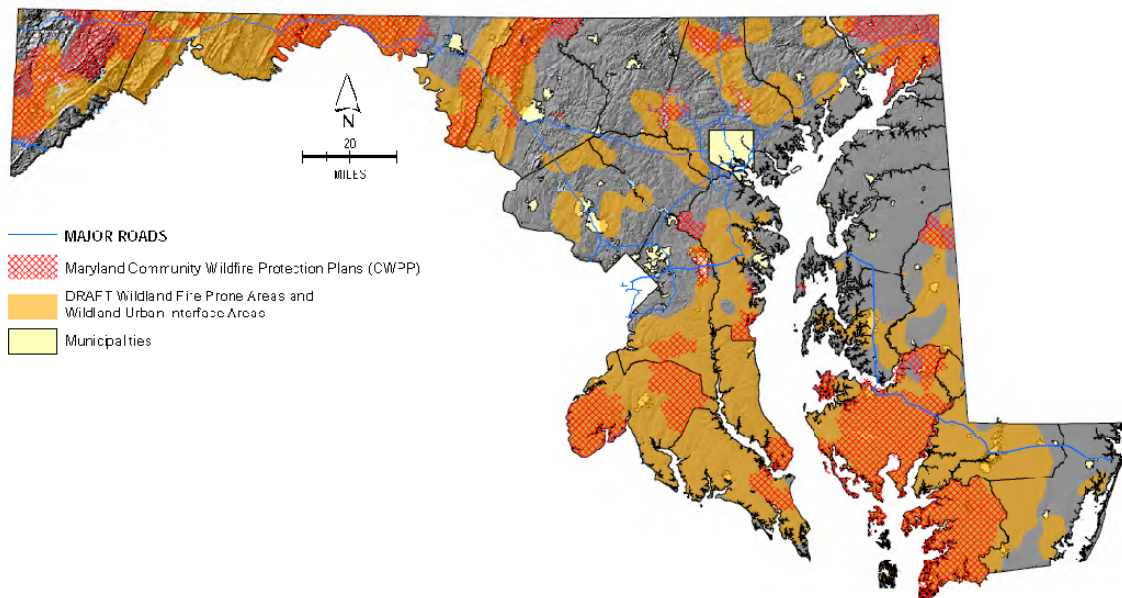
Figure 5: Community Wildfire Protection Plan coverage and State Fire Priority Areas

Strategy II.B.5. Promote scientifically based management practices including prescribed fire to maintain native forest composition and balanced age distribution altered by fire suppression and other ecological disturbances.

Example Tactics:
- Expand use of prescribed fire to counter long-term ecological impacts of wildfire suppression on native plant communities, coordinating with partners through the Nature

Conservancy (TNC), Fire Learning Network or other fire ecology training efforts to best take advantage of limited seasonal windows of opportunity to apply fire.
● Provide information on management needs and forest management options for a variety of parcel sizes through an integrated forest landowner information portal like Forestry for the Bay.
● Identify successful elements from other regions (e.g., longleaf pine management in South or New Jersey Pinelands), evaluate relevance to Maryland forest ecosystems, and incorporate into local programs.

● Where prescribed fire is not readily applicable, use other practices to restore natural disturbance regimes and diversity in age structure in support of native plant communities like oaks and other mast-bearing species important for winter wildlife food.
● Use available cost-share such as the Conservation Reserve Enhancement Program (CREP) to support rare species habitat restoration.

Strategy II.B.6. Address resource damage from uncontrolled recreation across stakeholders.

Example Tactics:
● Work with stakeholder groups, landowners, and other interested citizens to develop policies, rules, areas, and fees that can balance access with resource protection.
● Support BMPs for providing private recreation opportunities/markets.
● Address fire risks from recreation.
● Support restoration of damage from uncontrolled recreation.

Strategy II.B.7. Reduce impacts to forests due to fire suppression and change in land use (development or roads) at state or local levels, and promote beneficial mitigation locations.

Example Tactics:
● Mitigate development impacts through coordinated implementation of laws like the Forest Conservation Act, Chesapeake and Atlantic Coastal Bays Critical Area Law, Nontidal Wetlands Law, land use planning laws, Reforestation Law (5-103) and other local programs.
● Offset forests lost to road construction with effective mitigation in proximity to the affected forests.
● Expand use of prescribed fire to restore fire-dependent ecosystems, building skills through the TNC Fire Learning Network and further coordinating multi-agency/organization burn teams.

Maryland Goal III. Provide Clean Water

(Supports National Priority III: Enhance Public Benefits from Trees and Forests)

Forests are vital to providing clean and abundant water for Maryland. Our public lands are the source of fresh drinking water and more than a quarter of our fresh water flows from and is filtered by these lands. The threats of erosion, sedimentation, wildland fire, invasive pests, severe storm events, and increasing development pressures impact the quantity, availability, and quality of Maryland's water resources and the health of its watersheds. The Maryland Forest Service will promote the restoration and maintenance of watersheds to ensure abundant clean water, the protection of soils, and the health of aquatic and terrestrial ecosystems. Total Maximum Daily Load (TMDL) requirements have been developed for many of Maryland's watersheds, and a TMDL is being finalized for the Chesapeake Bay main stem. Keeping and restoring forests in key locations is a fundamental path to reduce many pollutants in waterways with TMDLs, including nitrogen, phosphorus, sediment, and biological impairment. Forests offer long-term, sustainable improvements in water quality, particularly if pollutants are also controlled at sources.
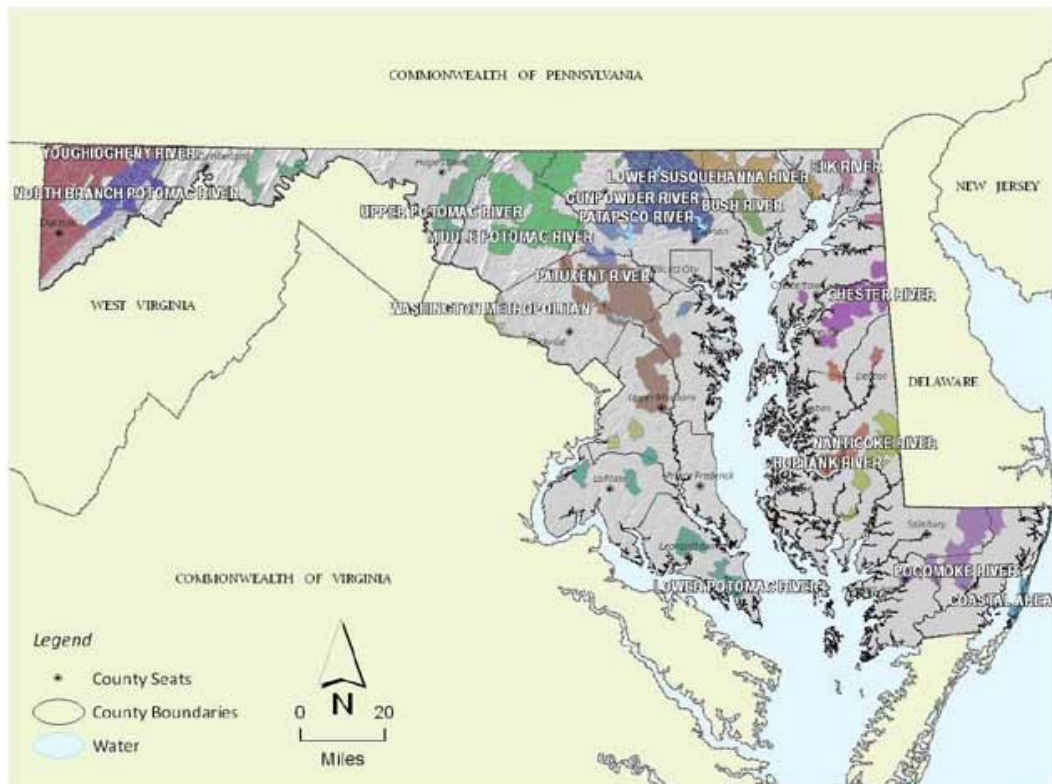

Figure 6: Priority areas for protecting water quality and supply, with emphasis on drinking water supply areas.

Objective III.A. Revitalize the Chesapeake Bay and other priority waters

Work with partners to identify and revitalize waterways critical to the social, economic, ecosystem health of communities.

Strategy III.A.1. Collaborate with local partners to use forests and trees to improve watershed conditions.

Example Tactics:
- Focus resources in targeted areas to bolster progress in important watersheds such as those identified in Figure 6, develop innovative approaches, and expand information on using forests for watershed health.
- Use pilot projects to develop effective approaches for management challenges like urban watersheds, green infrastructure protection, or ecosystem-based management.
- Tap available funding programs to fund well-designed tree and riparian projects, including the Chesapeake and Coastal Bays Trust Fund, National Fish and Wildlife Foundation grants, and Chesapeake Bay Implementation Grants.
- Mitigate forest loss and restore functional forests on a watershed basis to maintain water quality.
- Expand public-NGO partnerships to tap new sources of funding for tree planting.
- Support Watershed Implementation Plans with targeting, outreach, new tree planting, and maintenance strategies.
- Bolster and learn from other watershed organizations and efforts, sponsoring opportunities for training and information exchange.
- Provide the Tree-Mendous Tree Order form to provide trees at a discounted rate for public land plantings.
- Assist landowners in accessing grant programs and utilizing market-based solutions.

Strategy III.A.2. Protect a minimum of 70% of Maryland stream sides and shorelines with riparian forest buffers.

Example Tactics:
- Identify new forest buffer planting funding to address potential forest buffer sites with willing landowners not eligible for other major incentive programs such as the Conservation Reserve Enhancement Program (CREP).
- Work with USDA and the CREP Advisory Committee to continue to improve the ability of the CREP and CRP programs to restore riparian function.
- Increase assistance to landowners in maintaining and managing riparian forest buffers.

- Coordinate and promote forest buffer restoration efforts among multiple agencies and organizations, guided by the Stream ReLeaf Coordinating Committee and high-level interagency coordination.
- Using voluntary approaches and existing regulatory authority to maintain and expand forest buffers on streams and shorelines, such as grant programs and market-based solutions.
- Track progress in, measure effectiveness of, and establish a robust verification protocol for restoring riparian forest buffers to improve successful outcomes.
- Analyze unbuffered streams and shorelines, identify areas most critical for water quality improvements, such as the Susquehanna and Potomac, and develop targeting at a scale useful for planning projects.
- Identify barriers to restoring and conserving forest buffers in priority areas, prioritize significance and approachability of barriers, and develop strategies to change or minimize barriers.
- Identify opportunities where forest buffers can contribute significant improvements to meet Total Maximum Daily Load (TMDL) reduction.
- Support and expand the Backyard Buffer program to supplement voluntary landowner plantings along buffers on private property.

Strategy III.A.3. Conserve forests important for water quality.

Example Tactics:
- Expand awareness of programs and approaches available to conserve forests important for water quality, coordinating with adjacent states.
- Update targeting of forests that disproportionately contribute to water quality.
- Track progress of forest conservation through multiple land conservation efforts including purchase and donation of easements and other land conservation instruments, and effective regulation such as local zoning.
- Develop other alternatives to increase forest conservation using conservation financing.

Strategy III.A.4. Protect important aquatic habitats and water-dependent terrestrial wildlife.

Example Tactics:
- Ensure that water quality targeting addresses the aquatic life aspect of water quality.

- Collaborate with DNR Fisheries, Resource Assessment, and Wildlife units and MDE to develop long-term approaches for protecting priority habitats and sensitive resources.

Objective III.B. Manage Forests for High-Quality Drinking Water

Connect people to healthy forests through clean drinking water initiatives in priority watersheds.

Strategy III.B.1. Identify priority watersheds and work with communities to improve source water protection through watershed forestry.

Example Tactics:
- Offer technical forestry assistance for forest management to protect drinking water supplies.
- Identify and address risks, like wildfire, that threaten community water systems and other important water resources.
- Use science to design new conservation strategies for drinking water protection /disinfection byproducts/interaction with filtration systems.
- Assist communities and local jurisdictions with accessing grants and low-cost capital for projects that protect drinking water

Strategy III.B.2. Collaborate with watershed partners to restore watershed quality from the headwaters to rivers, through farms and working lands into urban centers.

Example Tactics:
- Share learning from watershed partnerships, pilot projects, and monitoring to encourage use and improve success of forest restoration for watershed health.
- Develop guidelines or best practices for incorporating forest restoration and conservation effectively into relevant land use planning for the long-term improvement of streams and watersheds.
- Integrate forest and urban tree opportunities into planning tools such as the Park Equity Mapper, considering diversity, equity, inclusion, and justice in restoration efforts and recreation planning.

Objective III.C. Advance use of forest harvesting best management practices (BMPs).

Strategy III.C.1. Expand awareness and monitoring of BMPs.

- Provide on-site monitoring, working with loggers and landowners to use BMPs effectively, partnering with Soil Conservation Districts, local governments, MDE , Master Logger, and the University of Maryland Extension.
- Coordinate with MDE to assure predictable use of BMPs and enforcement, implementing the 2019 Memorandum of Understanding.
- Assess effectiveness and implementation of BMPs at least every five years.

Strategy III.C.2. Improve implementation of BMPs.

Example Tactics:
- Collaborate with the Master Logger Program and MDE to support effective and efficient implementation of sediment and erosion control requirements.
- Improve capacity of operators to minimize impacts through appropriate equipment choice, using low-interest loan programs to promote light-on-the-land harvesting.
- Share techniques for improved haul road BMPs that may be needed, such as less frozen conditions for low-impact winter logging and more instances of heavy rainfall.

Maryland Goal IV. Create Healthy, Livable Communities with Trees and Forests

(Supports National Priority III: Enhance Public Benefits from Trees and Forests)
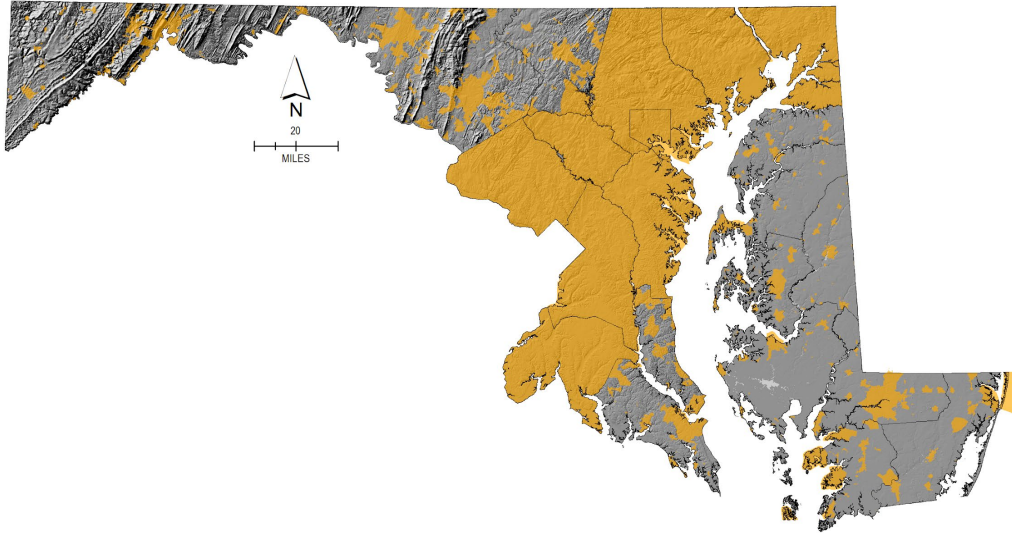
Figure 7: Priority areas for urban and community forestry goals.

Objective IV.A. Connect people to trees and forests for healthy lifestyles.
Evidence is mounting on the numerous ways that trees and forests help people live healthier lives and heal faster. These benefits are needed in all types of communities, from major urban centers to small, rural towns.

Strategy IV.A.1. Promote diverse nature-based solutions for healthy lifestyles and healing.

Example Tactics:
- Engage community leaders in projects that use trees and forests to meet community needs, from reducing heat islands to engaging new neighbors in community improvement and expanding recreational options.
- Partner with health care facilities to take advantage of therapeutic uses of trees and forests, nominating qualifying projects at residential health care facilities for Arbor Day Foundation Tree Campus, Health Care recognition.
- Expand awareness of the benefits of urban greening and the expanding research basis, such as at Green Cities: Good Health.

- Communicate tree planting opportunities, benefits of forests and trees, and other forestry topics through social media to increase public awareness.
- Increase urban wood utilization and build on the experience of existing programs such as the Baltimore Wood Project's Waste to Wealth initiative, where wood is salvaged from building deconstruction and urban tree care operations, then repurposed and sold locally, creating sustainable material supply and reducing waste.

Strategy IV.A.2. Provide accessible forest-based recreation and education, addressing issues for diversity, inclusion and equity, particularly in underserved communities, urban or rural.

Example Tactics:
- Partner with communities to assess tree canopy expansion options on school campuses that can be used for outdoor education.
- Use the Arbor Day Poster Contest in grade schools to build awareness and enthusiasm for the benefits provided by trees and forests.
- Provide youth programs that build a career ladder for encouraging diversity in natural resource careers and urban forestry (e.g., Conservation Jobs Corp, the Maryland Conservation Corps, summer camp at UMD, Natural Resource Careers Camp).
- Tap the expertise of diversity workgroups and organizations to build interest in trees and forests in underserved communities.
- Collaborate with stakeholders, agencies, and organizations to develop plans, projects, and maintenance guidelines that improve recreational safety and maintain environmental functions in urban and rural communities.
- Address equity issues and underserved communities in varied ways, including local and regional greenways, city parks, restored urban stream corridors, street trees, and other urban forests.

Objective IV.B. Support Livable Green Communities

People like to live in communities with green space and trees, which is reflected in higher real estate values where well-tended trees are present. Trees and forests grow environmental services like cleaning air and water, and build demand for green jobs in tree care and landscaping.

Strategy IV.B.1. Provide urban and community forestry assistance to cities, suburbs, and towns to enhance and restore open space and expand urban tree canopy.

Example Tactics:
- Work with local jurisdictions and state agencies to minimize the loss of trees during development, guide mitigation to locations that benefit tree canopy goals and expand mitigation in ecologically valuable restoration areas.
- Work with the Maryland Urban and Community Forestry Committee to identify approaches and actions to improve urban forests and opportunities for urban forestry workshops.
- Provide technical assistance for assessing urban tree and forest canopy, developing canopy goals, and targeting new areas for tree planting to meet the Chesapeake Bay Program goal of 2,400 acres by 2025 in the Vital Habitats Outcome.
- Track urban tree canopy goals and quantify benefits of planted trees with science-based assessment tools.
- Provide opportunities for community-based volunteer tree planting, supporting tree plantings for Earth Day, Arbor Day, and other events.
- Support tree planting on public lands, providing low-cost containerized trees through the Tree-Mendous MD program, Gift of Trees, and other means.
- Use recognition programs such as PLANT (People Loving And Nurturing Trees), the Arbor Day Foundation, and the Mid-Atlantic Chapter of the International Society of Arboriculture awards to highlight and reward urban forestry programs in communities.

Strategy IV.B.2. Share urban forestry and agroforestry techniques and tools and continue working with municipalities to establish and maintain local urban forestry programs.

Example Tactics:
- Assist communities with creating and maintaining programs that establish, maintain, and replace urban trees and forests.
- Expand options for and awareness of financial assistance for tree planting and urban tree canopy expansion.
- Expand options and techniques for successful urban tree planting and maintenance.

Strategy IV.B.3. Develop tools to help communities strategically connect open spaces to build a functioning green infrastructure.

Example Tactics:
- Develop and share information and tools to help local leaders and planners strategically protect parks, riparian areas, source water protection areas, and wetlands.

- Integrate land planning, management, and conservation to build an interconnected green infrastructure that provides stormwater management, recreation opportunities, and a high quality of life for urban and suburban citizens.

Objective IV.C. Improve health and survival of urban forests.

Each city, town, and neighborhood has unique challenges and opportunities for incorporating trees and forests; working across all land types is needed, reaching public and private landowners, managers, and service providers.

Strategy IV.C.1. Ensure professional and safe urban tree care.

Example Tactics:
- Maintain and improve a state licensing program for tree care professionals with standards of practice and expertise, training, and testing.
- Ensure continuing education opportunities for tree care professionals, including topics on urban tree-related technology and new laws, regulations, and policies.
- Encourage expansion of species palette and use of native species by landscape architects to improve diversity of the future urban forest.

Strategy IV.C.2. Manage conflicts of natural tree growth with public utilities and existing infrastructure.

Example Tactics:
- Maintain capacity to regulate tree care practices in public right-of-ways.
- Promote the Right Tree/Right Place approach to tree establishment.
- Improve tree care practices in public right of ways.
- Implement roadside-tree programs to maintain healthy tree canopy near roadways that does not interfere with safe travel on roads.

Strategy IV.C.3. Identify appropriate standards and recognize beneficial urban tree care programs and practices in localities.

Example Tactics:
- Recognize communities that have demonstrated good urban tree care and progress in tree cover through programs such as PLANT (People Loving and Nurturing Trees), Tree City USA, Tree Campus USA, Tree Campus Health Care, and other local initiatives.
- Provide technical assistance to aid communities in improving tree health as part of tree canopy expansion and urban forest management.

Maryland Goal V. Respond to Climate Change
(Supports National Priority III: Enhance Public Benefits from Trees and Forests)

Climate change and changing weather patterns are leading to warmer winters, drier summers and more heavy rainstorms. Managing landscapes to be more resilient to these changes will require an adaptive management approach based on maintaining ecosystem health, diversity and connectivity. These actions will result in other desired outcomes, or co-benefits, such as clean water, more attractive neighborhoods, and increased opportunities for outdoor recreation.

Objective V.A. Plant and Care for Trees and Forests to Mitigate for Climate Change and Natural Hazards Impacts

Trees are nature's original solar panel and carbon storage solution. They provide environmental services and health benefits while they grow and are renewable resources to meet today's needs for shelter and heat when harvested. How we replant and care for young trees can greatly affect the types and rates of future benefits from trees, including carbon sequestration. Partnerships and leadership are needed to realize gains in forest and tree-planting

that optimize contributions to combat climate change and natural hazards-related impacts.

Strategy V.A.1. Target expanded tree and forest planting to improve carbon sequestration, air quality, urban heat, and stormwater management.

Example Tactics:

- Use expanded tree and forest planting programs in Goal I to address mitigation needs, identifying opportunities to better implement actions through existing forestry programs and regional partnerships.
- Partner to develop planting programs targeted at urban heat islands, incorporating research-based design principles on size and distribution of forest patches and pairing with other goals for attractive communities and healthy lifestyles.
- Evaluate climate trends and goals for resistance, resilience, or transition of forest systems when selecting tree species and designing plantings and utilizing climate adaptation resources when considering options.
- Identify funding sources that assist the public in addressing identified changes and build on the efficiencies of existing partnerships, such as voluntary carbon credits tracked through Chesapeake Bay Program verification practices for tree and forest planting.

- Expand options to help Marylanders plant trees and forests, such as expanding lawn-to-woodland plantings and Marylanders Plant Tree coupons in partnership with local tree nurseries.
- Work with partners to organize stakeholder meetings, expand information on financing options for landowners in voluntary markets, and develop options for smaller landowner participation.
- Work with partners to identify incentives and support for tree plantings that go beyond that required for mitigation.

Strategy V.A.2 Improve tree survival and growth for greater mitigation potential.

Example Tactics:
- Provide tools to help identify the right tree for site conditions and expected changes in temperature and rainfall, and planting site preparation for better growth.
- Encourage use of tree species that grow to large sizes where space and soil rooting volume permit, tapping their greater potential for carbon storage, shading, and reduced energy use for cooling.
- Develop and communicate information on care needed at different stages of tree growth and provide aids to implement needed care, such as prompts for when to water or not water recently planted trees, and best seasons for mulching, weeding, and pruning.
- Expand digital resources and communication on tree care information and where to find licensed tree care when needed.
- Develop training networks for neighbor-to-neighbor strategies to improve tree maintenance in communities and/or on private land.
- Expand availability of contractors able to perform cost-effective maintenance and management for small woodlots and forest patches, expanding training for interested service providers, such as landscaping and lawn care contractors.

Strategy V.A.3. Improve tracking and coordination of tree planting and operations contributions to mitigation and response.

Example Tactics:
- Help coordinate and track actions related to Maryland's Climate Action Plan, Greenhouse Gas Reduction Act, Clean Energy goals, Coastal Resiliency planning, and Saltwater Intrusion Plan.
- Support and inform research and tools to improve estimates of carbon sequestration, energy efficiency gains from tree canopy shading and urban heat island reduction, and other mitigation contributions.
- Improve tree planting reporting and tracking to quickly assess contributions to carbon sequestration and hazards mitigation.
- Promote and track mitigation and energy conservation through urban tree canopy expansion and tree planting programs like Marylanders Plant Trees.
- Identify improvements in operations that offset or reduce impacts, such as using energy efficient designs for facility upgrades or rehabilitation.
- Identify target areas for planting that reduce erosion and aid in the stabilization of coastal areas.

Objective V.B. Innovate forest management for climate-adapted future forests.

Managed forests were recognized as a foundation for nature-based solutions to climate change (IPCC report, May 17, 2019). Climate impacts exacerbate other stressors in a developing landscape and means that forest management needs to address even more factors to keep healthy, native forests on the landscape. Data-driven forest management, experimentation, monitoring actions, and cross-boundary coordination will help managers adjust actions as conditions change.

Strategy V.B.1. Incorporate climate change adaptation into forest management strategies.

<u>Example Tactics</u>
- Use silvicultural techniques and management guidelines that address climate variability, such as warmer, wetter winters and drought in summers, maintaining appropriate tree stocking levels for greater tree vigor in the face of changing weather patterns.
- Coordinate with restoration partners to augment climate resilience projects with additions of forests, trees, and healthy forest management planning, within project designs or as a complementary practice in the watershed.
- Identify species less adapted to current climate trends and match to refuge sites where they could continue to live, such as higher elevations, northern aspects, or moister sites.
- Manage for drought-tolerant species and spacing to encourage resilience in the face of changing climate and ecology.
- Conserve migration corridors and geologically complex portions of the landscape with more options for short distances between varied sites.
- Consider assisted migration of southern species in parts of the landscape where conditions are changing most rapidly and have the greatest stresses. Ensure representation of species, habitats, and protection during land management activities.
- Design mitigation plantings to support adaptation needs (like forest diversity, pollinator habitat, or afforesting stream buffers) to the extent possible. Educate landowners about woodland adaptation strategies, incorporating state and regional guidelines for climate resilience, and holding a stakeholder meeting on financing options for landowners to access carbon markets
- Use management techniques that increase age-class diversity and structural diversity to develop and enhance early, mid and late successional forest habitats.

Strategy V.B.2. Mitigate climate change with sustainable forest management.

<u>Example Tactics:</u>
- Work with DNR, the Center for Economic and Social Science, American Forests, the Maryland Commission on Climate Change and U.S. Climate Alliance to improve estimates of carbon captured in common forest management scenarios and economic outcomes.
- Quantify carbon impacts (emissions and sequestration) of forest management and wood production over the life-cycle of production, use, and disposal with comparison to alternative products.
- Share knowledge on how to manage forests for continued rapid growth, carbon sequestration, and healthy trees.
- Deploy the needed information and technology on the growth, resilience, and adaptability of forests considering climate change effects.

- Increase CO2 sequestration in forest biomass and carbon storage in durable wood products through varied approaches, from optimizing growth to extended rotations and value-added markets that create long service lives for wood products.
- Implement pilot projects for carbon sequestration on public and private lands to optimize benefits of fee-in-lieu mitigation or other funding sources, supporting green infrastructure expansion, reforestation offsets under RGGI, and anticipating wetland migration.
- Provide information on landowner opportunities for carbon sequestration, tax incentives, and markets, targeting properties with forest stewardship plans.
- Support programs that provide incentives to landowners for improved forest management
- Explore ideas that assist small land parcel owners such as aggregation of carbon credits.

Strategy V.B.3. Adapt sustainable forest management to rising sea level, salt intrusion, and changing forest health stressors.

Example Tactics:
- Widen riparian forests where sea-level rise and erosion are threatening existing forests.
- Avoid epidemics and forest dieback by managing for diverse and resilient forests and reducing stresses from deer and invasive species (plants, pests, diseases).
- Identify sensitive species and plan for continuity of habitat (restoration, refugia, replication, and relocation if needed).
- Address effects of sea level rise and geologic subsidence through appropriate planning of buffer areas and species selection.
- Continue working with the Maryland Department of Planning on Maryland's Saltwater Intrusion Plan.
- Collaborate with regional efforts to characterize risks and adaptation priorities, including coastal resiliency planning, ecoregion climate change vulnerability assessments, use of green infrastructure to improve climate resiliency such as Greater Baltimore Wilderness Coalition, and improving capacity for wood utilization following disasters.

Objective V.C. Diversify forests and develop markets to optimize carbon sequestration and long-term carbon storage.

Strategy V.C.1. Advance renewable energy policies that foster forest land use and habitats.

Renewable fuel sources like woody biomass reduce fossil fuel emissions, with the regrowth offsetting emissions except for energy used in harvesting, transport and energy generation. Most biomass projects in Maryland are expected to focus on harvest residues, portions of trees not used in other wood product markets, rather than land dedicated to farming woody biomass

crops. Contributions will help meet goals for the Clean Air Act, the Maryland Clean Energy Act and the Greenhouse Gas Reduction Act.

Example Tactics:
- Identify facilities where forest biomass could provide locally sourced, reliable, low-cost, renewable energy such as combined heat and power with modern, low-emission technology, especially where natural gas is not available.
- Complete at least two pilot projects in Maryland that would demonstrate the benefits of woody biomass as a renewable energy source.
- Provide technical assistance in right-sized design, fuel sourcing, and effective maintenance of high-efficiency, low-emission woody biomass systems.
- Share successful examples of cost savings and wood sourcing that reduces urban wood waste.
- Promote energy efficient, light-on-the-land harvesting, handling, and processing technologies for woody biomass.
- Facilitate new uses and technologies for converting woody biomass into energy and other bio-based products.
- Contribute to green power for state facilities and renewable energy portfolio.

Strategy V.C.2. Use diverse forest markets to increase production of durable forest products with long life cycles that lengthen carbon sequestration.

Example tactics:
- Use markets for thinning, such as pulpwood, chips, or pellets, to make management for larger trees and longer rotations financially feasible for landowners.
- Expand market options for selling sawtimber, pine and hardwood, and veneer to create incentives for longer rotations and higher conversion rates to durable products that sequester carbon for longer.
- Expand awareness of and demand for mass timber products that promote long-term sequestration and use of renewable, sustainably sourced materials for a variety of construction types.

V.C.3. Expand use of renewable, recyclable, biodegradable wood products that displace use of nonbiodegradable products.

Example tactics:
- Partner with product developers to find packaging solutions that reduce problems with plastic and micro-plastic pollution that does not biodegrade.
- Work with sustainable materials and zero waste programs to expand wood-based solutions that build incentives for keeping more forests growing on the landscape.
- Expand awareness of benefits to forest health from choosing renewable, recyclable plant-based materials, especially within the context of strong rules conserving forests, voluntary sustainable forest certification, and programs for tree planting and restoration.

Timeline and Funding

To implement scientific forest management is to take the long view. Forests mature over decades, even centuries, showcasing past management practices long afterwards. Maryland's Forest Action Plan was developed with goals focused on long-term improvements in conditions, and tactics that can be implemented in the near term. The annual work plan process will be used to identify yearly priorities and actions based on existing resources and to plan for future resource needs.. Unknown stressors or opportunities such as new invasive species or forest product technology changes are likely to occur. New conditions can change priorities quickly, and may require interim revisions of short-term priorities. Assessments will be reviewed for needed updates on at least a five-year cycle.

State and Federal Laws: Other priorities are set by ongoing legal obligations. Maryland has a robust set of laws protecting forests and environmentally sensitive areas, detailed in the Socioeconomic Setting prior to the Goals. Maryland's Sustainable Forestry Act of 2009 and the 2013 Forest Preservation Act are the newest legislation, and the Sustainable Forestry Council provides guidance to DNR on implementing these.These responsibilities are incorporated into the Forest Strategy and will require ongoing commitments of state resources to implement.

Supporting Actions: Success of many of the top priority goals depends on carrying out other key supporting actions. The goal of more livable communities is needed to encourage development patterns that better conserve existing forest. Reducing fire risk in communities through appropriate planning and hazard mitigation is needed to make wildfire suppression practical in the wildland urban interface. Working with partners to address long-term impacts of deer browse and invasive species is needed to allow normal forest regeneration, even if the forests are protected from the primary threat of conversion. Many of these projects will require additional support to have effective results, and some will be included in federal requests that primarily support identified priority actions and places.

The estimated work force needed to deliver all of the desired priorities is substantially more than existing funds can support. Resources already have been allocated to prioritized goals like keeping forests, but the reduction of more than a third of forestry agency staffing over the past several years (see Appendix C) has translated into restrictions on scope of activities. Federal funding requests have generally made up less than 15% of Maryland Forest Service budgets, so federal funds are not expected to fill the gap, merely to provide an avenue for priority actions in appropriate priority areas. Partner and volunteer contributions are not included in the funding analysis, but these are significant existing contributions and have the potential to be even greater.

Targeted program delivery is expected to make up 85% of requests for USFS funds and competitive proposals addressing specific issues and priority areas could make up another 15% of USFS funds requests. Maryland priorities for federal funding will focus on sustainable forests, jobs, water, forest health, and climate actions.

Top priorities related to keeping forests are expected to be included in state and federal funding consistently, although some market development activities may not be submitted for federal funding every year. State land management and certification will be carried out with state funds. Other supporting goals are needed to bolster the quality of existing forest systems, and are

expected to require more funding than is available from state funds. These include wildfire control and hazard mitigation, forest pest inventory and control, urban and community forestry, and watershed forestry actions to support Chesapeake Bay restoration. The least critical supporting actions are expected to be included in federal requests with less frequency and in response to specific needs in priority areas (like urban tree health in the I-95 Corridor multi-state area). Even though these goals were considered to be a second tier in priority, they were included in the strategy because they play critical supporting roles. They are considered important and necessary, even if they command less attention and resources. Partnerships will be important at all priority levels to augment and effectively use state and federal funds.

Partner and Stakeholder Involvement

The 2020 Forest Action Plan was presented and distributed to a variety of stakeholder groups, including the Sustainable Forestry Council, the MD/DE Society of American Foresters, the Maryland Invasive Species Council, and others.

The 2020 MD Forest Action Plan was developed with input from stakeholders and related planning efforts, including the Growing for Good Forestry Literacy survey, Maryland Wildlife Action Plan, 2014 Chesapeake Bay Agreement, University of Maryland Extension survey on future sustainability of forest industry, Maryland Climate Action Plan, Rural Economies Workgroup of the Sustainable Growth Commission.

In May 2019, MD DNR Forest Service held 6 statewide Listening Sessions, staffed by the Maryland Forest Service and members of the Harry R. Hughes Center for AgroEcology.

Western MD - Wednesday, May 8, 2019
6:30 p.m. to 8:30 p.m.
Allegany College of Maryland, Continuing Education Building, Room 12/14
12401 Willowbrook Road, Cumberland, MD 21502

Central MD (Frederick) - Thursday, May 9, 2019
1 p.m. to 4 p.m.
Urbana Regional Library, Anthony M. Natelli Community Room
9020 Amelung St., Frederick, MD 21704

Annapolis - Monday, May 13, 2019
2 p.m. to 5 p.m.
Department of Natural Resources, Room C-1
580 Taylor Ave., Annapolis, MD 21401

Lower Eastern Shore - Tuesday, May 14, 2019
6:30 p.m. to 8:30 p.m.
Ward Museum of Wildfowl, Legacy Center
909 South Schumaker Drive, Salisbury, MD, 21804

Upper and Mid-Eastern Shore - Wednesday, May 15, 2019
9 a.m. to 12 p.m.
Chesapeake College, Room HPAC-127
1000 College Circle, Wye Mills, MD 21679

Southern MD - Monday, May 20, 2019
1 p.m. to 4 p.m.
Potomac Branch Library, Potomac Meeting Room
3225 Ruth B. Swann Drive, Indian Head, MD 20640

The Forest Action Plan issues were presented and discussed at the State Forest Stewardship Committee meeting 10/22/19 (with Forest Legacy Assessment of Need), the Maryland-Delaware Society of American Foresters on Nov. 5, 2019, and the Maryland Forest Service Annual Meeting in September 2019.

Outreach list suggested by State Forest Stewardship Committee 10/22/19
National Urban Community Forestry Advisory Committee- national UCF Strategy
National Research Council
MD Climate Change Commission
MD Sustainable Growth Commission
Soil Conservation Districts
Economic Development, Chamber of Commerce
Greater Cumberland Committee
Appalachian Regional Committee
Chesapeake Bay Program
Federal partners with significant forest holdings, including the United States
    Department of the Interior Fish and Wildlife Service, the National Park Service,
    the Department of Defense, the United States Department of Agriculture, and
    the National Aeronautics and Space Administration.

The results of previous work were considered, including Chesapeake Bay goal state implementation plans, and priority area mapping efforts, in addition to input from the public outreach process. Links to previous work include:

- Maryland's Strategic Forest Resource Plan – 2006
- No Net Loss of Forest Task Force -- January 2009
- Guiding Maryland's Forest Community into the 21st Century – December 2000
- Maryland's Green Infrastructure Assessment – May 2003
- The Importance of Maryland's Forest: Yesterday, Today, and Tomorrow – September 2003
- The Impact of Resource Based Industries on the Maryland Economy - 2005
- Forests and Land Use
- Governor's Commission for Protecting the Chesapeake Bay through Sustainable Forestry - October 2006
- Forest Inventory Analysis Findings (5th Statewide Inventory) - 1999
- The State of Chesapeake Forests – September 2006
- Maryland Sustainable Forestry Act of 2009 (SB 549)
- Maryland's Strategic Forest Land Assessment – October 2003 http://www.dnr.state.md.us/
- forests/planning/sfla/intro.htm or http://www.dnr.state.md.us/forests/download/sfla_report.pdf
- Maryland Stream ReLeaf Implementation Plan - 2005 http://www.dnr.state.md.us/forests/
- download/Stream%20ReLeaf%20Plan%202005%20-%202010.pdf
- Maryland Forest Conservation Goals – 2007 http://www.dnr.state.md.us/forests/pdfs/MFCP43007.pdf
- Tjaden, R., D. Rider, E. Campbell, and A. Hudson. February 2015. Maryland's Forest Resources in a Dynamic Environment: Assessing the future confidence and sustainability of Maryland's forest industry. University of Maryland Dept. of Environmental Science and Technology. 107p. https://dnr.maryland.gov/forests/Documents/sfc/SFC_ConfidenceIndex.pdf
- Maryland Sustainable Growth Commission Rural Economies Workgroup Report, 2015

Stakeholders and Review Process for the Action Plan:

The Maryland Forest Service partnered with the Harry R. Hughes Center for AgroEcology for Forest Action Plan outreach. A Constant Contact survey was developed and distributed through available mailing lists and posted on DNR's Maryland Forest Service website's front page between April and June 2019. Results were compiled in July 2019 (Appendix E).

Six Listening Sessions were held around the state during May 2019.

Surveys were distributed through distribution lists for coordinating committees, including the Stream ReLeaf Coordinating Committee, State Forest Stewardship Committee, Maryland Urban and Community Forestry Advisory Council, the Baltimore County Forest Sustainability Network, State Water Quality Advisory Committee, and broader list serves on the Alliance for the Chesapeake Bay Chesapeake Network, Maryland Group. Comments were solicited from all units within the Maryland Department of Natural Resources. Partners included:

- Maryland Department of Natural Resources
- Maryland Department of the Environment
- Maryland Department of Agriculture
- Maryland Department of Planning
- Maryland Environmental Services
- University of Maryland
- Maryland Environmental Trust
- Maryland Association of Counties
- Maryland Municipal League
- Maryland Association of Forest Industries
- Maryland Forests Association
- Sustainable Forestry Council
- Chesapeake Bay Program, (Forestry Work Group and USFS)
- Chesapeake Bay Trust
- Chesapeake Bay Foundation
- Chesapeake Bay Commission
- Partnership for Sustainable Forestry
- Maryland Association of Forest Conservancy District Boards
- MD/DE Society of American Foresters
- Maryland State Firemen's Association
- Maryland Alliance for Greenway Improvement and Conservation
- Interstate Commission on the Potomac River Basin
- US Forest Service
- US Fish & Wildlife Service
- Natural Resource Conservation Service (State Technical Committee)
- US Environmental Protection Agency – Chesapeake Bay Program
- Forestry for the Bay
- Alliance for the Chesapeake Bay
- The Nature Conservancy
- The Conservation Fund
- Trust for Public Land
- Forest Resource Association

- Eastern Shore Land Conservancy
- Chesapeake Conservancy
- Maryland Arborist Association
- US Department of Defense
- National Park Service
- National Aeronautics and Space Association

The Maryland Forest Service manages the Forest Legacy Program, so current priorities for Forest Legacy and anticipated future directions were considered in the development of the Action Plan.

The DNR Wildlife and Heritage Service was consulted with particular attention to recommendations for fish and wildlife priority areas and preferred data sources. A review of the Maryland State Wildlife Action Plan draft was consulted for Forest Action Plan revisions.

Coordination with other Resource Management Plans

Forests are one of Maryland's many natural resources, and often interact with planning for related resources. Other plans were consulted for opportunities to coordinate management.

Forest Legacy Assessment of Need - An "Assessment of Need for the Maryland Forest Legacy Program" was originally approved by the US Forest Service on January 22, 1996, and a revised version was approved in March 2014. The Forest Legacy areas identify priority areas for conserving working forests, and are an important resource for Maryland Goal I. The Maryland Forest Service will continue to coordinate the Forest Legacy goals into implementation of the overall Forest Strategy.

Maryland State Wildlife Action Plan - Recommendations for all forested habitats identified in the plan http://www.wildlifeactionplans.org/maryland.html were compared to strategies identified in the Forest Action Plan. Frequently recommended actions included:
- Conserve large blocks of contiguous forest where appropriate.
- Protect old-growth forest habitat and adequate forested buffers.
- Establish and maintain landscape-scale protected forest habitat and movement corridors.
- Minimize fragmentation of large contiguous forest blocks.
- Develop and implement protocols to control invasive species in a manner compatible with species of Greatest Conservation Need.
- Protect forests/wetlands through easement/acquisition.
- Incorporate forest conservation into land use and land planning efforts by local, state, and federal agencies.
- Conserve appropriate corridors for movement and dispersal of rare species.

Maryland is developing a detailed mapping resource for conserving rare species and their habitats called BioNet. The Forest Service will collaborate with the Wildlife and Heritage Service to use this and other data sources for targeting forest conservation and restoration where appropriate.

Community Wildfire Protection Plans - CWPPs are included in the State Priority areas for fire/forest health s, and are directly represented in the responses to long-term stressors under Maintaining Healthy Forests.

Maryland Climate Action Plan - Commitments from the Climate Action Plan http://www.mde.state. md.us/Air/climatechange/legislation/index.asp and Greenhouse Gas Reduction Act were included in the State Strategy as priorities under the Maryland Goal, Respond to Climate Change. The Maryland Forest Service actively participated in mitigation and adaptation plan development, and continues to support tracking and implementation for climate change activities.

Chesapeake Bay Goals and Commitments - Commitments for forest buffers and forest conservation for water quality were included in the Maryland Forest Action Plan Strategy, Goal III, Provide Clean Water. The primary commitments are embodied in the 2014 Chesapeake Bay Agreement, and echo the 2007 Response to Forest Conservation Directive 06-1 http://www.chesapeakebay.net/content/publications/cbp_27761.pdf. The goals for forest buffers,

urban tree canopy, and conserving forests in areas important for water quality are ambitious, and require new resources.

Maryland Land Preservation, Park, and Recreation Plan (LPPRP) - Maryland's LPPRP, serves as our state's comprehensive outdoor recreation plan and includes recommendations for improving outdoor recreation opportunities. The most recent LPPRP projects a continued rise in the usage of outdoor recreation areas. Many of the strategy's goals and actions echo recommendations made in the LPPRP, such as:

- Develop educational materials to increase understanding of natural systems.
- Connect schools and communities to natural areas using trails.
- Use youth community service projects for construction and maintenance on DNR lands.
- Partner with local schools, colleges, and universities for conservation education initiatives.
- Aid local governments with developing local parks and greenways.
- Partner with land trusts, local governments, and agencies to leverage greater land conservation.

Program Open Space - Program Open Space (POS) is the state's leading land protection program. Potential acquisitions are scored for recreational benefits and environmental benefits. Targeted acquisitions include forests that are important for water quality. In fact, the Chesapeake Bay Forest Conservation Directive is one of four critical resource layers used to rank and prioritize land acquisition through the evaluation process.

Land conservation programs like POS are included as an important strategy for forest conservation. The Sustainable Forestry Act also directs the Secretary of DNR to consider land conservation priorities that include conserving working landscapes and protecting and restoring forests from a wide variety of threats.

Maryland Emergency Response Plan for Invasive Forest Pests - The emergency response plan for invasive pests is modeled after the incident command structure used for wildfire response. This supports strategies protecting forests from threats.
http://www.mda.state.md.us/plants-pests/forest plan/title.html

Multi-State Issues

Many of the issues facing Maryland's forests are shared by neighboring states. Multi-state issues are being identified as areas (issue areas and/or landscapes) where activities are intended to be coordinated with adjacent states, detailed in the State Forest Assessment, Part I of the Forest Action Plan. Some multi-state issues will be approached through existing coordination groups, such as the Chesapeake Bay Program or Northeastern U.S. planning groups. Other multi-state projects will be coordinated on a project-by-project basis.

Chesapeake Bay - Work for the Chesapeake Bay multi-state issue will focus on actions needed to support Objective III.A. These include riparian forest buffers, forest conservation in areas of high value for water quality, and urban tree canopy. Invasive species issues affect most of these goals, and are included in watershed efforts. Since over 93% of Maryland is within the Chesapeake Bay watershed, most activities in the state affect the water quality downstream. Coordination will be pursued through the continued active engagement in the Chesapeake Forestry Work Group. Maryland has been involved in the Forestry Work Group since its beginning in the late 1980's and will continue to pursue collaborative projects and goals supporting restoration of the Bay and its tributaries.

Appalachian Mountains - Western Maryland is part of the chain of Appalachian Mountains and shares common issues like maintaining robust forest products markets, recreation pressures, surface mine reclamation, oil and gas development, wind energy development, and wildland-urban interface issues for wildfire control. Other issues like expanding ecosystem markets are applicable across a variety of landscapes.

I-95 Corridor - Interstate 95 connects a string of East Coast cities from Boston to Richmond. Many of the actions and solutions for urban forestry issues can benefit from learning from other states and sharing solutions for expanding urban tree canopy, dealing with invasive species, and incorporating more trees into developments.

Forest Health - Several forest health issues have the potential to change Maryland's forests within the next five years. Minimizing damage from forest pests almost always requires coordination with adjacent states and federal agencies like APHIS (Animal and Plant Health Inspection Service). The Maryland Department of Agriculture has primary responsibility for survey, detection, outreach, suppression or eradication of forest pests. Forest health issues anticipated to use a multi-state approach include emerald ash borer, hemlock woolly adelgid (HWA), and thousand cankers disease. Southern pine beetle, yellow-poplar weevil, and Sirex wood wasp are other potential multi-state projects. Fire suppression planning will continue to be coordinated with adjacent states through the Mid-Atlantic Compact. Knowledge and resources for implementing prescribed fire is being shared across state lines through participation in the Fire Learning Network

Diminished Species Restoration - Some of Maryland's forest species historically present are now only in small areas of their former range. These include American chestnut, shortleaf pine, pond pine, red spruce, and Atlantic white-cedar. Restoring these species may be addressed as a multi-state issue since ranges cross state boundaries and shared resources and working with multi-state partnerships like the Central Appalachian Spruce Restoration Initiative could increase efficiency and effectiveness of projects.

Delmarva/Mid-Atlantic Coastal Plain - The coastal peninsula linking Delaware with coastal areas of Maryland and Virginia shares geographic boundaries and socioeconomic similarities. Southern New Jersey has some similar areas of rural land, pine predominance, and extensive wetlands. Cross-state coordination is occurring with Delaware for assessing forest harvest best management practices and developing a peninsula-wide approach for Delmarva. Other issues common to the peninsula include planning for sea level rise, maintaining robust forest product markets, protecting rare species like the Delmarva fox squirrel, and controlling pests targeting pines such as the southern pine beetle and Sirex wood wasp. Thousand cankers disease, carried by Walnut twig beetles and afflicting black walnut, was found in late 2013 in Cecil County, and is expected to be a slow-moving future disease of concern for the Delmarva. Addressing the forest pests targeting the shore or Atlantic white-cedar restoration would combine multi-state issues and geographies, and could facilitate sharing resources like genetically appropriate nursery stock or pest control approaches.

Readiness and Environmental Protection Integration Program Area- Maryland will work with federal partners to plan land conservation to support continued defense and training functions, which can span multiple states through REPI and other similar programs such as the Army Compatible Use Buffer (ACUB).

American Conservation Enhancement Act - Subject to a federal appropriation, new conservation funding opportunities will be pursued under the American Conservation Enhancement Act. The Act recently authorized new grants called Chesapeake Watershed Investments in Landscape Defense (WILD) grants.

Measures for Tracking Progress

The Maryland Forest Service is responsible for reporting progress for a number of different commitments. Many of the forest stewardship, afforestation, urban forestry, fire suppression, and fire risk reduction activities are tracked to meet requirements for USDA Forest Service funding. Some forestry actions like riparian forest buffers, upland tree planting, forests conserved through the Forest Conservation Act, and sediment and erosion control harvest plans/implementation are reported as BMPs for credits in the Chesapeake Bay model. Progress in meeting Chesapeake Bay Commitments like the Forest Conservation Directive is tracked and reported through the Chesapeake Bay Program Forestry Work Group. The Forest Conservation Act requires annual reporting to the legislature of forests cleared, protected, and replanted. Progress in meeting other goals, such as those included in the Maryland Coastal Bays Strategy and the Maryland Climate Action Plan,are reported annually or more frequently. The Marylanders Plant Trees program http://www.trees.maryland.gov has an online tracking mechanism for trees planted statewide. Overall progress tracking will have to coordinate the needs and formats required for these reporting requirements. Progress measures are expected to include:

- Percent forest cover
- Average Diameter at Breast Height (DBH)
- Acres affected by forest pests and diseases
- Number of owners served- stewardship plans, afforestation, timber stand improvement, sediment and erosion control review, buffers, invasive species
- Number and acres of trees planted
- Number of acres affected- in and out of Stewardship (SAP) priority areas
- Number and acres participating in tax programs
- Number of seedlings produced
- Number of species of seedlings raised
- Number of landowners on stewardship plan wait lists
- Acres of certified forest, public and private
- Acres and miles of forest buffers
- Acres of forest protected from development and open to management (total and those within areas of high priority for water quality)
- New forest businesses and distribution in state
- Number of low-interest loans or technical assistance aid
- Number of licensed tree experts
- Percentage of canopy cover and acres of urban tree canopy
- Number of municipalities with urban tree canopy goals
- Number of active ecosystem markets
- Number of people reached with forestry training provided or supported (financial or technical assistance)
- Public land forest resource inventory updated
- Biomass and tons carbon sequestered

Additional measures will be tracked, consistent with recommendations from the National Association of State Foresters and USDA Forest Service State and Private Forestry.

Appendix A: Glossary

This glossary is designed to assist the reader of the Maryland State Action Plan better understand some of the terminology associated with forest management.

A

adaptive management - a dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met.

agroforestry - a land-use system that involves deliberate retention, introduction, or a mixture of trees or other woody perennials in crop and animal production systems to take advantage of economic or ecological interactions among the components.

B

basal area - the cross-sectional area of the trunk 4½ feet above the ground; (per acre) the sum of the basal areas of the trees on an acre; used as a measure of forest density.

Best Management Practice (BMP) - a practice or usually a combination of practices that are determined by a state or a designated planning agency to be the most effective and practical means (including technological, economical, and institutional considerations) of controlling point and nonpoint source pollutants at levels compatible with environmental quality goals, conceptualized in the 1972 Federal Water Pollution Control Act.

biological diversity or biodiversity - the variety of life in all its forms and all its levels of organization. Biodiversity refers to diversity of genetics, species, ecosystems, and landscapes.

biomass (forest) – wood products used as a fuel or energy source that can replace fossil fuels with renewable fuels; usually considered to be wood not normally sold or utilized from a forest harvest, or a short-rotation tree crop grown for energy use.

breast height - 4½ feet above ground level. See diameter at breast height.

browse - parts of woody plants, including twigs, shoots, and leaves, eaten by forest animals.

C

canopy - the continuous cover formed by tree crowns.

carbon credit - A permit that allows the holder to emit one ton of carbon dioxide.

carbon sequestration - the incorporation of carbon dioxide into permanent plant tissues, used to mitigate increasing carbon dioxide levels linked to climate change; tree growth captures carbon dioxide from the atmosphere and reduces it until the wood is burned or decayed.

certified forest – forest land reviewed by a designated authority to attest that the management of forest land meets approved standards for sustainable forestry.

clearcut - the harvest of all the trees in an area. Clearcutting is used to aid species whose seedlings require full sunlight to grow well.

commercial forestland - any area capable of producing 20 cubic feet of timber per acre per year that has not been protected from such use by law or statute.

commercial thinning - a harvest where all or part of the felled trees are extracted from useful products, regardless of whether their value is great enough to defray the cost of operation

conifer - any tree that produces seeds in cones. See softwood.

conservation easement - the public acquisition, by purchase or donation, of certain rights on private lands or, in some cases, restricting the private owner's use of that land, usually restrictions on future buildings.

cordwood - small diameter or low quality wood suitable for firewood, pulp, or chips. Cordwood is not suitable for sawlogs.

crop tree - a young tree of a desirable species with certain characteristics desired for timber value, water quality enhancement, or wildlife or aesthetic uses.

D

deciduous - shedding or losing leaves annually; the opposite of evergreen. Trees such as maple, ash, cherry, and larch are deciduous.

den tree - tree with cavities suitable for birds or mammals to nest in.

diameter at breast height (d.b.h.) - standard measurement of a tree's diameter, usually taken at 4 ½ feet above the ground.

diameter-limit harvest - a timber sale in which all trees over a specified d.b.h. may be cut. Diameter-limit sales often result in high grading.

dominant trees - trees that extend above surrounding individuals and capture sunlight from above and around the crown.

E

ecosystem - organisms and the physical factors that make up their environment.

endangered species - any species or subspecies in immediate danger of becoming extinct throughout all or a significant portion of its range.

even-aged stand - a stand in which the age difference between the oldest and youngest trees is minimal, usually no greater than 10 to 20 years. Even-aged stands are perpetuated by cutting all the trees within a relatively short period of time.

F

forest - biological community dominated by trees and other woody plants, assessed by USDA Forest Service as any area of trees with at least 10% tree cover, at least 120 feet wide, and 1 acre in size measured from stem-to-stem from the out-most edges.

forest certification – see certified forest.

Forest Conservation Management Agreement (FCMA) - 15-year agreement that allows lower property tax assessments on forest land in exchange for landowners following a Forest Stewardship Plan and not changing land use.

forest fragmentation - the subdivision of large natural landscapes into smaller, more isolated fragments. Fragmentation affects the viability of wildlife populations and ecosystems.

forest management - the practical application of biological, physical, quantitative, managerial, economic, social, and policy principles to the regeneration, management, utilization, and conservation of forests to meet specified goals and objectives while maintaining the productivity of the forest —*note* forest management includes management for aesthetics, fish, recreation, urban values, water, wilderness, wildlife, wood products, and other forest resource values.

forest types - associations of tree species that have similar ecological requirements. Maryland forest types include Allegheny hardwood, loblolly-shortleaf, northern hardwood, oak-gum- cypress, oak hickory, and oak-pine.

forested wetland - an area characterized by woody vegetation taller than 20 feet where soil is at least periodically saturated or covered by water.

forester - a degreed professional trained in forestry and forest management. In Maryland, all foresters must be registered with the state.

forestry - the science of tending woodlands.

G

green infrastructure - nature-based solutions and environmental elements that add resilience and deliver ecosystem services; it includes strategically planned and managed networks of natural lands, working landscapes and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations.

group selection - a process of harvesting patches of trees to open the forest canopy and encourage the reproduction of uneven-aged stands.

H

habitat -the ecosystem in which a plant or animal lives and obtains food and water.

Habitat Conservation Plan – a legally binding plan prepared under the Endangered Species Act (ESA) by nonfederal parties and agreed to by the US Fish and Wildlife Service to protect a specified area as habitat for a threatened or endangered species; HCPs are required for those wishing to obtain permits for incidental taking of threatened and endangered species that may occur during land management activities.

hardwoods - a general term encompassing broadleaf, deciduous trees.

harvest - the cutting, felling, and gathering of forest timber.

high grading - to remove all mature, good quality trees from a stand and leave inferior species and individuals. High grading should be distinguished from even-aged management in which mature and immature trees are removed to aid regeneration.

I

improvement cut - a weeding done to remove less desirable trees in stands of pole-size or larger trees.

incident command system - the facilities, equipment, personnel, procedures, and communications operating within an organizational structure,responsible for managing assigned resources to accomplish stated objectives pertaining to an emergency.

industrial forester - a professional employed by a wood-using industry, usually a sawmill, who purchases timber from private woodland owners. Many industrial foresters offer free forest management or marketing services to the landowners who sell timber to the forester's employer.

intergenerational transfer – the passing of assets such as land from older to younger family members.

intermediate tolerance - a characteristic of certain tree species that allows them to survive, though not necessarily thrive, in relatively low light conditions.

intolerance - a characteristic of certain tree species that does not permit them to survive in the shade of other trees.

introduced species - a nonnative species that was intentionally or unintentionally brought into an area by humans.

J

K

L

licensed tree expert (LTE) – a tree care professional practicing or advertising tree care services in Maryland that is licensed to do so in the State of Maryland; the applicant must possess adequate and related college education plus one year of experience under a LTE or have five years' experience under a Licensed Tree Expert (LTE), and pass an exam; a LTE is also required to carry adequate amounts of liability and property damage insurance.

landing - a cleared area within a timber harvest where harvested logs are processed, piled, and loaded for transport to a sawmill or other facility.

logger - an individual who harvests timber for a living.

M

market based solutions - organizational structures for buying and selling units of environmental benefit, known as credits, created through the conservation or high-quality restoration of naturally functioning ecosystems (e.g., clean water, clean air, carbon sequestration, pollination, expanded habitat) in a market.

mast - nuts and seeds, such as acorns, beechnuts, and chestnuts, of trees that serve as food for wildlife.

mortality - trees dying from natural causes, usually by size class in relation to sequential inventories or subsequent to incidents such as storms, wildfire, or insect and disease epidemics.

N

nongame wildlife - wildlife species that are protected by state wildlife laws and cannot be hunted. Examples include songbirds, eagles, etc.

nontidal wetlands - wetlands not affected by ocean tides. Nontidal wetlands are subject to special regulations.

northern hardwood forest type - an association of tree species common to the Northeastern United States that includes sugar maple, red maple, yellow birch, hemlock, and American beech.

O

old-growth forest - a wooded area, usually greater than 200 years of age, that has never been altered or harvested by humans. An old-growth forest often has large individual trees, a multi-layered crown canopy, and a significant accumulation of coarse woody debris including snags and fallen logs.

overmature - a quality exhibited by trees that have declined in growth rate because of old age and loss of vigor.

overstocked - the situation in which trees are so closely spaced that they compete for resources and do not reach full growth potential.

overstory - the level of forest canopy that includes the crowns of dominant, codominant, and intermediate trees.

overstory removal - a silvicultural technique where the trees to be removed are all in the dominant or codominant crown class or position. This basically is performed to harvest mature trees and to remove competition from preferred understory trees.

overtopped - the situation in which a tree cannot sufficiently extend its crown into the overstory and receive direct sunlight.

P

parcelization - division of parcels of land into smaller parcels among multiple owners; usually precedes fragmentation, when gaps in forest cover occur.

pole timber - trees 4 to 10 inches d.b.h.

precommercial thinning - a harvest made purely as investments in the future growth of stands so young that none of the cut trees are extracted and utilized; usually completed by hand on trees 5-10 years of age.

prescribed fire - fires set deliberately, under proper supervision and certain conditions, to achieve a specific management goal such as enhancing wildlife habitat, encouraging fire-dependent plant species, reducing fuel loads that feed wildfires, and preparing sites for planting. Sometimes referred to prescribed burning.

provenance - the original geographic source of seed, pollen, or propagules.

pruning - the act of sawing or cutting branches from a living tree.
pulpwood harvest - a harvest where the trees are to be utilized for paper pulp.
Q

R

reforestation – the reestablishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting).

regeneration - the process by which a forest is reseeded and renewed. Advanced regeneration refers to regeneration that is established before the existing forest stand is removed.

Regional Greenhouse Gas Initiative (RGGI) - The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort by ten Northeastern and Mid- Atlantic states, including the State of Maryland, to limit greenhouse gas emission

release - to remove overtopping trees that compete with understory or suppressed trees.

residual stand - the trees remaining intact following any cutting operation.

riparian buffer - vegetated areas adjacent to or influenced by a perennial or intermittent stream or other bodies of water. These buffers are established and managed to protect aquatic, wetland, shoreline, and/or terrestrial environments.

rotation - the number of years required to grow a stand to a desired size or maturity.

S

salvage cut - the removal of dead, damaged, or diseased trees to recover maximum value prior to deterioration.

sapling - a tree at least 4 ½ feet tall and up to 4 inches in diameter.

sawlog tree - a tree at least 11 inches d.b.h. and suitable for conversion to lumber.
seed tree - a mature tree left uncut to provide seed for regeneration of a harvested stand.

seed-tree harvest - the felling of all the trees in an area except for a few desirable individuals that provide seed for the next forest.

selection or selective harvest - the harvest of all individual trees or small groups at regular intervals to maintain an uneven-aged forest.
shelterwood harvest - the harvest of all mature trees in an area in a series of two or more cuts, leaving enough trees of other sizes to provide shade and protection for forest seedlings.

silviculture - the art and science of growing forest trees.

site - the combination of biotic, climatic, topographic, and soil conditions of an area.

site index - a measure of the quality of a site based on the height of dominant trees at a specified age (usually 25 or 50 years), depending on the species.

site preparation - treatment of an area prior to reestablishment of a forest stand; can include mechanical clearing, burning, or chemical (herbicide) vegetation control.

skidding - the act of moving trees from the site of a felling to a landing.
slash - branches and other woody material left on a site after logging.

snag - a dead tree that is still standing.
softwood - any tree in the gymnosperm group, including pines, hemlocks, larches, spruces, firs, and junipers.
sprout - a tree growing from a cut stump or previously established root system.

stand - a group of forest trees of sufficiently uniform species composition, age, and condition to be considered a homogeneous unit for management purposes

stand density - the quantity of trees per unit area, usually evaluated in terms of basal area, crown cover and stocking.

stocking - the number and density of trees in a forest stand.

stumpage - the value of standing trees in a forest.

succession - the natural replacement of one plant (or animal) community by another over time in the absence of disturbance.

suppressed - a tree condition characterized by low growth rate and low vigor as a result of competition with overtopping trees. See overtopped.

sustainable forestry - the practice of meeting the forest resource needs and values of the present without compromising the similar capability of future generations; criteria for sustainable forestry include (a) conservation of biological diversity, (b) maintenance of productive capacity of forest ecosystems, (c) maintenance of forest ecosystem health and vitality, (d) conservation and maintenance of soil and water resources, (e) maintenance of forest contributions to global carbon cycles, (f) maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs of societies, and (g) a legal, institutional, and economic framework for forest conservation and sustainable management (Montréal Process, 1993).

sustained yield - an ideal forest management objective in which the volume of wood removed equals growth within the total forest.

T

thinning - a partial cut in an immature, overstocked stand of trees used to increase the stand's value growth by concentrating on individuals with the best potential.

threatened species - a species or subspecies whose population is so small or is declining so rapidly that it may become endangered in all or a significant portion of its range.

timber stand improvement (t.s.i.) - any practice that increases the value or rate of value growth in a stand of potential sawtimber trees. Pruning and thinning are considered t.s.i..

tolerance - a tree species' capacity to grow in shade.

Total Maximum Daily Load (TMDL) - regulatory term in the U.S. Clean Water Act (CWA), describing the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards.

tree canopy - any area covered by trees when viewed from above.

U

understocked - a stand of trees so widely spaced that even with full growth potential realized, crown closure will not occur.

understory - the level of forest vegetation beneath the canopy.

uneven-aged stand - a group of trees of a variety of ages and sizes growing on a uniform site; also called all-aged stand.

urban tree canopy - the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

V

vegetation - low-growing, non-woody plants, including wildflowers and ferns, in a forest understory.

veneer log - a high-quality log of a desirable species suitable for conversion to veneer; large, straight, of minimum taper, and free from defects.

W

watershed - a region defined by patterns of stream drainage. A watershed includes all the land that contributes water to a particular stream or river.

well-stocked - the situation in which a forest stand contains trees spaced widely enough to prevent competition yet closely enough to utilize the entire site.

wildlife habitat - the native environment of an animal. Habitats ideally provide all the elements needed for life and growth: food, water, cover and space.

windthrow - a tree felled by wind.
woodland - see forest.

working forest landscape - forest lands that are managed consistently with the requirements of a forest stewardship plan or a forest conservation plan, approved by DNR or a licensed professional forester, that advances sustainable forest management.

X

Y

Z

Portions of this glossary are credited to Nancy Pywell, Extension forester, Pennsylvania State University, whose bulletin titled, "Forestry Terminology" provided the framework for this fact sheet. Some definitions have been modified for Maryland Department of Natural Resources purposes.

Some definitions were taken from The Dictionary of Forestry, John A. Helms, Editor. Society of American Foresters, 1998. http://dictionaryofforestry.org/dict/browse

Appendix B: Summary of Recommendations from the February 2015 Report, Maryland's Forest Resources in a Dynamic Environment: Assessing the Future Confidence and Sustainability of Maryland's Forest Industry

One overall recommendation is that similar surveys be performed on a five-year cycle by the University of Maryland or Maryland Forest Service. Specific recommendations we have deduced from the results of the three surveys are described below.

For Primary and Larger Secondary Forest Industry Owners:
- Provide state tax incentives for the purchase of biomass energy systems.
- Provide low-interest loans for purchases of equipment. Owners of larger forest industries indicated they were more apt to make capital improvements but not hire new employees during the five years that followed. The availability of low-interest loans could help finance such improvements, which in turn could also stimulate the hiring of more employees. • Develop educational programs focused on safety regulations, regulations by the U.S. Environmental Protection Agency and the Maryland Department of the Environment, product pricing/distribution, and new markets/new product development.
- Help the forest industry decrease its fuel costs through the installation of biofuel generators. Provide state incentives for biofuel installation and usage.
- Explore the U.S. Department of Energy's energy-efficiency incentives, similar to those available to the poultry industry, to decrease energy consumption and costs.
- Increase access and availability of raw materials, as the lack of access and availability is a big concern for forest industry business owners. To achieve this:
    - maintain a steady and stable amount of state land available for harvests;
    - increase forest landowners' awareness of forest management options and forest management technology, which can help landowners meet their objectives, such as protecting wildlife habitat and transitioning the land for future generations;
    - increase tree planting efforts to provide raw materials for the future; and
    - help forest landowners understand forest management techniques, which include harvesting trees.

For Loggers:
- Provide state tax incentives for the purchase of chippers for use in the biofuels/ bioenergy market in Maryland.
- Add training programs to the Master Logger Program, concentrating on Maryland's Forest Resources in a Dynamic Environment 45 forest management planning, silvicultural options, safety, first aid, and CPR. Loggers directly buy 38% of harvested timber, providing an opportunity for this training.
- Continue to develop the Master Logger Program, already well received by existing loggers in the program.
- Solicit more loggers into the Master Logger Program.
- Promote the benefits of the Master Logger Program to forest landowners and promote the value of doing business with a Master Logger. Only 44% of Master Loggers indicated the Master Logger Program helped create respect for Master Loggers statewide with forest landowners.
- Encourage the state to explore potential biomass/biofuel markets and to develop state incentives to establish new markets and low-interest loans for new equipment. An

opportunity to develop statewide markets exists because only 8% of loggers have entered into the market.

- Explore federal programs for military veterans and their employers that could enhance the business environment and educational opportunities for veterans.

For Landowners:
- Focus on new forest landowners by developing and increasing educational efforts to help them understand the forest management options and assistance available to them.
- Encourage membership in forestry-related organizations and participation in educational programs and events.
- Increase efforts to educate forest landowners about how to develop forest management plans. 60% of respondents indicated they currently had a forest management plan, demonstrating that current efforts to educate forest landowners about planning have been somewhat successful.
- Increase landowners' awareness of available state and federal cost share programs that can help them in managing their forestlands. Only 29% of respondents indicated they had participated in cost share programs.

Appendix C: Maryland Forest Service Funding Trends

Like many agencies and organizations, the Maryland Forest Service is managing with a shrinking workforce and increases in responsibilities. Between Fiscal Year (FY) 2002 and FY 2010, the Maryland Forest Service lost 63 permanent positions. In 2006, the responsibility for managing state Forests was assigned to the Maryland Forest Service, and some permanent positions were shifted with that responsibility (13 positions for over 130,000 acres on 10 State Forests). A few positions were allotted for critical functions as vacancies occurred. The overall net loss over the years was 52.5 permanent positions, even with the transferred and new positions and substantial new assignments. **Some of those positions were never filled, notably most (9 of 11) of the anticipated positions for the 58,000+-acre Chesapeake Forest acquired just prior to FY2002, which had been created to handle regular property management, the associated Sustainable Management Plan, and the state's first Certified Forest process. As can be seen, the Forest Service has experienced a loss of permanent positions (PINs) (Figure 11). The number of Forest Service-authorized positions declined from 135.5 in FY2001 to 92 in FY2020, a 39% reduction.**

The Maryland Forest Service has taken on new Chesapeake Bay goals, new programs like Lawn to Woodland, Backyard Buffers, Healthy Forests/Healthy Waters, and Marylanders Plant Trees, and expanded State Forest Certification in recent years. Core activities like forest stewardship plans, urban forestry, riparian forest buffer establishment, and tree care responsibilities have become more important than ever as forest area declines and population expands. The total workforce for completing priorities with state forestry staff has declined significantly, even with the addition of some positions with the shift of the State Forests as 7 positions have converted from contractual status in the last few years (Figure 11).
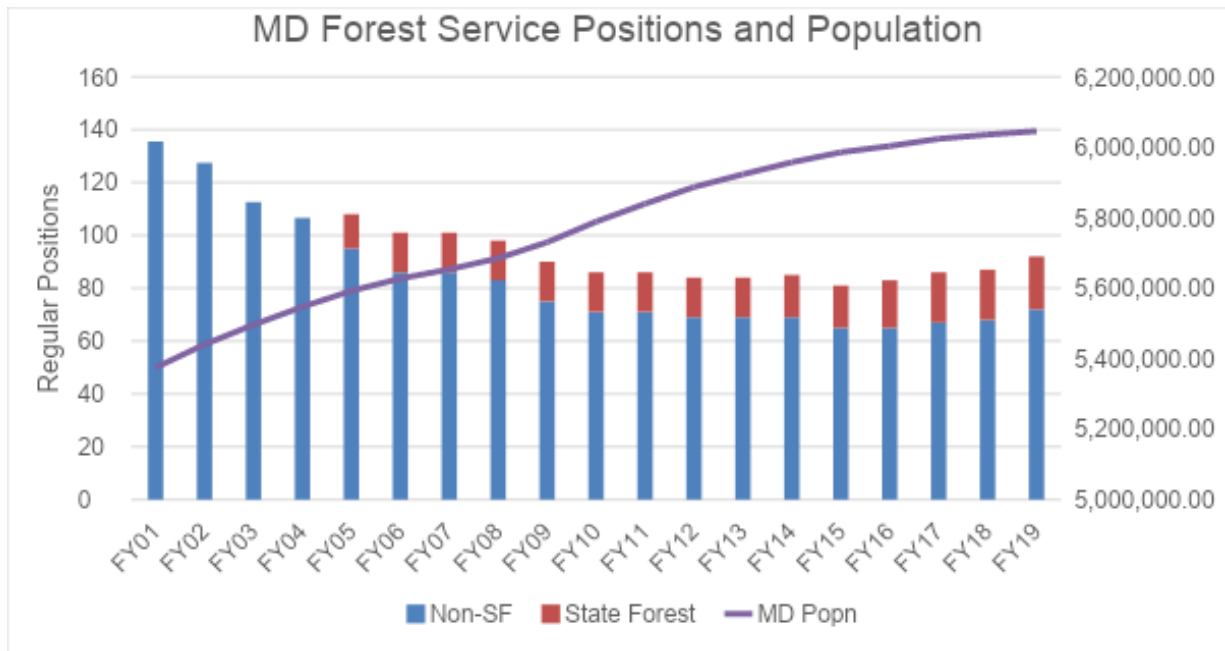
Figure 8: Number of full-time regular positions authorized for the Maryland Forest Service by Fiscal Year (July 1 to June 30), with State Forest management being added in 2005.

If budgets remain stable, the Unit PIN count may also stabilize. However, to make realistic assessments of progress on priority tasks, the Maryland Forest Service (MFS) needs to plan for accomplishing its priority tasks with the expectation it will remain a smaller workforce into the future.

Partnerships and grants have long been significant contributors to strategies for meeting forestry goals, and they are likely to play an even greater role in the future. Federal funds, primarily from the USDA Forest Service, have been a valuable and fairly stable element in MFS budgets, and are matched 50:50 with state funds, so requirements of USFS grant deliverables have significant influence on MFS activities and directions.

State funds comprise the majority of the MFS budget, with a mix of general tax revenue and various special funds. The mix of General and Special Funds varies from year to year but efforts are ongoing to maintain at least level funding to carry out existing laws and required functions. Special Funds are generated through sales and fees, including forest management plan fees, timber sales, campsite fees, shooting range fees, hunting leases, roadside tree permits. They also can include Program Open Space property transfer taxes authorized for operating State Forests and parks.

The priorities and actions laid out in the Strategic Plan will have to take into account these budget realities and further shifts in funding sources. Clear priorities, robust partnerships, and the pursuit of targeted grant funding will be needed to make progress on the identified goals that will make a difference for Maryland's forests and its future.

Appendix D: Tree and Forest Canopy Cover in Maryland by Jurisdiction

	MD Dept. Planning (MDP) Land Area	UMD Canopy Cover Base Year	UMD Estimated Total Canopy Cover	Percent Tree and Forest Canopy Cover	Estimated Urban Tree Cover (US Census Urban Areas 2010)	Estimated Forest Cover from UMD Data	Percent Forest Canopy Cover (>1 ac. patch)
Jurisdiction	**ACRES**		**ACRES**	**%**	**ACRES**	**ACRES**	**%**
Allegany	271,462	2011	216,366	79.7%	12,431	200,237	73.8%
Anne Arundel	265,536	2007	155,233	58.5%	82,176	124,460	46.9%
Baltimore	382,912	2007	188,012	49.1%	74,138	141,188	36.9%
Calvert	136,416	2011	86,832	63.7%	20,894	76,593	56.1%
Caroline	204,429	2011	71,552	35.0%	1,729	65,035	31.8%
Carroll	286,464	2007	102,548	35.8%	17,179	81,225	28.4%
Cecil	221,613	2011	100,594	45.4%	16,068	89,063	40.2%
Charles	292,960	2011	203,009	69.3%	22,278	190,409	65.0%
Dorchester	346,093	2011	132,485	38.3%	1,848	119,538	34.5%
Frederick	422,541	2011	180,006	42.6%	22,504	144,562	34.2%
Garrett	414,144	2011	302,245	73.0%	1,213	291,077	70.3%
Harford*	279,738	2011	115,053	41.1%	33,311	93,370	33.4%
Howard	160,474	2007	81,572	50.8%	43,208	62,066	38.7%
Kent	177,299	2011	52,322	29.5%	466	44,123	24.9%
Montgomery	314,400	2009	157,230	50.0%	88,637	108,967	34.7%
Prince George's	308,922	2011	160,628	52.0%	85,606	126,978	41.1%
Queen Anne's	238,022	2007	75,538	31.7%	3,704	65,751	27.6%
St. Mary's	228,595	2011	141,944	62.1%	19,021	130,297	57.0%
Somerset	204,621	2011	85,529	41.8%	1,153	75,652	37.0%
Talbot	171,866	2011	57,937	33.7%	1,764	47,430	27.6%
Washington	292,979	2011	142,898	48.8%	11,440	116,544	39.8%
Wicomico	239,642	2011	115,331	48.1%	10,998	101,629	42.4%
Worcester	299,699	2011	157,792	52.7%	4,826	148,240	49.5%
Baltimore City	51,802	2007	14,143	27.3%	14,143	4,102	7.9%
Maryland	**6,212,629**		**3,096,799**	**49.8%**	**590,735**	**2,648,535**	**42.6%**
Excludes Aberdeen Proving Ground and Edgewood Arsenal					Source: UMD from LiDAR and 1m NAIP imagery		

Appendix E. Constant Contact Survey Results from Harry R. Hughes Center for AgroEcology

April-June, 2019

2. Association with forestry						
		Number of Response(s)	**Response Ratio**			
	Forestry Professional					
	Private Citizen					
	Forest Landowner					
	Other					
	Total					
3. If you are a forestry professional, what is your affiliation? (optional)						
		Number of Response(s)	**Response Ratio**			
	Government					

	Forest Products Industry				
	Tree Care Industry				
	Private Forest Consultant				
	NGO				
	Public				
	Other				
	Total				

4. How important are the following issues for Maryland forests?						
Top number is the count of respondents selecting the option. Bottom % is percent of the total respondents selecting the option.	**Not at all important**	**Slightly important**	**Important**	**Fairly important**	**Very important**	**No opinion**
Keeping land in forest		2				

		2%				
Addressing forest health and invasive species		2				
Suppressing and preventing wildfire						
Creating forest markets and jobs						
Caring for urban and community forests						
Increasing urban and community forests						
Using forests and trees to improve water quality						
Using forests and trees to address climate change						
Improving regulations for forest harvesting						
Other (please list in comments)						

	45 Comment(s)					
	5. Which of the following issues needs the most additional attention over the next decade?					
		Number of Response(s)	**Response Ratio**			
Keeping land in forest						
Addressing forest health, invasive species, and wildfire risk						
Creating forest markets and jobs						
Caring for urban and community forests						
Increasing urban and community forests						
Using forests and trees to improve water quality						
Using forests and trees to address climate change						

Improving regulations for forest harvesting					
Other					
Total					
18 Comment(s)					

6. How important are the following threats to Maryland forestry?

Top number is the count of respondents selecting the option. Bottom % is percent of the total respondents selecting the option.	**Not at all important**	**Slightly important**	**Important**	**Fairly important**	**Very important**	**No opinion**
Declining Markets						
Funding						
Lack of Technical Assistance						

Urbanization						
Forest Health and Invasive Species						
Climate Change						
Increased Regulation						
Other (please list in comments)						
22 Comment(s)						

7. Which of the following resources would allow you to best improve the efficiency of your job/personal life as it relates to forestry in Maryland?

		Number of Response(s)	Response Ratio			
Funding						
Technical Assistance						
Education						

Staffing					
Other					
Total					
13 Comment(s)					

8. If you selected education as a resource that you would benefit from, please select which of the following would be most useful.

		Number of Response(s)	Response Ratio		
Webpages					
Webinars					
Written materials					
In-Person Workshops					

Other					
Total					

9. Please rate how you feel Maryland DNR Forest Service has met the following goals outlined in the 2015 Forest Action Plan?

Top number is the count of respondents selecting the option. Bottom % is percent of the total respondents selecting the option.	Poor	Fair	Average	Good	Excellent	Unsure
Restore and Sustain Forest Landscapes						
Ensure Healthy and Resilient Forests						
Ensure Clean and Abundant Water						
Create Jobs and Sustainable Communities						
Make Landscapes						

Resilient to Climate Change						
10. Would you be interested in attending a listening session that will help shape the direction of Maryland's updated Forest Action Plan?						
		Number of Response(s)	**Response Ratio**			
Yes						
No						
Unsure						
No Responses						
Total						
11. If you answered "no" or "unsure" to question 10, asking if you would be interested in attending a listening session for updating the Forest Action Plan, please elaborate on factors that are giving you pause.						
30 Response(s)						

12. If you are interested in attending a Forest Action Plan listening session, which of the following would you want more information about? (Check all that apply)						
		Number of Response(s)	Response Ratio			
New forest mapping and assessment						
Trends in forest cover						
Trends in wildfire						
New forest health issues						
Urban and community forestry programs						
Trends in forest products markets						
Potential for energy forest products and markets						
Tree planting programs						

Ideas from other states' Forest Action Plan					
Other					
Total					

Appendix F: Maryland Forest Legacy Program

Assessment of Need

Maryland Forest Service
Annapolis, MD

The Mission of the Maryland Department of Natural Resources

The mission of the Maryland Department of Natural Resources (DNR) is to lead Maryland in securing a sustainable future for our environment, society, and economy by preserving, protecting, restoring, and enhancing the State's natural resources. DNR is the state agency responsible for providing natural and living resources-related services to citizens and visitors. DNR manages more than 467,000 acres of public lands and 17,000 miles of waterways, along with Maryland's forests, fisheries, and wildlife for maximum environmental, economic and quality of life benefits. A national leader in land conservation, DNR-managed parks and natural, historic, and cultural resources attract 14.5 million visitors annually. DNR is the lead agency in Maryland's effort to restore the Chesapeake Bay, the state's number one environmental priority.

Learn more at www.dnr.maryland.gov.

The Mission of the Maryland Department of Natural Resources Forest Service

The Forest Service mission is to restore, manage, and protect Maryland's trees, forests and forested ecosystems to sustain our natural resources and connect people to the land.

Maryland Department of Natural Resources

Tawes State Office Building

580 Taylor Avenue

Annapolis, MD 21401

MD DNR Forest Service

Phone 410-260-8531,

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Larry Hogan, Governor

Boyd K. Rutherford, Lt. Governor

Jeannie Haddaway-Riccio, Secretary

Philip R. Hager, Assistant Secretary

Kenneth Jolly, Acting Director/State Forester

December, 2020

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Preface: Executive Summary

The Forest Legacy Program (FLP) is a federal program that works in partnership with states, supporting efforts to protect environmentally sensitive forest from conversion to non-forest uses. The FLP is a willing seller - willing buyer program. The FLP can provide funds to purchase conservation easements, or forest lands at fair market value from interested landowners.

In 1996, the U.S. Forest Service accepted the state of Maryland's first Assessment of Need (AON) for the FLP. Under the program, Maryland has protected nine tracts with conservation easements totaling 2,014 acres. Maryland wishes to continue its participation in the FLP to protect Maryland's forests, forested ecosystems and the environmental, economic and societal benefits they provide for their use and enjoyment by future generations. Protecting Maryland forests will help the Chesapeake Bay on its way to recovery.

This document is an update to Maryland's most recent Assessment of Need (AON), reflecting changes in the state since its preparation in 2013. An AON is a state's application for inclusion in FLP. New threats have arisen outside of Maryland's original Forest Legacy Areas (FLAs). New, vigorous partnerships in different parts of the state have been formed. And new mapping tools have enabled staff to better target ecologically and economically important areas. This updated AON takes these elements into account, reflecting changing development patterns and expanding the earlier FLAs to coordinate with new partners on newly identified sensitive areas. The AON update reflects increased interest in the FLP and offers new opportunities for participation. This AON also incorporates new components into the Eligibility Criteria, the selective criteria used to develop the FLAs. Green Infrastructure, Biological Conservation Network, Forests to Faucets, and adjacency to scenic and protected areas, and overlap with other programs' focal areas were incorporated into the FLA identification.

By expanding the FLAs to keep more forest in forest, Maryland is better poised to continue on its path of improving the health of the Chesapeake Bay, the nation's largest estuary. Incorporating the new components into the Eligibility Criteria better focuses the targeting of FLAs.

Maryland's landscapes and forest types are rich and diverse. With conversion pressures exerted by dense population centers like Washington, D.C., the need for the expansion and continued participation in the Forest Legacy Program is clear.

Acknowledgements

Maryland Forest Stewardship Coordinating Committee (MFSCC) Members

The following agencies, groups and organizations represent the MFSCC to provide direction and coordination for the Forest Stewardship Program.

Organization	Member
Maryland Department of Natural Resources	
Wildlife & Heritage Service	Jonathan McKnight
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Forest Service- Associate Director	Anne Hairston-Strang
Forest Service- Resource Planning	Jack Perdue
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Introduction

Large, intact forests provide important environmental, economic, and social benefits such as fish and wildlife habitat protection, watershed protection, timber products, scenic value, and recreation.

The Forest Legacy Program (FLP) is a voluntary program that protects privately owned forests from development or conversion to other non-forest uses. Approved by Congress in 1990 and administered by the United States Department of Agriculture- Forest Service (USFS), the FLP can provide funds for fee simple purchase or the purchase of conservation easements on forest lands at fair market value from interested landowners. Development is restricted on most FLP properties and owners must have approved forest stewardship plans.

Assessments of Need are the first step for states to enroll in the FLP. States closely examine their forests in order to evaluate current forest uses and threats of conversion to non-forest uses, define criteria for forests to be sufficiently important to be designated as Forest Legacy Areas (FLAs) and outline project evaluation and prioritization procedures. The Eligibility Criteria are then used to identify threatened and environmentally important forests, creating FLAs.

In 1996, the U.S. Forest Service accepted the State of Maryland's first Assessment of Need (AON) for the Forest Legacy Program. Under the program, Maryland has protected nine tracts with conservation easements totaling 2,014 acres. An update in 2013 expanded Maryland's FLAs in response to new threats, changing development patterns, and new partnerships.

This document is an update to the 2013 AON, taking advantage of improved data and mapping technology, including 1-meter resolution forest cover and updated protected lands mapping. This updated AON better targets important forests for plant and wildlife conservation, forest connectivity, recreational opportunities, and forest product potential, using a composite of normalized and ranked layers: MD BioNet biodiversity, statewide Green Infrastructure value, forest/soil site index, drinking water supply contribution, proximity to byways, and proximity to public lands. It also incorporates emerging population centers that were previously excluded, and excludes areas recently protected through other programs that are no longer eligible. This AON expands previous FLAs by a net area of 3%, adding significant acreage and new opportunities in high-value conservation areas and unprotected forest blocks, particularly in Southern Maryland where most new acres were identified. The current eligible area is 2,337,413 acres. This AON does not propose entirely new locations for FLAs. The AON update also accounts for increased interest in the FLP .

Maryland's forests are valuable for a wide range of benefits including clean air and water, timber products, tourism, recreation, and fish and wildlife habitat. For example, riparian forest buffers are a key management strategy in Maryland's Watershed Implementation Plan to improve the health of the Chesapeake Bay and its tributaries. Investments in forest protection build on millions of dollars in federal, state, local, and private investments in watershed improvements for the bay. If not properly accounted for, our growing population could

threaten Maryland's forests with conversion to housing developments, roads, and other infrastructure. This pressure leads to fragmentation and parcelization of the remaining forest and inhibits the ability of forests to provide clean air, clean water, productive habitat for wildlife, and sustainable forest product markets. Maryland's Forest Action Plan identifies land development as the number one threat to the state's biodiversity. Also important is the fact that 72% of Maryland's forests are privately owned. The FLP allows Maryland to work with these private landowners to protect remaining intact forest tracts to protect these valuable services.

Maryland Forest Assessment

When European colonists first landed in Maryland almost 400 years ago, they found the land to be 90% forested. Present forest cover in the state is 39% (MD DNR Forest Service, 2015). Maryland has a population of over 6 million (US Census Bureau, 2018). However, it is only the 42nd largest state in the U.S. with 9,700 square miles. There is less than ½ an acre of forest per person in Maryland.

Maryland is home to the Chesapeake Bay; the nation's largest estuary and focal point of many national, state, and local restoration efforts. Maryland has areas representing the five major physiographic regions of mid-eastern America, earning Maryland the nickname "America in Miniature." Maryland has a blend of northern and southern species ranging from the northernmost stands of loblolly pine and bald cypress to the southernmost stands of red spruce.

Figure 1: The Chesapeake Bay Watershed (Tim Culbreth, MD DNR Forest Service)

Watershed Values & Water Quality Protection

Maryland has an abundance of water resources ranging from tiny wetlands to its dominant feature, the Chesapeake Bay. Maryland's rivers and streams can be grouped into three major watersheds: 3% of Maryland's area drains into the Atlantic Ocean, 3% into the Ohio Basin, and 94% into the Chesapeake Bay.

Wetlands: Maryland contains approximately 600,000 acres of tidal and non-tidal wetlands (Clearwater et al., 2000). These wetlands are only a fraction of what existed two centuries ago. Draining and conversion to agricultural use have been the primary reason for the loss. Wetlands are recognized for their important functions such as natural filtering, water storage, flood control and fish and wildlife habitat, and are an on-going target for conservation and protection.

Forested Watersheds

The forested watersheds of streams and wetlands must be managed to maintain and enhance the water quality of these waters as well as the riparian and aquatic resources associated with them. Forests are the least polluting land use. Protecting forests in headwater reaches of streams and rivers and along riparian corridors can help improve water quality. Trees and their roots filter pollutants from the water as it passes over and through soil. Roots also encourage infiltration of water into the soil mitigating flooding during high rainfall events. Riparian corridors also provide important corridors for wildlife movement. Protecting riparian forests will maintain high water quality, protect fish and wildlife habitat, and protect fishing and other recreational activities.

Importance of Forests to Chesapeake Bay Restoration

Maryland's most important environmental pursuit is the restoration of the Chesapeake Bay, which contains over 3,000 miles of tidal shoreline in its coves and estuaries. Water quality in these tributaries may be the most important factor in the bay's health. Creating riparian forest buffers is a key management practice for improving bay health (Forestry Workgroup). They provide:
- Stream system stability
- Sediment filtering
- Nitrogen/phosphorous removal
- Shade and temperature moderation
- Habitat
- Food
- Cover

Forests act as filters to remove sediment and nutrients such as nitrogen and phosphorus. Cooler water is the result of forested stream sides; this helps keep streams hospitable for temperature-sensitive species like brook trout and discourages undesirable algal growth. Leaves and woody debris from forests provide food and cover for species throughout the food

chain, building even more nutrient-reducing capacity within the aquatic community. The Maryland Forest Service has been partnering with other agencies and non-governmental organizations to increase riparian forest cover by seeking out willing landowners to plant trees on their property along streams.

Forests also moderate water volume, or stream flow. The high infiltration capacity of most forest soils and their litter layer allow water to be stored in soils and shallow groundwater. This infiltration reduces flooding during storm events and feeds streamflow longer between rains, supporting more continuous summer flows often critical for aquatic life. Maintaining forests in the upper watersheds can reduce the need for flood control, by reducing runoff to streams. Forests filter pollutants generated by other land uses, providing clean water to reservoirs for public drinking water. Forests can provide protection for recharge areas and well heads. The coastal plains have extensive drainage networks to provide adequate drainage for villages and farmland. Riparian areas and forested wetlands are becoming major considerations with these extensive drainage projects as well.

Fish & Wildlife Habitat

Maryland forests provide basic needs - food, shelter, and protection - for a wide spectrum of wildlife. Some species are totally dependent on the forest, while others use the forest for only a portion of their survival needs.

The diversity and population of wildlife species is directly related to forest type and development stage. The clearing of Maryland's land for agriculture and the quilt work pattern of harvesting timber over many decades in the state has produced forests with a variety of tree size and species. A mixture of species and age classes produces more types of habitat that will support more species of wildlife.

Forests provide important habitat for forest interior dwelling species, or FIDS. These species require large blocks (usually 100 acres or more) of contiguous forest in order to successfully breed (Jones et al., 2000). As development encroaches on Maryland's remaining large blocks of forest, the resulting fragmentation will reduce the breeding success of FID species. Retention of forest, especially large, contiguous blocks, will help slow or stop this decline.

Forests can affect fisheries in many ways. Forests shade and cool the water, moderate stream flows and improve water quality by acting as filters to remove sediment and nutrients. Water quality in fisheries is highly dependent on activities that occur in the watersheds above. For example, brook trout, Maryland's only native trout, are living indicators of good water quality. They are restricted to streams with cool water temperatures and low sediment loads (Maryland DNR Fisheries). These conditions are only found in watersheds with significant amounts of forest cover. Retaining forests along watercourses is one of the simplest yet most effective ways of maintaining water quality in streams and estuaries. Leaves provide food and cover for the invertebrates far down the food chain. Woody debris, branches or entire trees, provide cover for a variety of fish.

Soils

Because of the variety of parent materials and climates, Maryland's soils vary widely across the state. Soils and forests depend on each other. Soils provide four essentials: anchorage, water, mineral nutrients and aeration for roots. Soil is the basis for many of the types of forests found in Maryland. Forests provide stabilization to soils and contribute organic material. Additionally, soils and trees develop a symbiotic relationship where mycorrhizal fungi attach to the roots of trees; the fungi aid the trees in nutrient and water uptake, while the fungi get a home and utilize the carbon produced by the tree.

Site index is the measure of a dominant or co-dominant tree's height at 50 years old. Tree height is closely correlated to site productivity, a characteristic of the location in the landscape and soil traits. Site index in Maryland varies by region, but every area has high and low site indices ranging from the low fifties to over 100 (Feldt, 2019). Areas with high site indices are better suited to timber management and areas with low site indices may be better suited to other management objectives, such as wildlife habitat improvement.

Urban Forests

Urban forests provide a variety of benefits: recreation, aesthetics, wildlife habitat, stormwater management, carbon storage and interception of airborne pollutants. Riparian forests that run through urban areas provide the opportunity for wildlife to move safely through areas that would otherwise be impassable.

Urban forest can significantly increase property values (Maryland Forest Action Plan 2010). Maryland communities value their urban forests and want to conserve them; this is made evident by the fact that 47 communities in the state are registered as Tree Cities by the National Arbor Day Foundation (Arbor Day Foundation, 2018). Currently, there are goals to improve water quality by reducing stormwater runoff in urban areas by protecting and increasing the urban tree canopy.

Forest Products & Timber Management Opportunities

Maryland's forests directly provide socioeconomic benefits related to timber, jobs, and recreation (hunting, fishing, ecotourism), and they are a renewable resource. The long-term profitability of the state's forest products industry is directly linked to a sustainable forest resource base. Identifying areas that could support forest product markets is an effective focus for management activities. Areas where the forest products industry is particularly important to the local or regional economy also deserve attention.

According to U.S. Forest Service (USFS) data, 2.15 million acres of Maryland forest is classified as timberland (Lister, 2018). Timberland is defined as forest land that is capable of producing industrial wood at a rate of at least 20 cubic feet per year. Maryland is an active state in the American Tree Farm System, with 964 privately enrolled properties totaling 110,000 acres of certified sustainable family forest (Maryland DNR Forest Service).

Maryland's $3.5 billion wood products industry is one of the state's largest (BEACON, 2018). Building upon the conserved forest base is important to sustaining the timber industry's benefits to Maryland.

Wood Heat and Energy

The Maryland Forest Service is working with state agencies, local governments, and private partners to expand the state's emerging wood heat and energy market through efforts such as the Forestry Economic Adjustment Strategy funded by the US Department of Commerce Economic Development Administration (EDA) and the State of Maryland for the state's forest product industry. Through the introduction of wood heating and cooling, timber management opportunities will arise. Wood chips to be used as fuel can come from wood waste, wood residues, slash from logging or timber stand improvements. A fuel market can offer opportunities for loggers to handle material they currently overlook. The desired outcomes are a healthy wood products industry and healthier forests, the result of culling non-native trees and diseased or suppressed trees. Abiotic and biotic factors benefit from healthy, productive forests.

Recreation

Maryland forests offer opportunities for hiking, biking, birding, fishing and hunting. Year-round recreation can be enjoyed throughout the state including in Western Maryland where there are ski resorts and cross country ski trails.

While allowing public access on FLP-conserved properties is not required by the terms of Maryland's easements, participating landowners are encouraged to consider allowing public recreation on their land. With nearly 550,000 acres of publicly owned land managed by the Maryland Department of Natural Resources (DNR), the state contains an abundance of outdoor recreational resources (MD iMap and DNR, 2017). Natural areas, trails, historical sites, and recreational and open space sites provide opportunities for both in-state and out-of-state users. Many of these sites are dependent upon forests for their scenic value.

Tourism

Maryland's tourism industry has grown rapidly in recent years, reaching $17.7 billion in visitor spending in the calendar year 2017 (Maryland Office of Tourism, 2018). Tourism also generates an estimated $2.4 billion in state and local taxes and supports more than 224,170 jobs. In 2017, Maryland welcomed more than 42.5 million visitors, up over 100% since the 2013 AON. Maryland's natural resources provide opportunities for hunting, camping, fishing, and boating. The outdoor recreation sector generates $14.4 billion in consumer spending and supports 109,000 jobs, 81% of all tourism-related spending and 49% of all tourism-related jobs. Trees and forests are the backbone of Maryland's outdoor recreation economy, providing outdoor enjoyment and protecting the health of the Chesapeake Bay, a major economic engine, and supporting small businesses and local economies that depend on tourism revenue.

Aesthetic & Scenic Resources

Much of the tourism industry in Maryland is based upon scenery and aesthetics. Western Maryland offers mountains and panoramic vistas; the Piedmont Plateau is home to picturesque rolling hills and farms. The Coastal Plain contains numerous water trails and the Chesapeake Bay. Forests protect rural character and views along Maryland's Scenic Byways and Scenic Trails, and enhance outdoor recreation related to sightseeing and wildlife viewing. On private land, aesthetics are often the most important objective of landowners.
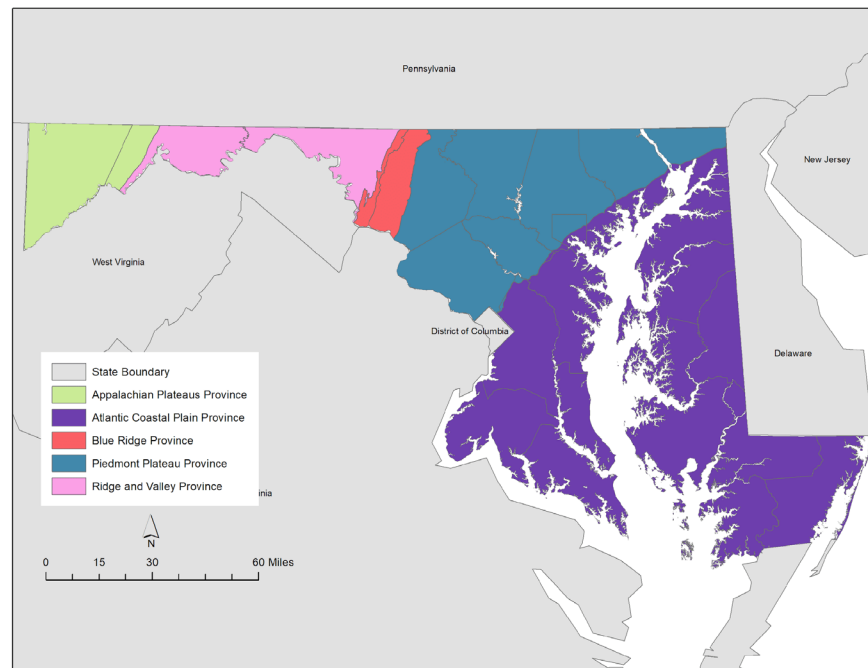

Figure 2: Maryland Physiographic Regions.

Mineral Resources

Maryland has several mineral resources that are important to the state's economy. Bituminous coal is mined in the two westernmost counties, Garrett and Allegany and in 2016, over 2 million tons of coal was mined (Land and Materials Administration, 2016). This total dropped sharply in 2007, and has slowly declined since.

Sand and gravel deposits are found in numerous locations throughout Maryland. These deposits are being commercially worked in 14 of the State's 23 counties; production totaled 7,570,000 metric tons in 2015 (US Geological Survey, 2015). Quarries in 11 counties produced approximately 22,800,000 tons of crushed stone.

Garrett and Allegany counties in Western Maryland have been found to contain natural gas deposits in Marcellus shale formations deep below the surface. Marcellus shale is a layer of rock 4,000 to 8,000 feet underground that is estimated to hold at least a 100-year supply of

natural gas (Brittingham et al.). Removing natural gas from Marcellus shale is done via a process called hydraulic fracturing (fracking). Maryland issued a ban on hydraulic fracturing in 2017 (MD Environmental Code §14–107.1, 2015). Maryland currently has 15 major pipelines, with a majority transporting natural gas (National Pipeline Mapping System, 2019).

Mineral rights must be attached to the land or included in the easement when the FLP is looking at properties for protection. Surface disturbances such as surface mining are not compatible with the goals of the FLP. Minor surface disturbances are allowed for personal use on the property such as sand or gravel for road maintenance.

Present & Future Threats of Conversion

Conversion to non-forest uses and parcelization threaten Maryland's forests. Highest among those threats is conversion for development.

Conversion

Maryland is home to one large city, borders another, and experiences varying levels of development pressure everywhere. Washington, D.C. and Baltimore City are connected by Interstate 95 and development pressure is strong both around and along the corridor between them. Development pressure also increases along other major highways and roads. To the north of Baltimore, Philadelphia exerts pressure on the northern portions of Harford and Cecil Counties. Workers in many cities, especially those who work in the Washington, D.C. area, have opted to live far from their places of employment due to high housing costs nearby. Urban expansion in Maryland has thus stimulated large housing developments in rural areas that fragment and parcelize forests, placing heavy burdens on wildlife and water quality and making management for forest products infeasible. Beyond urban areas, vacation and second homes are threatening forests in areas such as Deep Creek Lake. Development pressure has increased along with housing prices near Deep Creek due to demand for vacation homes and second homes.

From 1980 to 2010 the number of Maryland households increased by 918,000, averaging 30,600 annually (Maryland State Data Center, Census 1980 and Census 2010). During that time, over 200,000 acres of forest were lost (USDA Forest Service, 2019). From an environmental standpoint, a once-large, contiguous forest that becomes divided by new construction causes problems for wildlife that is dependent on large forests.

Forest Fragmentation

One of the most damaging threats to Maryland's forests is forest fragmentation, or the breaking up of large contiguous forests into smaller parts, often separated by roads or other development features. Contiguous forests offer the most natural benefit for wildlife habitat, water quality protection, and other ecosystem services. Fragmentation complicates the management of forests considerably, as production becomes less economically viable at smaller scales.

Parcelization

Forest parcelization arises as the number of forest landowners increases, and the forest parcel size decreases. Forests remain intact but management becomes problematic. It is more difficult to manage for forest health with invasive plant and insect pressure from neighboring lands. Utilization for wood products may no longer be viable as volume decreases. New owners of small woodland tracts may have little interest in timber production, although they often demonstrate increased interest in aesthetics, wildlife and water quality.

Mineral Resources

While coal mining has remained constant or even declined, pressures associated with natural gas exploration may increase. Land clearing for other energy sources would fragment forests.

Historic Uses of Forests, Trends, & Projected Future Uses of Forest Resources

When the European Colonists arrived in the Chesapeake Bay Area, they found the land more than 90 percent forested. Early settlers used the forest for fuel and to build homes. In addition, the forests provided resources such as ship masts, planking, and tanning bark that could be exported and sold. The colonists also cleared forests for their settlements, fields, and pastures. Later, forests were harvested for charcoal, railroad ties, and pilings to accommodate the industrial revolution. Most of the colonial forests were harvested; the forests enjoyed today are the result of regrowth that occurred after the Civil War and the Great Depression.

Maryland is now 39% forested, containing 2.46 million acres of forest (MD DNR Forest Service, 2015). 88% of the state's forest is classified as timberland or commercial forest, with nearly 80 % of that timberland in large diameter classes, as the land in smaller size classes continues to decrease. Oak/hickory is the dominant forest group covering 60% of all forest land in Maryland. Maryland's other hardwoods include red and white oaks, black cherry, hard maple, ash and black walnut, which are high quality hardwoods producing veneer for both domestic use and export. In St. Mary's County and the lower Eastern Shore, one of the most prevalent forest types is loblolly pine-shortleaf pine.

Currently, the primary forest product industry includes 62 sawmills, 145 logging, 168 firewood, 8 whole tree chippers, and 22 land clearing operators. In June 2019, Maryland's only paper mill, located in Luke, closed. The closure is part of an ongoing decline in local forest product markets. The loss of markets affects operators throughout the forestry supply chain, demanding that operators travel further to find buyers, and making management less profitable.

Many forest landowners are holding their land for aesthetic or fish and wildlife objectives. Although many of them will harvest at some time, the vast number of small landowners with varying objectives make long term timber management of Maryland's forest resources difficult on a regional or watershed basis. The higher percentage of older landowners also increases the chances for further fragmentation of their land as estates are settled after their death. Historically, the value of forest has been determined by timber production. From a production standpoint, as fragmentation occurs it becomes harder to harvest timber economically. Harvest

costs rise for the smaller sites, due to the expense of bringing in necessary machinery and the limited volume of timber per parcel. On smaller parcels neighbors are closer together and more aware of timber harvests, presenting an additional obstacle. Even though they may not own the land to be harvested, neighbors may feel that they have certain public rights regarding how the harvest takes place and what is being harvested.

Nevertheless, there is hope for the future. With work being done to start a new wood heat and energy market in Maryland, the Maryland Forest Service expects that the forest products industry will be able to utilize the new market created for heat and energy products, reinvigorating forest management.

Current Ownership Patterns, Size of Tracts, Trends, & Projected Future Ownership Patterns

Two critical factors for maintaining a healthy forest base are fragmentation and parcelization (Hill et al., 1998). Seventy-two percent of the forest in Maryland is privately owned by 157,000 individuals and corporations. 84% of forest landowners own parcels less than 10 acres in size, with a majority of landowners in the 55-64 age class. These numbers indicate that forests are owned in smaller parcels, by more people, and by aging landowners. This parcelization is important to Maryland's timber base. Owners of smaller woodlands often have a different objective for their forest than timber production. Beauty is the primary reason for owning forest for nearly 80% of landowners, while timber production accounts for less than 30% (Butler et al., 2016). Over 70% of current family forests (i.e. at least one acre of forest owned by individuals or groups who are not incorporated into legal entities) are held by owners 55 years or older. Between 2006 and 2011, the number of females listed as primary forest landowners increased from 11 to 22%. This trend is expected to continue, with 83% of second owners listed as female.

Many county zoning regulations require large lots in areas such as conservation or riparian zones. Since the owners of those lots generally hold them for reasons other than timber production (i.e., home sites), they may never be commercially harvested. From an environmental standpoint, this zoning may be beneficial to air and water quality as well as animal and plant habitats. However, as new owners purchase forestland, they may not understand the full economic or environmental values of their forests or the need for long term forest management.

Forest management for both timber production and natural benefits becomes more difficult as fragmentation and parcelization occur. As foresters work with new owners of smaller forest parcels, they may find those owners to be more receptive to meeting environmental goals rather than traditional timber production goals. However, a plan may call for forest management activities such as timber stand improvement. Public education is needed on the benefits of forest management for forest health, wildlife, water quality, and other amenities.

Cultural Resources

Much of the United States' early history took place in Maryland. Historic and cultural sites such as charcoal pits and mine sites have been identified and protected throughout Maryland. The earliest inhabitants of Maryland were hunter-gatherers who roamed the area after the retreat of the glaciers of the Ice Age. As time passed, those nomadic people developed a more settled way of life. Their settlements were generally along rivers, which are abundant in Maryland. These Native Americans were mostly Algonquin tribes (Choptank, Nanticoke, Patuxent and Wicomico) as well as several Susquehannock tribes. The names they gave to portions of Maryland or to rivers and streams remain in use today.

Europeans arrived in 1608 with the journey of Captain John Smith up the Chesapeake Bay into what is now Maryland. The first settlement was established in 1634 on St. Clements Island in the Potomac River one-half mile southeast of what would become known as St. Mary's County. Settlements were developed throughout the Chesapeake Bay area and into the interior of Maryland over the next three centuries.

Significant events occurred on Maryland soils during the French & Indian War, also known as the Seven-Years War, the Revolutionary War, the War of 1812, and the Civil War. Additional historic and cultural sites remain undiscovered and in need of protection in Maryland's forests. Once these forests are converted into developed lands, the historic and cultural resources will be lost along with the forests themselves.

Outstanding Geological Features

Maryland's diverse geography includes features from mountains, caves, cliffs, and gorges of the mountainous western regions, to the dunes and islands of the Coastal Plain. Among the rarest of its features are Maryland's shale and serpentine barrens. Shale barrens are dry, hot, southwest facing areas with thin soils and exposed bedrock. They are found in Maryland's ridge and valley province. At first glance the shale barrens look like wastelands, offering nothing in the way of wildlife. Upon closer examination, the Maryland Department of Natural Resources Wildlife & Heritage Service (MD DNR WHS) found they are full of endemic flora and fauna that are not found elsewhere in Maryland. Three rare shale barren species, for example, are Kate's-mountain clover, yellow nailwort, and low false bindweed (MD DNR WHS).

The serpentine barrens of Central Maryland, like shale barrens, are dry, nutrient-poor, and sparsely vegetated. Many of Maryland's serpentine barrens have been destroyed by mining, but they remain home to at least 34 rare and endangered plants (Prince, et al.).

The wetlands, dunes, and ridges of the Delmarva Peninsula have been shaped by strong winds and erosional processes throughout its glacial history. Inland sand dunes and ridges support two globally rare community types dominated by shortleaf pine and upland hardwoods. Delmarva Bays are shallow wetland depressions which fluctuate seasonally with rainfall, and are home to unique vegetation communities and rare species.

Rare, Threatened & Endangered Species

Maryland includes 184 species on the state's Rare, Threatened & Endangered Species list and is home to 29 animals on the Federal Threatened and Endangered species list (MD DNR WHS, 2016). These species have land management restrictions and specific conservation objectives associated with them.

The Maryland State Wildlife Action Plan (MD DNR WHS, 2015) addresses the need for comprehensive conservation of biological diversity, identifying the key habitats and threats in order to protect a range of species listed by both federal and state governments. The Wildlife & Heritage Service of the Maryland Department of Natural Resources maintains a GIS layer named Sensitive Species Project Review Areas (SSPRAs). SSPRAs are areas supporting important wildlife, or providing the habitat required to support important wildlife.

Wildlife management activities have helped threatened and endangered populations rebound over the years. Animals that were once almost extirpated, such as the white-tailed deer and black bear, are now managed by public hunts. In fact, deer populations have risen to the point where most of the state suffers from crop damage and inhibited forest regeneration. Over the last 30 years a successful trap and transplant program has returned wild turkey to every county of Maryland (MD DNR WHS, 2019).

Other Ecological Values

Natural Benefits of Forests

Maryland's forests and other undeveloped land, such as wetlands, provide the bulk of the state's natural support system: cleaning the air, filtering and cooling water, storing and cycling nutrients, retaining and generating soils, supporting crop pollinators, regulating climate, and protecting areas against storm and flood damage. Forests play a key role in water quality by helping to address non-point source pollution. They increase water quantity by providing recharge areas and retaining water in upper watersheds, and they provide watershed protection for flood control and for the protection of valuable habitats. When forests are lost, these essential benefits are lost.

Green Infrastructure

Forests are becoming more important to state and local conservation and open space planning as emphasis increases on retention and establishment of wildlife corridors and hubs in Maryland. For wildlife, forested corridors provide safe routes for movement. Maryland is highly fragmented; conserving and establishing hubs and corridors to facilitate the movement of plants and animals in urban, suburban and rural areas is of the utmost importance to its people.

Protected Lands in the Maryland

The organizations that actively preserve land in Maryland are the State Government, Federal Government, local governments, and non-governmental organizations. Land preservation

methods include easements, acquisitions, and transfer or purchase of development rights. There are extensive protected lands in Maryland. Not all protected lands are forest, and not all protected areas are mapped. Maryland does its best to conserve lands in important areas as funding and opportunities allow. There are programs in place to ensure that money spent in the State on new land acquisitions will have the greatest impact on the environment.
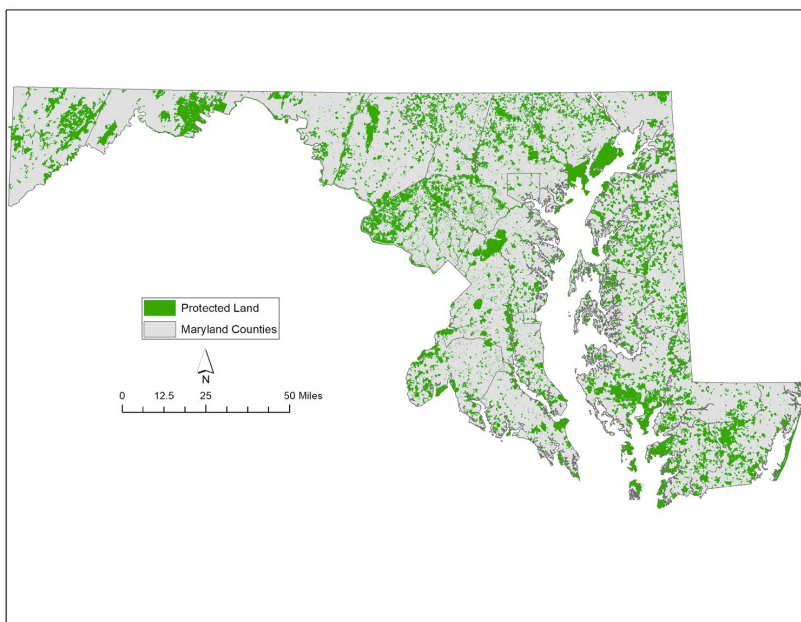

Figure 3: Protected lands in Maryland including private easements, state and county owned lands, and federally managed lands including military installations.

Within DNR, the Maryland Forest Service, Park Service, and Wildlife and Heritage Service manage a majority of protected natural lands, including state parks and forests, wildlife management areas, wildland areas, natural environmental areas, and others. The state forest system includes approximately 220,000 acres, the state park system includes 142,000 acres, and the state wildlife management area system includes 123,000 acres (MD iMap and MD DNR, 2017). Portions of these areas have been developed for recreational activities or are leased for agricultural use. The remainder of the area has been left in its natural state, including forests and wetlands. These areas contain some of the most important habitat in Maryland.

Existing Programs to Conserve Land in Maryland

Maryland's initiatives for conserving and preserving open space, agricultural, cultural, and natural resource lands comprise one of the most successful and comprehensive programs of its kind in the nation.

Maryland focuses most land conservation on the Chesapeake Bay, outdoor recreational facilities, and on maintaining a base for agricultural and forestry industries. These programs aim to maximize public benefits and support a significant portion of the state's economy. Recreation lands, open space, rural and historic landscapes, and the agricultural and forested

lands conserved by these programs are integral to the state's tourism, agricultural, and natural resource-based industries that in turn are important factors in Maryland's economic well-being.

DNR is charged with ensuring that all conservation funding is utilized effectively and efficiently to maximize the impact on natural resources and protect public benefits. Among the department's specific objectives are:

- Focusing state land conservation programs on the most strategic lands to protect the Chesapeake Bay and its tributaries as well as the state's most significant natural and agricultural resources;
- Applying the best scientific information and technology to identify the resource lands that are most important, the potential threats to these lands, and areas in which preservation goals can be maximized;
- Establishing a process for collaboration and coordination among units and local land conservation programs to identify geographic and natural resource areas.

Maryland has a number of laws, regulations and programs designed to conserve forests, with emphasis on collaboration and coordination among various protection initiatives. It is not uncommon for a single land conservation project to utilize the supporting resources of a number of conservation programs. Forest Legacy funding can be used to leverage funding and support from Maryland Conservation/Preservation Programs.

Maryland Conservation/Preservation Programs

Program Open Space

The Maryland General Assembly established Program Open Space (POS) in 1969. The program is funded through the state's real estate transfer tax so that funding for state land acquisition and local parks keeps pace with development. POS transfer tax revenues are divided between POS Local (for local jurisdictions) and POS Stateside (for state land acquisitions). Most of the state's acquisitions through POS have been fee simple interests in natural resource lands but POS can also be used for easements.

Rural Legacy Program

The Maryland General Assembly established the Rural Legacy Program (RLP) in 1997 to protect large, contiguous blocks of rural land and to enhance agricultural, natural, cultural, and forest resources while supporting a sustainable land base for natural resource based industries. The program is a "community-up" process whereby local governments, private land trusts, and interest groups nominate Rural Legacy Areas (RLAs) to be eligible for funding. These areas must meet legislatively designated criteria, which include the significance and extent of agricultural, forestry, natural and cultural resources proposed for protection; the threat to resources from development pressure and landscape changes; the significance of historic and cultural resources proposed for protection; and the economic value of the resource-based industries or services proposed for protection through land conservation, such as agriculture, forestry,

tourism and recreation.

Landowners in RLAs may apply for funding for conservation easements. The Rural Legacy Board works with a governor-appointed advisory committee to review and recommend applications for funding and changes to RLAs. These are sent to the Board of Public Works for final approval.

The Maryland Environmental Trust

Established in 1967 by the Maryland General Assembly as a quasi-independent unit of DNR, the Maryland Environmental Trust (MET) works to preserve forests and farmland through donated conservation easements. In 2012, MET also began accepting easements on urban open spaces that provide significant environmental and public health benefits.

The Maryland Agricultural Land Preservation Foundation (MALPF)

Established by the Maryland General Assembly in 1977 to preserve prime farmland and woodland, MALPF is run through a board of trustees, the Maryland Department of Agriculture, and local advisory boards and administrators in each county. Eligibility for MALPF is based on size and soil characteristics. Landowners apply to the local advisory board, which reviews and approves applications to MALPF. The application process is competitive, with each county choosing its own ranking procedure. MALPF's Board of Trustees reviews and selects applications for funding.

Forest Conservation Act

Enacted in the early 1990's, the Forest Conservation Act (FCA) requires developers to mitigate the loss of forest. Mechanisms to do this include the permanent protection of existing forest and/or the planting of new forest, either on or off-site. Maryland's mitigation programs for development are among the most rigorous in the U.S.

Forest Conservation & Management Agreement

The Forest Conservation and Management Agreement (FCMA) provides for legal agreements between landowners and DNR. Landowners agree to manage their forests according to written forest stewardship plans for a minimum of 15 years. In return, property tax assessments on those forested lands are reduced to one of the lowest agricultural rates and frozen for the duration of the agreement. If the agreement is broken due to non-compliance with the plan, back taxes can be assessed. As of 2019, Maryland has approximately 1,300 agreements on 84,000 acres.

Woodland Assessment Program

The Woodland Assessment Program (WAP) provides preservation incentives similar to those of FCMA but without stipulated time periods or enrollment fees. The reduced assessment rates from WAP are not as low as those of FCMA.

Other technical assistance and cost-share programs

The Maryland Forest Service provides technical assistance and cost-share programs to help forest landowners manage their forests to meet their objectives. Examples include:

- Forest Stewardship Program – State foresters are available to write forest stewardship plans at a reasonable fee for forests.
- Woodland Incentive Program (WIP) – Pre-approved forest management practices can be reimbursed up to 65% of a capped limit.
- Income Tax Modification Program (TaxMod) – Costs of many forest management practices can be doubled and deducted from Maryland income taxes.

Local governments

Maryland county governments are national leaders in land conservation. Together, Maryland counties have protected nearly 185,000 acres of agricultural land and woodlands through the purchase or transfer of development rights, resulting in permanent easements (MD iMap and DNR, 2017). Local governments also work closely in partnership with the Maryland Environmental Trust and DNR and MDA in coordinating and matching state funded land preservation programs with local resources and preservation programs.

Federal Conservation/Preservation Programs

Land & Water Conservation Fund (LWCF)

Revenue from oil and gas leases on the outer continental shelf is used by the US Department of the Interior (US DOI), Bureau of Land Management, US Fish and Wildlife Service, and USFS for land conservation. Maryland has received over $200 million in LWCF funding which has been utilized to benefit Assateague National Seashore, Blackwater National Wildlife Refuge, and South Mountain Battlefield. Municipalities and counties may apply for up to 50 percent matching fund assistance from the Land and Water Conservation Fund through DNR. In March 2020, US DOI announced that Maryland would receive $4,237,066.

Forest Legacy Program (FLP)

The U.S. Department of Agriculture, Forest Service Forest Legacy Program is administered by the US Forest Service, and operates in partnership with states to protect environmentally important forest areas that are threatened by conversion to non-forest uses. FLP provides matching funds for conservation easements or fee simple purchases on private lands in state-designated Forest Legacy Areas. FLP funds are often matched by Rural Legacy Program and Program Open Space funds. Pairing FLP funding and state funding allows the state to stretch funding further to preserve more forest. The Maryland Forest Service has acquired easements on 2,014 acres of productive forests in five counties of the state.

Readiness and Environmental Protection Integration Program (REPI)

The U.S. Department of Defense Readiness and Environmental Protection Integration

Program (REPI) combats encroachment and incompatible land uses that inhibit military training, testing, and operations. Among these efforts is the REPI Challenge, which awards funding for projects that address incompatible land use, as well as installation resilience (flooding, coastal resilience, wildfire threat, etc.). In Maryland, the Naval Air Station Patuxent River has received REPI Challenge funding to important ecological lands in the flight paths of the installation.

Sentinel Landscapes Partnership

The U.S. Departments of Agriculture, Defense, and Interior Sentinel Landscapes Partnership works to align natural lands protection and sustainable management with military installation mission and resiliency. The Middle Chesapeake Sentinel Landscape includes focal areas surrounding the Naval Air Station Patuxent River, and the U.S. Naval Academy in Annapolis, MD.

Army Compatible Use Buffer (ACUB)

The Army Compatible Use Buffer (ACUB) program allows the Department of Defense (DoD) to work with non-federal agencies and private organizations to prevent development that would be incompatible with DoD training, testing, and other operations. The program preserves important habitats while protecting the DoD mission. In Maryland, Aberdeen Proving Grounds, located in Harford County, participates in the ACUB program.

Farm and Ranch Lands Protection Program (FRPP)

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), under the Farm and Ranch Lands Protection Program, makes awards to state and local governments and private land trusts on a competitive basis utilizing Land Evaluation Site Analysis. These awards protect prime agricultural lands with conservation easements jointly funded by the Maryland Agricultural Land Preservation Foundation (MALPF), the counties or other sources.

Conservation Reserve Enhancement Program (CREP)

The U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS) Conservation Reserve Enhancement Program is part of a Memorandum of Agreement (MOA) between the USDA and Maryland. The objective of the MOA is to protect water quality by removing marginal agricultural land from production and replacing it with best management practices for water quality, including riparian buffers, stabilization of highly erodible soils, and restoration of wetlands. There is a two-tier system to accomplish these improvements. First, the landowner enters into a 15-year lease contract to take land out of production and to initiate water quality best management practices. For some of the land, a second step involves permanently protecting that land taken out of production, and the best management practices on it, by selling a permanent conservation easement to land trusts or soil conservation districts.

North American Wetlands Conservation Act (NAWCA)

Several major land conservation projects have been jointly funded in Maryland by the U.S.

Department of the Interior, Fish and Wildlife Service NAWCA grants, which are matched by Rural Legacy, Program Open Space and other funding sources. The grants are used to protect wetlands and other natural habitat for migrating waterfowl as part of international efforts to maintain the North American Flyway along Maryland's Eastern Shore, including Lands End and Chino Farms in Queen Anne's County.

Coastal and Estuarine Land Conservation Program (CELCP)

Established in response to overwhelming coastal development pressures, the National Oceanic and Atmospheric Administration CELCP is intended to assist states and local governments to protect coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values. The program ranks lands by significant ecological value.

Environmental Quality Incentive Program (EQIP)

The U.S. Department of Agriculture, Natural Resources Conservation Service Environmental Quality Incentive Program (EQIP) reimburses up to 50% of a capped amount of forestry practices. EQIP can be supplemented with WIP and TaxMod state funds to keep final costs as low as possible for forest owners.

Eligibility Criteria for Forest Legacy Areas in Maryland

Using GIS assessment tools and Eligibility Criteria, FLAs are geographically defined areas that have been identified as having some of the highest economic and environmentally important values to benefit Maryland's wildlife, wood products industry, and residents.

To be eligible as a FLA, an area's forest must have one or more of the following criteria :

- Be threatened by present or future conversion to non-forest uses or fragmentation into smaller non-contiguous forest tracts
- Support ecologically significant forests (including habitat size and quality, importance for water quality, and biodiversity)
- Support forests with high economic potential
- Support outdoor recreation and natural resources through proximity to scenic resources and public protected lands

Identification of Forest Legacy Areas

Methodology

DNR has identified areas which meet the eligibility criteria through a multistep process using Geographic Information Systems (GIS). Due to the high level of development pressure and parcelization, and land conversion across the state, no areas were excluded based on threat of conversion or fragmentation. The areas meeting eligibility criteria were lumped geographically to create Forest Legacy Areas. Information sources to develop the map of Maryland's Forest Legacy Areas included:

1. Maryland Biodiversity Conservation Network (BioNet)
2. Maryland Green Infrastructure Atlas
3. Site index mapping
4. Forests to Faucets
5. 1 mile buffer around scenic byways and trails
6. Proximity to public lands

Values for each of the above sources were normalized to a scale of 0-100. They were then modelled to develop a composite score. FLAs were drawn to incorporate large blocks in the highest percentiles. Municipalities, targeted development zones, and protected lands were excluded. FLAs were then overlaid with other programs to incorporate previously mapped Forest Legacy Areas and significant land in POS and Rural Legacy focal areas.

Locating Legacy Areas

Step 1: Locate lands that meet the Eligibility Criteria. DNR used the following values from model and mapping tools that demonstrate eligibility criteria: MD Bionet, MD Green Infrastructure Atlas, site index maps, USFS Forests to Faucets, scenic routes, and proximity to public lands. All scores were normalized to a 0-100 value scale.

a) Maryland BioNet (Figure 4) maps high biological diversity or ecologically important areas. Elements include state, federally, and globally rare and listed species, "Species of Greatest Conservation Need" from the State Wildlife Action Plan, watch list plants and indicators of high quality habitats, animal assemblages (forest interior species, colonially nesting waterbirds, etc.), hotspots for rare species and habitats, intact watersheds, and wildlife corridors and concentration areas.
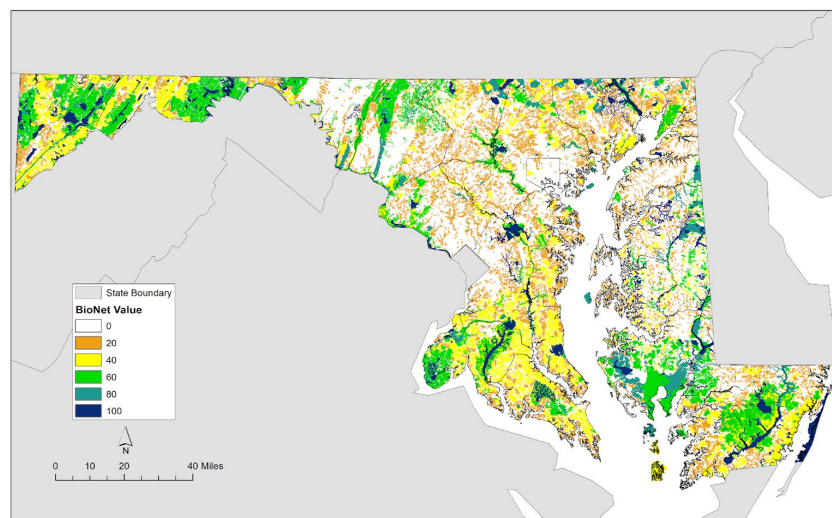

Figure 4: Maryland BioNet normalized to a 0-100 scale.

b) Maryland Green Infrastructure Atlas (Figure 5) maps intact forest and wetland "hubs" and forested stream valleys, ridgelines, or other natural "corridors."

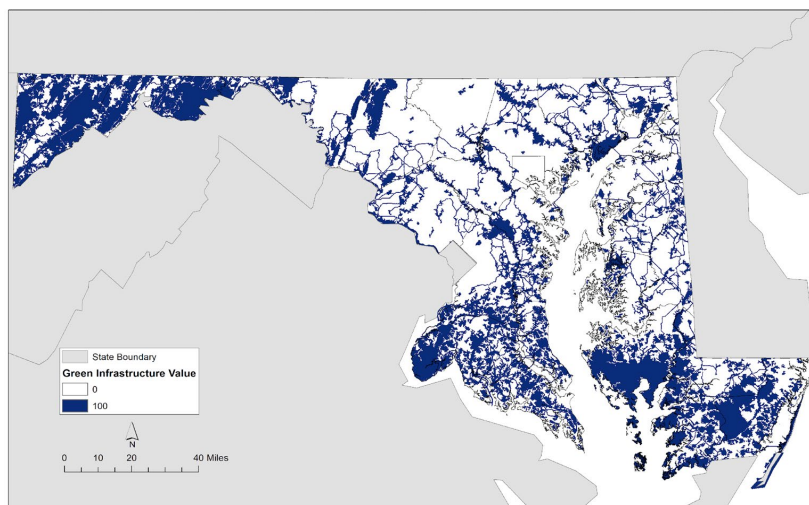
Figure 5: Maryland Green Infrastructure normalized to a 0-100 scale.

c) Site index (Figure 6) uses NRCS soil maps and other models as an indicator of economic production potential.
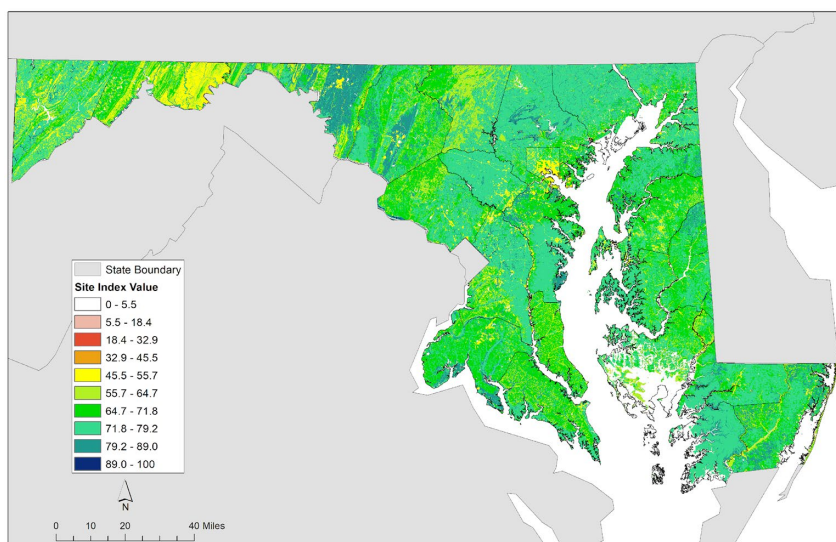

Figure 6: Site index values.

d) Forests to Faucets (Figure 7) models the importance of forests to surface drinking water and areas where development, disease, and fire threaten forests important for surface drinking water.
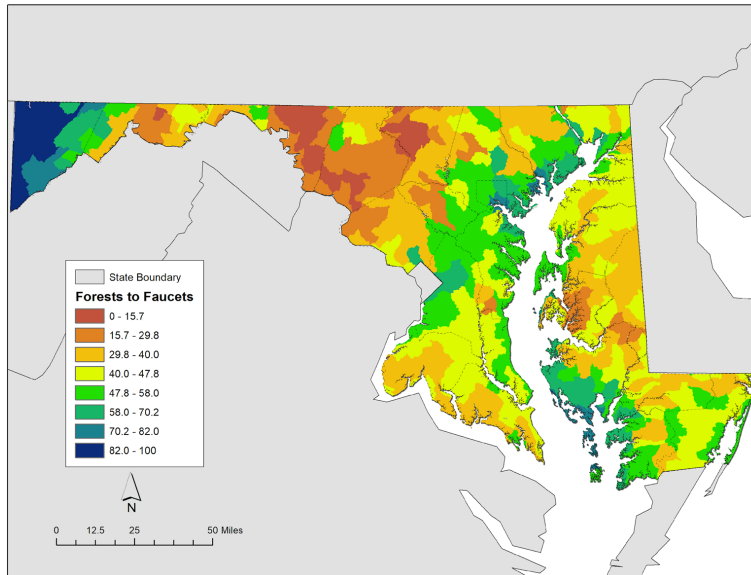

Figure 7: Forests to Faucets importance value of forests to surface drinking water.

e) Scenic routes (Figure 8) include 1 mile buffers along designated state scenic routes as an indicator of scenic viewshed locations.
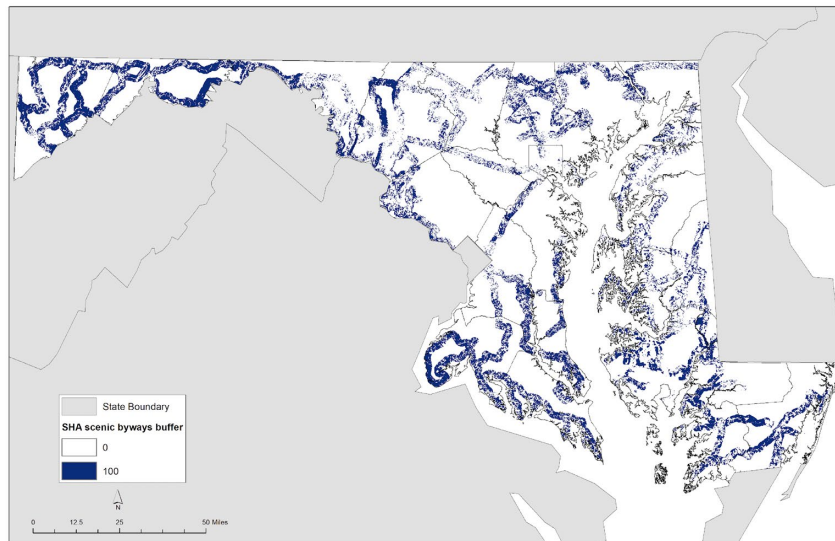

Figure 8: 1 mile buffers along state scenic roadways, normalized to a 0-100

f) Proximity to public lands (Figure 9) uses Euclidean distance to public lands as an indicator of potential recreational, scenic, and connectivity opportunities.
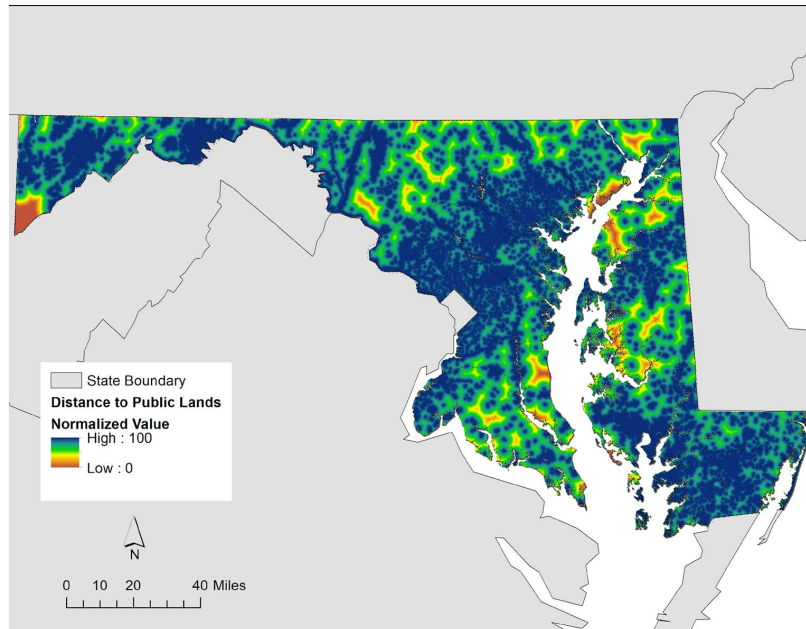

Figure 9: Euclidean distance to public land, normalized to a 0-100 scale.
Values near 100 represent areas that are closest to public lands.

Step 2: Model composite score. The normalized data was used to build a model for a composite score. Several weighting scenarios were used, without significant impact on the output; therefore each factor was given equal weight in the final model. The model was then iterated using a focal statistics tool to smooth the results.
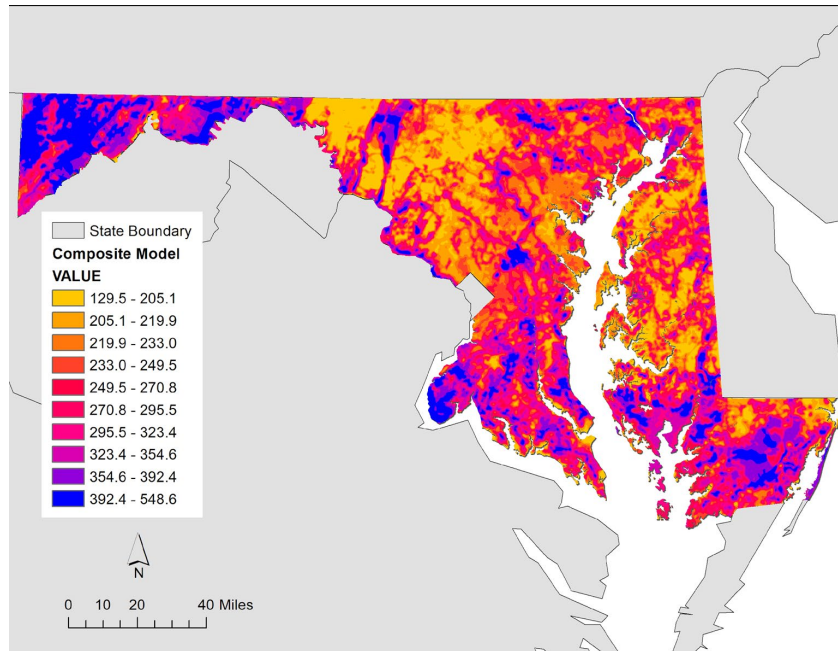
Figure 10: Composite score using evenly weighted variables.

Step 3: Group areas geographically. Large blocks in the top 30th percentile were lumped geographically. Some smoothing occurred to simplify FLA boundaries, which resulted in the inclusion of lower ranking areas, but this inclusion was kept to a minimum. Municipalities, targeted development areas, and protected lands were excluded at this stage.
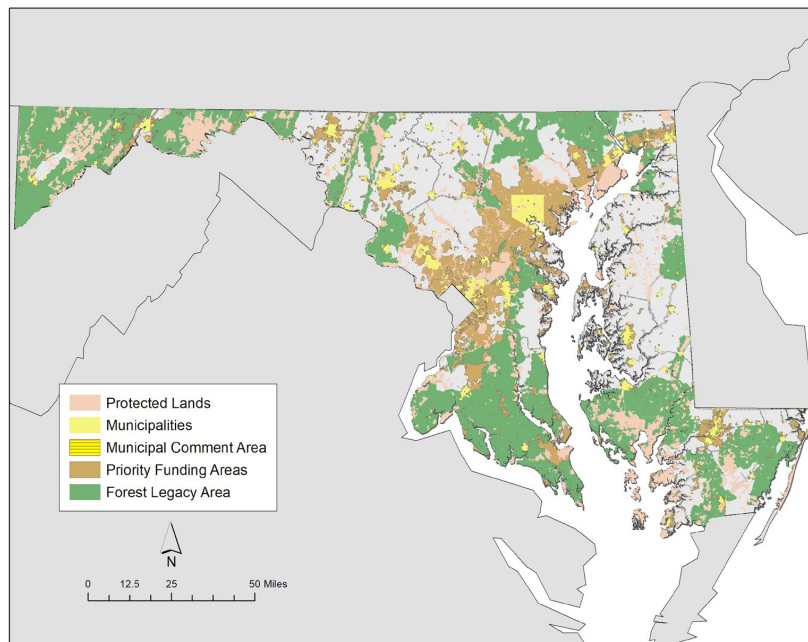

Figure 11: Forest Legacy Areas with the exclusion of protected lands,
municipalities, and priority funding areas (targeted for housing development).

Step 4: Overlay with other target areas. Significant blocks of forest in POS focal areas, Rural Legacy areas, and Targeted Ecological Areas, that were not included in the first iteration, were added. Areas within the Middle Chesapeake Sentinel Landscape were also included.
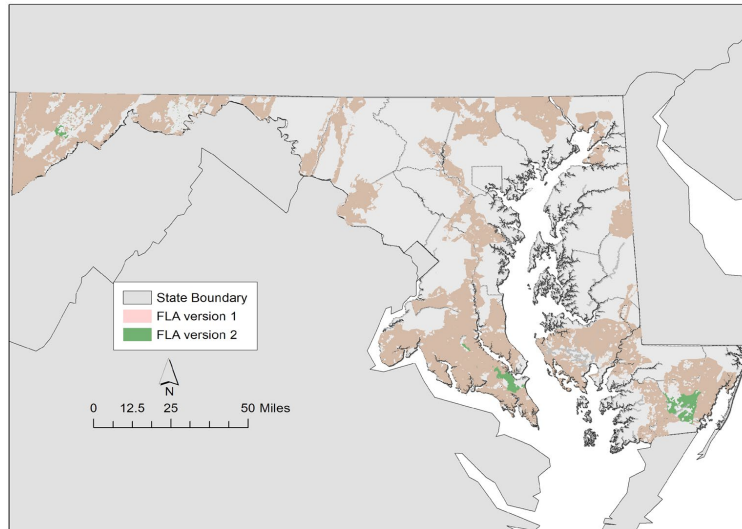
Figure 12: Forest Legacy Area with significant patches of POS focal areas, Rural Legacy Areas, Targeted Ecological Areas, and Sentinel Landscapes included.

Using information from these procedures, areas were added to the 2013 FLAs. The previous statewide acreage in FLAs was 2,271,460 acres. The new acreage is 2,337,413 acres, an increase of 3%. Major decreases in acreage occur where already protected lands were cut out from the FLAs (for example, sections of Cunningham Falls State Park, Green Ridge State Forest, and
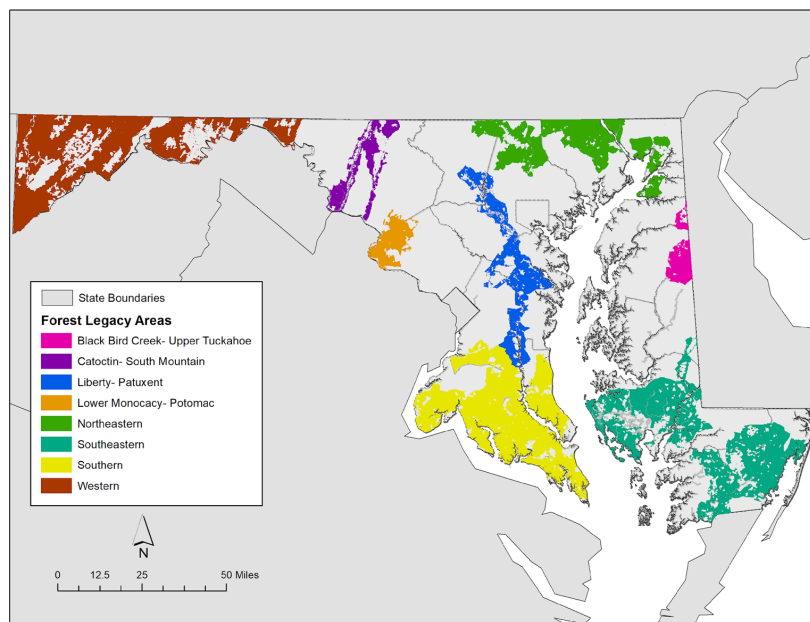
Figure 13: Forest Legacy Areas in the 2019 AON.

Blackwater NWR were included in the 2013 AON). The largest increases occur in the Southern FLA, where several areas in the top 10% of the composite scores were added.

Public Comment

The proposed Forest Legacy Areas were released for public comment for a two-week period. Comments and responses are included in Appendix B.

Forest Legacy Area Descriptions

Blackbird Creek- Upper Tuckahoe
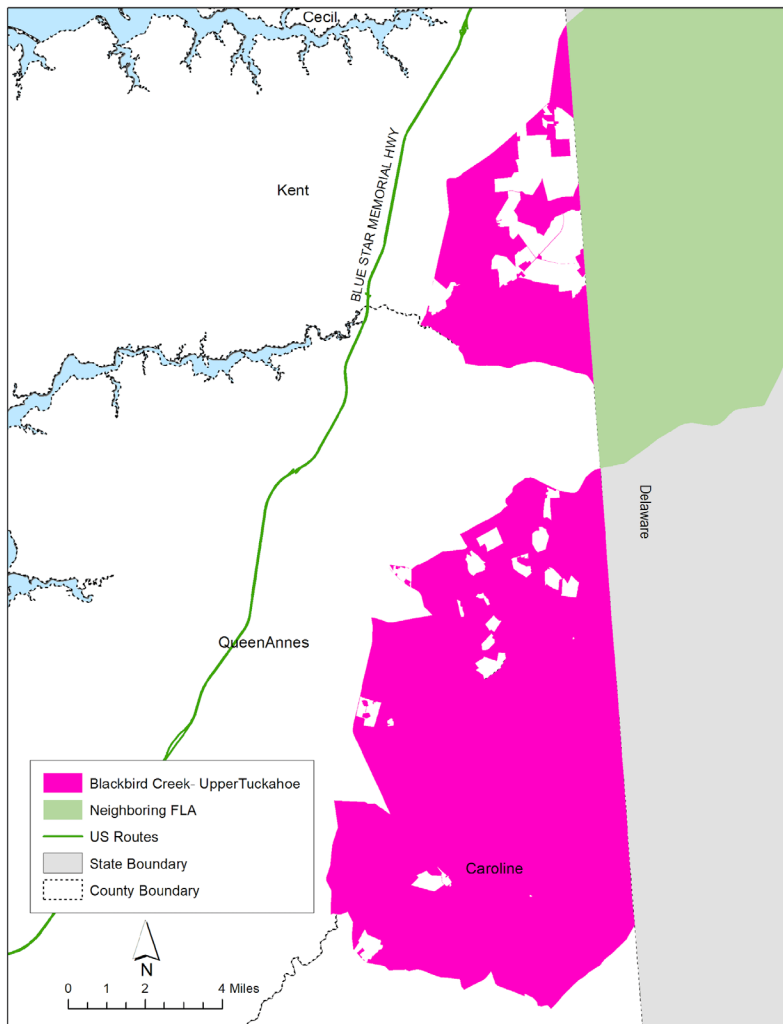
Eligibility Criteria include significant green infrastructure hubs and corridors, high BioNet values, medium to high site index values, and proximity to scenic byways and protected lands.

Metes and Bounds

Northern Block:
Starting at the intersection of the Maryland/Delaware line and Golts Caldwell Road:
Southwest along Golts Caldwell Road to the Conrail Railroad line, 3.38 km.
Southwest along the Conrail Railroad line to the intersection with the Queen Anne's/Kent County line, 11.7 km.
East Southeast along the Queen Anne's/Kent County line to 10 School Road, 2.12 km.
South on 10 School Road to Blanco Road, 787 meters.
East on Blanco Road to the Maryland/Delaware line, 5.7 km.
North along Maryland/Delaware line to Golts Caldwell Road.

And excluding all protected areas.

Southern Block:
Starting at the intersection of the Maryland/Delaware line and Sudlersville Road:
West on Sudlersville Road (State Hwy. 300) to Peter's Corner Road, 3.79 km.
Southwest on Peter's Corner Road to Sawmill Road, 1.51 km.
West on Sawmill Road to Duhamel Corner Road, 2.3 km.
South on Duhamel Corner Road to Race Track Drive, 613 meters
West on Race Track Drive to Elevator Road, 3.5 km.
South on Elevator Road to Dixon Tavern Road, 125 meters
Southeast on Dixon Tavern Road to Barclay Road, 2.81 km.
West on Barclay Road to Goldsboro Road, 2.66 km.
South on Goldsboro Road to Ell Downes Road, 8.63 km.
Northwest on Ell Downes Road to Bridgetown Road, 2.48 km.
South on Bridgetown Road to Ruthsburg Road, 4.89 km.
East on Ruthsburg Road to Bridgetown Road (Caroline County), 279 meters
East on Bridgetown Road (Caroline County) to Cutoff Road, 500 meters
Southeast on Cutoff Road to Oakland Road, 473 meters.
South on Oakland Road to E. Cherry Lane, 1.15 km.
East on E. Cherry Lane to Cedar Lane, 4.89 km.
South on Cedar Lane to Hill Road, 493 meters
East on Hill Road to Union Road, 1.41 km.
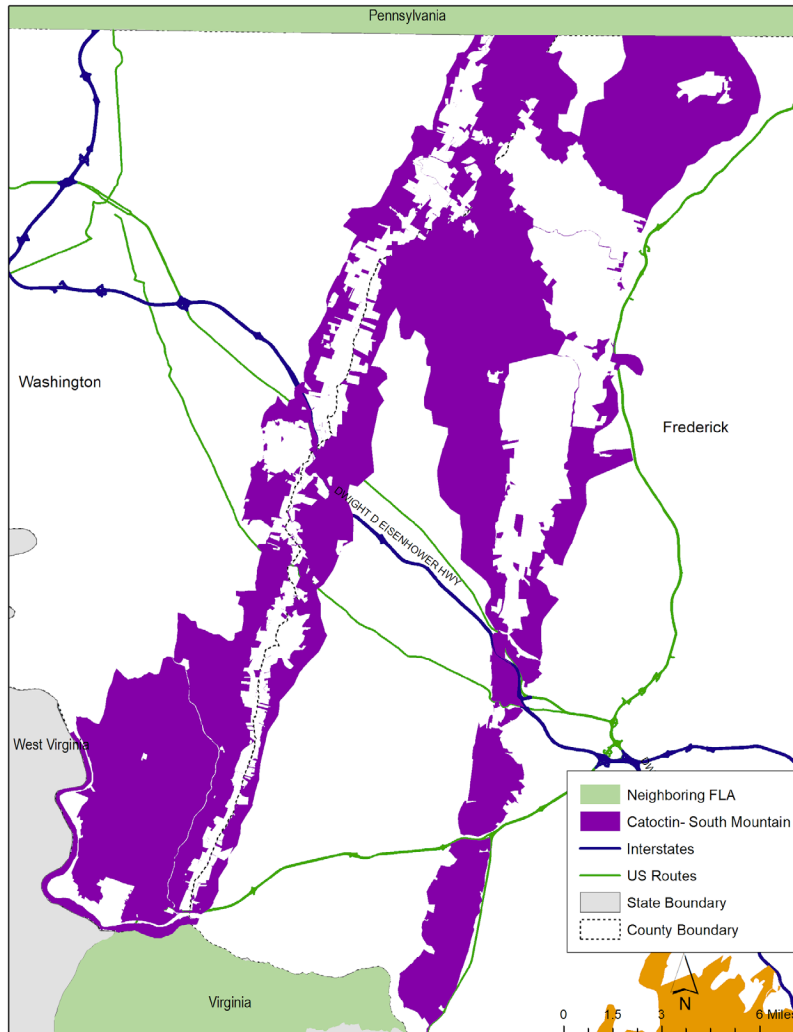Southeast on Union Road to Greensboro Road, 1.88 km.
North on Greensboro Road to Red Bridges Road, 73 meters
East on Red Bridges Road to Drapers Mill Road, 1.45 km.
Northeast along Drapers Mill Road to the Maryland/Delaware line, 5.0 km.

And excluding all protected lands.

Catoctin- South Mountain

Eligibility Criteria include green infrastructure hubs and corridors, high BioNet values, moderate to high site index values, and proximity to state scenic routes and protected lands.

Metes and Bounds

Starting at the intersection of the Potomac River and the Washington/Frederick County line:
North along the Washington/Frederick County line to U.S. 340, 52 meters.
East on U.S. 340 to South Mountain Road, 826 meters.
North on South Mountain Road to East Mountain Road, 1.93 km.
East on East Mountain Road to Horsey Distillery Road (MD 17), 2.1 km.
North on Horsey Distillery Road to Burkittsville Road, 2 km.
North Burkittsville Road to S. Potomac Street, 3.28 km.
North on S. Potomac Street to W. Main Street, 606 meters.
Northwest on W. Main Street to Mountain Church Road, 623 meters.
North on Mountain Church Road to Marker Road, 2.89 km.

North on Marker Road to Bolivar Road, 5.72 km.
Northwest on Bolivar Road to Mount Tabor Road, 2.46 km.
North on Mount Tabor Road to Monument Road, 5 km.
East on Monument Road to Main Street, 1.78 km.
North on Main Street to Canada Hill Road, 775 meters.
North on Canada Hill Road to Easterday Road, 1.14 km.
North on Easterday Road to Pleasant Walk Road, 5.34 km.
North on Pleasant Walk Road to Dog Road, 570 meters.
West on Dog Road to Loy Wolfe Road, 959 meters.
North on Loy Wolfe Road to Black Rock Road, 1.95 km.
East on Black Rock Road to Wolfsville Road (MD 17), 1.8 km.
South on Wolfsville Road (MD 17) to Wildcat Road, 1.58 km.
South on Wildcat Road to Meeting House Road, 1.83 km.
South on Meeting House Road to Wolfsville Road, 2.31 km.
South on Wolfsville Road to Harmony Road, 2.66 km.
South on Harmony Road to Hollow Road, 4.13 km.
South on Hollow Road to Old National Pike (U.S. 40 Alt), 7.6 km.
East on Old National Pike (U.S. 40 Alt) to Maryland Avenue, 2 km.
South on Maryland Avenue to Deer Spring Lane, 500 m.
West on Deer Spring Lane to Holter Road, 2.2 km.
Holter Road to Lander Road, 6.8 km.
South on Lander Road to Potomac River, 6.9 km.
East on Potomac River to U.S. 15, 4.4 km.
North on U.S. 15 to Mt. Zion Road, 13.3 km.
North on Mt. Zion Road to Mt. Phillip Road, 1.7 km.
North on Mt. Phillip Road to Fulmer Road, 1.8 km.
North on Fulmer Road to Old Swimming Pool Road, 1.4 km.
West on Old Swimming Pool Road to South Clifton Road, 500m.
North on South Clifton Road to Old National Pike (U.S. 40 Alt), 1.8 km.
West on Old National Pike (U.S. 40 Alt) to Blentlinger Road, 1.5 km.
North on Blentlinger Road to National Pike (U.S. 40), 400 m.
West on National Pike (U.S. 40) to Bowers Road, 40 m.
North on Bowers Road to Shookstown Road, 1.7 km.
West on Shookstown Road to Edgewood Church Road, 1.5 km.
North on Edgewood Church Road to Rocky Springs Road, 3.48 km.
North on Rocky Springs Road to Indian Springs Road, 1.22 km.
North on Indian Springs Road to Bethel Road, 2.9 km.
North on Bethel Road to Putman Road, 3.2 km.
North on Putman Road to Mountaindale Road, 2.28 km.
East on Mountaindale Road to Powell Road, 1.62 km.
East on Powell Road to Catoctin Mountain Hwy. (U.S. 15), 1.63 km.
North on Catoctin Mountain Hwy. (U.S. 15) to Fish Hatchery Road, 416 meters.
West on Fish Hatchery Road to Putman Road, 1.75 km.
North on Putman Road to Auburn Road (MD 806), 2.64 km.
North on Auburn Road to Catoctin Mountain Hwy. (U.S. 15), 3.08 km.
North on Catoctin Mountain Hwy. (U.S. 15) to Blue Mountain Road, 3.74 km.
Northwest on Blue Mountain Road to Pryor Road, 490 meters.
North on Pryor Road to W. Main Street, 1.73 km.
East on W. Main Street to Catoctin Mountain Hwy. (U.S. 15), 1.05 km.

North on Catoctin Mountain Hwy. (U.S. 15) to Sabillasville Road, 1.32 km.
North on Sabillasville Road to Kelbaugh Road, 1.11 km.
Northeast on Kelbaugh Road to Saint Anthony Road, 6.19 km.
North on Saint Anthony Road to Old Emmitsburg Road, 1.27 km.
North on Old Emmitsburg Road to Annandale Road, 210 meters.
North on Annandale Road to Riffle Road, 2.59 km.
North on Riffle Road to the Maryland/Pennsylvania line, 2.36 km.
West along the Maryland/Pennsylvania line to Sunshine Trail, 5.25 km.
South on Sunshine Trail to Eylers Valley Road, 1.48 km.
South on Eylers Valley Road to Browns Quarry Road, 1.43 km.
West on Browns Quarry Road to Sabillasville Road, 3.86 km.
South on Sabillasville Road to Foxville-Deerfield Road, 1.69 km.
West on Foxville-Deerfield Road to the Western Maryland Railroad line, 17 meters.
North on the Western Maryland Railroad line to 2nd Avenue (Sabillasville Road)(MD 550), 4.44 km.
North on 2nd Avenue (Sabillasville Road)(MD 550) to Military Road (MD 550), 1.47 km.
West on Military Road to Hilltop Road, 293 meters.
North on Hilltop Road to the Maryland/Pennsylvania line, 125 meters.
West along the Maryland/Pennsylvania line to Edgemont Road, 3.75 km.
South on Edgemont Road to Greensburg Road, 6.96 km.
South on Greensburg Road to Fruit Tree Drive (MD 92), 1.05 km.
South on Fruit Tree Drive (MD 92) to Smithsburg Pike (MD 64), 1 km.
South on Smithsburg Pike (MD 64) to Jefferson Blvd. (MD 64), 1.27 km.
South on Jefferson Blvd. (MD 64) to Mapleville Road (MD 66), 1.83 km.
South on Mapleville Road (MD 66) to Republican Avenue, 657 meters.
South on Republican Avenue to Crystal Falls Drive, 1.35 km.
South on Crystal Falls Drive to Mount Lena Road, 9.72 km.
Northwest on Mount Lena Road to San Mar Road, 697 meters.
South on San Mar Road to Mountain Laurel Road, 1.17 km.
South on Mountain Laurel Road to Keadle Road, 2.46 km.
Northwest on Keadle Road to Mountain Laurel Road, 126 meters.
South on Mountain Laurel Road to Saint Paul Street, 2.22 km.
South on Saint Paul Street to High Street, 820 meters.
South on High Street to S. Main Street, 298 meters.
South on S. Main Street to Mousetown Road, 475 meters.
East on Mousetown Road to Gilardi Road, 1.75 km.
South on Gilardi Road to Old National Pike (U.S. 40), 1.41 km.
South on Old National Pike (U.S. 40) to Clevelandtown Road, 360 meters.
South on Clevelandtown Road to Reno Monument Road, 2.04 km.
West on Reno Monument Road to Amos Reeder Road, 1 km.
South on Amos Reeder Road to Park Hall Road, 2.25 km.
West on Park Hall Road to Marble Quarry Road, 1.93 km.
West on Marble Quarry Road to Mount Briar Road, 2.13 km.
South on Mount Briar Road to Porterstown Road, 2.2 km.
West on Porterstown Road to Burnside Bridge Road, 374 meters.
South on Burnside Bridge Road to Mills Road, 3.42 km.
South on Mills Road to Harpers Ferry Road, 2.87 km.
West on Harpers Ferry Road to Limekiln Road, 1.22 km.
North on Limekiln Road to Antietam Creek (stream), 76 meters.
West along Antietam Creek (stream) to the Potomac River, 308 meters.

South from the confluence of Antietam Creek and the Potomac River to the intersection of the Potomac River and the Frederick/Washington County line, 18.67 km.

Excluding all protected lands.

Liberty- Patuxent
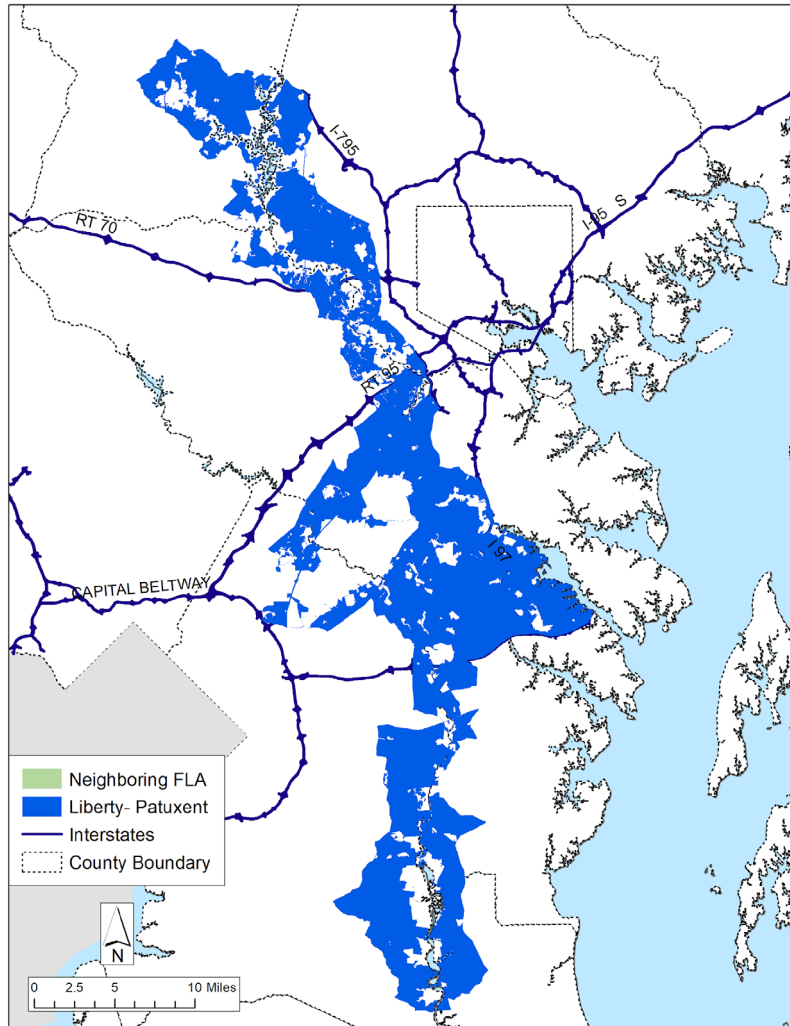
Eligibility Criteria include green infrastructure hubs and corridors, high bionet values, high site index values, importance for surface drinking water, and proximity to scenic byways and public lands.

Metes and Bounds

Starting at the intersection on the Patuxent River and Tyverne Creek (Stream):
East along Tyverne Creek (stream) to Scaggs Road, 2.4 km.
North on Scaggs Road to Lower Marlboro Road, 853 meters
East on Lower Marlboro Road to Briscoe Turn Road, 2.45 km.

Northwest on Briscoe Turn Road to Southern Maryland Blvd. (MD 4), 3.16 km.
North on Southern Maryland Blvd. (MD 4) to Greenock Road, 13.7 km.
Northeast on Greenock Road to Marlboro Road, 4.31 km.
West on Marlboro Road to Ed Prout Road, 2.65 km.
North on Ed Prout Road to Sands Road, 2.92 km.
North on Sands Road to Harwood Road, 6.5 km.
East on Harwood Road to Wayson Road, 2 km.
North on Wayson Road to Queen Anne's Bridge Road, 1.9 km.
North on Queen Anne's Bridge Road to W. Central Avenue, 1.87 km.
West on W. Central Avenue to Patuxent River Road, 2.03 km.
North on Patuxent River Road to Double Gate Road, 2.84 km.
East on Double Gate Road to Davidsonville Road, 2.74 km.
North on Davidsonville Road to John Hanson Hwy. (U.S. 50), 3.12 km.
East on John Hanson Hwy. (U.S. 50) to the Severn River, 14.4 km.
North along the Severn River to Veteran's Hwy, 15 km.
North on Veteran's Hwy. to Crain Hwy. S. (MD 3), 5.64 km.
South on Crain Hwy. S. (MD 3) to New Cut Road, 77 meters.
Southwest on New Cut Road to Stevenson Road, 251 meters.
Northwest on Stevenson Road to Quarterfield Road, 1.72 km.
Southwest on Quarterfield Road to Hubbard Lane, 132 meters.
North on Hubbard Lane to Donaldson Avenue, 477 meters.
West on Donaldson Avenue to Telegraph Road, 2.01 km.
North on Telegraph Road to Aviation Blvd., 2.6 km.
North on Aviation Blvd. to Interstate 195, 3.8 km.
North on Interstate 195 to S. Rolling Road, 7.8 km.
North on S. Rolling Road to Frederick Road, 3.23 km.
West on Frederick Road to Dutton Avenue, 584 meters.
North on Dutton Avenue to Edmondson Avenue, 581 meters.
West on Edmondson Avenue to N. Rolling Road, 287 meters.
North on N. Rolling Road to Liberty Road (MD 26), 9.57 km.
Northwest on Liberty Road (MD 26) to Deer Park Road, 5.94 km.
North on Deer Park Road to Berrymans Lane, 5.38 km.
Northeast on Berrymans Lane to Interstate 795, 3.47 km.
North on Interstate 795 to Baltimore Blvd. (MD 140), 2.75 km.
Northwest on Baltimore Blvd. to Old Westminster Pike, 3.4 km.
West on Old Westminster Pike to Old Gamber Road, 1.64 km.
Southwest on Old Gamber Road to Gamber Road, 472 meters.
Southwest on Gamber Road to Hughes Road, 575 meters.
North on Hughes Road to Old Kays Mill Road, 1.07 km.
West on Old Kays Mill Road to Toggenburg Drive, 904 meters.
South on Toggenburg Drive to Kays Mill Road, 300 meters
West on Kays Mill Road to Old Kays Mill Road, 483 meters.
Southwest on Old Kays Mill Road to Deer Park Road, 1.2 km.
North on Deer Park Road to Sykesville Road (MD 32), 5.23 km.
West on Sykesville Road (MD 32) to Short Lane Road, 1.78 km.
West on Short Lane Road to Old Washington Road, 309 meters
South on Old Washington Road to Salem Bottom Road, 1.89 km.
South on Salem Bottom Road to Bloom Road, 2.5 km.
West on Bloom Road to Muller Road, 1.6 km.

South on Muller Road to Salem Bottom Road, 1.35 km.
Southwest on Salem Bottom Road to Bear Branch Road, 91 meters.
South on Bear Branch Road to Oak Tree Road, 2.17 km.
South on Oak Tree Road to Bear Branch Road, 61 meters.
South east on Bear Branch Road to Old Washington Road, 966 meters.
South on Old Washington Road to Bartholow Road, 238 meters.
Southeast on Bartholow Road to Klee Mill Road, 1.47 km.
South on Klee Mill Road to Bartholow Road, 295 meters.
Southeast on Bartholow Road to Johnsville Road, 5.78 km.
East on Johnsville Road to Sykesville Road (MD 32), 770 meters
Northeast on Sykesville Road (MD 32) to Pine Knob Road, 1.15 km.
East on Pine Knob Road to Mineral Hill Road, 1.56 km.
Southeast on Mineral Hill Road to Oakland Mills Road, 2.96 km.
South on Oakland Mills Road to Liberty Road (MD 26), 1.59 km.
West on Liberty Road (MD 26) to Monroe Avenue, 2.66 km.
South on Monroe Avenue to Ridge Road, 863 meters.
South on Ridge Road to Brangles Road, 1.09 km.
Southwest on Brangles Road to Arrington Road, 2.25 km.
South on Arrington Road to Henryton Road, 1.27 km.
South on Henryton Road to Henryton Center Road, 1.48 km.
South on Henryton Center Road to Henryton Road, 569 meters.
South on Henryton Road to Old Frederick Road, 3.97 km.
East on Old Frederick Road to Old St. Johns Lane, 8.5 km.
South on St. Johns Lane to Frederick Road, 3.5 km.
East on Frederick Road to Maryland Avenue, 2.9 km.
South on Maryland Avenue to St. Paul Street, 85 meters.
West on St. Paul Street to New Cut Road, 178 meters
South on New Cut Road to Baugher Farm Road, 3.34 km.
South Baugher Farm Road to Montgomery Road, 340 meters.
Southeast on Montgomery Road to Interstate 95, 7.23 km.
South on Interstate 95 to MD 100, 2.41 km.
South on MD 100 to Washington Blvd. (U.S. 1), 1.27 km.
Southwest on Washington Blvd. (U.S. 1) to Waterloo Road (MD 175), 3.11 km.
South on Waterloo Road (MD 175) to Dorsey Run Road, 2km.
Southwest on Dorsey Run Road to Old Dorsey Run Road 2.66 km.
Southwest on Old Dorsey Run Road to Guilford Road, 560 meters.
Northwest on Guilford Road (MD 732) to Washington Blvd. (U.S. 1), 1.78 km.
South on Washington Blvd. (U.S. 1) to the Patuxent River (Howard/Prince George's County line), 5.1 km.
South along the Patuxent River (Howard/Prince George's County line) to a CSX rail line, 334 meters.
South on the CSX rail line to Muirkirk Road, 6.12 km.
Southeast on Muirkirk Road to Ellington Drive, 1.52 km.
South on Ellington Drive to Odell Road, 1.15 km.
Southwest on Odell Road to Poultry Road, 976 meters.
South on Poultry Road to Powder Mill Road, 1.14 km.
South on Powder Mill Road to Research Road, 405 meters.
South on Research Road to Ridge Road, 2.36 km.
West on Ridge Road to Crescent Road, 1.48 km.
North on Crescent Road to Kenilworth Avenue, 126 meters.
South on Kenilworth Avenue to Interstate 95, 432 meters.

Southeast on Interstate 95 to Greenbelt Road, 925 meters.
East on Greenbelt Road to the Amtrak rail line, 6.54 km.
Northeast on the Amtrak rail line to Laurel Bowie Road, 5.55 km.
South on Laurel Bowie Road to Rustic Hill Drive, 2.03 km.
East on Rustic Hill Drive to Reston Lane, 817 meters.
South on Reston Lane to Rockledge Drive, 359 meters.
Southwest on Rockledge Drive to Rambling Lane, 513 meters.
East on Rambling Lane to Wheeler Way, 67 meters.
South on Wheeler Way to Winding Lane, 104 meters.
Southeast on Winding Lane to Whitehall Drive, 438 meters.
Southeast on Whitehall Drive to Old Chapel Road, 279 meters.
North on Old Chapel Road to Race Track Road, 1.22 km.
South on Race Track Road to Defense Hwy./Annapolis Road (MD 450), 2.14 km.
East on Defense Hwy./Annapolis Road (MD 450) to Crain Hwy. (MD 3), 1.77 km.
South on Crain Hwy. (MD 3) to Queen Anne Bridge Road, 7.9 km.
East on Queen Anne Bridge Road to Central Avenue, 3.55 km.
West on Central Avenue to Church Road, 6.85 km.
South on Church Road to Oak Grove Road, 3.0 km.
East on Oak Grove Road to Leeland Road, 969 meters.
South on Leeland Road to a Conrail rail line, 250 meters.
South on the Conrail rail line to Crain Hwy. (MD 301), 7.59 km.
South on Crain Hwy. (MD 301) to Croom Station Road, 1.81 km.
South on Croom Station Road to the Conrail rail line, 2.4 km.
South on the Conrail rail line to Old Indian Head Road, 6.0 km.
South on Old Indian Head Road to Van Brady Road, 132 meters
Southeast on Van Brady Road to Molly Berry Road, 4.57 km.
South on Molly Berry Road to Baden Naylor Road, 5.06 km.
South on Baden Naylor Road to Nelson Perrie Road, 426 meters.
South on Nelson Perrie Road to Bald Eagle School Road, 1.96 km.
South on Bald Eagle School Road to Baden Westwood Road, 2.14 km.
East on Baden Westwood Road to Croom Road, 2.37 km.
South on Croom Road to Magruders Ferry Road, 371 meters.
East on Magruders Ferry Road to the entrance of Patuxent River Park, 1.85 km.
South on the access road of Patuxent River Park to the boat ramp on the Patuxent River, 416 meters.

Excluding all protected lands.

Lower Monocacy- Potomac
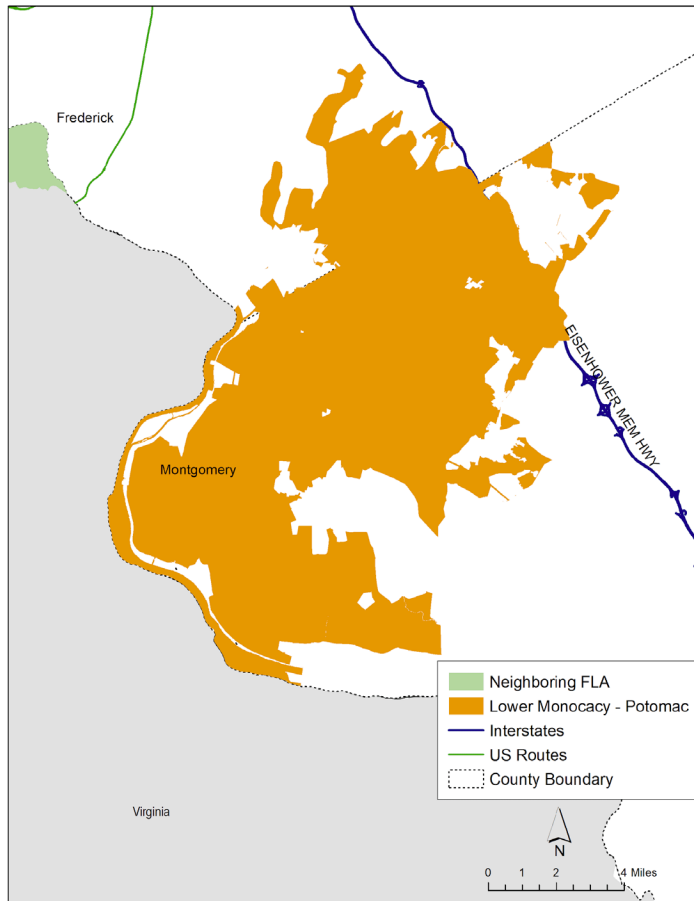
The Eligibility Criteria include green infrastructure hubs and corridors, medium to high site index values, proximity to state scenic byways and public lands, and focal areas for POS, Rural Legacy, and TEAs.

Metes and Bounds

Starting at the confluence of the Monocacy River and the Potomac River:
North along the Monocacy River to Lily Pons Road, 10.5 km.
East on Lily Pons Road to Park Mills Road, 1.64 km.
North on Park Mills Road to Monocacy Bottom Road, 520 meters
North on Monocacy Bottom Road to Flint Hill Road, 4.11 km.
North on Flint Hill Road to Fingerboard Road, 1.1 km.
North on Fingerboard Road to Park Mills Road, 2.47 km.
South on Park Mills Road to Peters Road, 2.86 km.
East on Peters Road to Rhoderick Road, 1.76 km.
North on Rhoderick Road to Fingerboard Road, 3.04 km.
East on Fingerboard Road to Thurston Road, 722 meters.
Southeast on Thurston Road to Doctor Perry Road, 5.18 km.
East on Doctor Perry Road to Interstate 270, 3 km.

South on Interstate 270 to the Frederick/Montgomery County line, 1.82 km.
Northeast along the Frederick/Montgomery County line to Haines Road, 3.94 km.
South on Haines Road to Lewisdale Road, 1.36 km.
East on Lewisdale Road to Prices Distillery Road, 2.09 km.
East on Prices Distillery Road to Burnt Hill Road, 1.34 km.
South on Burnt Hill Road to Snowden Farm Pkwy., 4.62 km.
West Snowden Farm Pkwy. To Clarksburg Road, 200 meters.
South on Clarksburg Road to Gateway Center Drive, 1.6 km.
Southeast on Gateway Center Drive to Shawnee Drive, 1.1 km.
South on Shawnee Drive to Walnutwood Road, 1 km.
South on Walnutwood Road to W. Old Baltimore Road, 500 meters
West on W. Old Baltimore Road to Lake Ridge Drive, 443 meters.
South on Lake Ridge Drive to Black Hills Road, 1.8 km.
West on Black Hills Road to Clarksburg Road, 1.71 km.
South on Clarksburg Road to Barnesville Road, 1.64 km.
South on Barnesville Road to Clopper Road, 52 meters
East on Clopper Road to Schaeffer Road, 3.54 km.
West on Schaeffer Road to White Ground Road, 6.05 km.
South on White Ground Road to Darnestown Road, 2.75 km.
Northwest on Darnestown Road to Cattail Road, 5.25 km.
South on Cattail Road to Cattail Lane, 892 meters.
West on Cattail Lane to Jonesville Road, 616 meters
North on Jonesville Road to Jerusalem Road, 917 meters.
West on Jerusalem Road to Beallsville Road, 1.9 km.
South Beallsville Road to Elgin Road, 370 meters.
South on Elgin Road to Wooton Avenue, 916 meters.
West on Wooton Avenue to W. Willard Road, 86 meters.
South on W. Willard Road to Westerly Avenue, 1.04 km.
East on Westerly Avenue to Fisher Avenue (MD 107), 1.3km.
East on Fisher Avenue (MD 107) to Partnership Road, 2.5 km.
South on Partnership Road to Sugarland Road, 3.3 km.
East on Sugarland Road to Montevideo Road, 1.9 km.
South on Montevideo Road to River Road, 3.5 km.
West on River Road to Sycamore Landing Road, 6.2 km.
South on Sycamore Landing Road to the Potomac River, 1.34 km.
North along the Potomac River to the confluence of the Monocacy River, 24.5 km.

Excluding all protected lands.

Southeastern
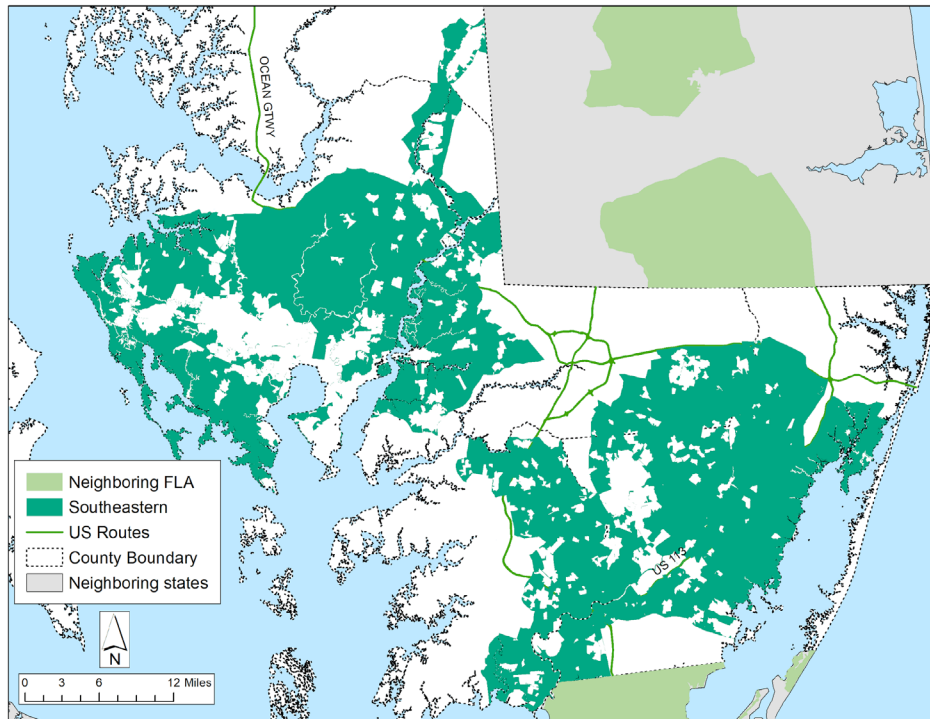
Eligibility Criteria include green infrastructure hubs and corridors, including some of the largest hubs in the state, high bionet values, among the highest site index values in Maryland, medium to high surface drinking water importance, and proximity to state scenic byways and public lands.

Metes and Bounds

Northwestern Block – Dorchester & Caroline Counties

Starting from the intersection of Bloomery Road and the Maryland/Delaware line:
Southwest along Bloomery Road to Todd Road, 3.87 km.
West on Todd Road to Jester Road, 217 meters
West on Jester Road to Chipmans Road, 2.2 km.
Southwest to Chipmans Road to Long Swamp Road, 919 meters
South on Long Swamp Road to Old Denton Road, 4.11 km.
Northwest on Old Denton Road to Federalsburg Hwy., 362 meters.
South on Federalsburg Hwy. to Preston Road, 3.06 km.
West on Preston Road to the Caroline/Dorchester County line, 992 meters
South along the Caroline/Dorchester County line to Williamsburg Road, 1.3 km.
Southwest on Williamsburg Road to Palmers Mill Road, 4.08 km.
Southeast on Palmers Mill Road to Medford Road, 1.46 km.
Southwest on Medford Road to Harrison Ferry Road, 1.89 km.
West on Harrison Ferry Road to Medford Road, 66 meters

Southwest on Medford Road to Harper Road, 600 meters.
Southeast on Harper Road to Palmer Mill Road, 2.14 km.
South on Palmer Mill Road to Rhodesdale Eldorado Road, 4.8 km.
West on Rhodesdale Eldorado Road to E. New Market Rhodesdale Road, 84 meters.
West on E. New Market Rhodesdale Road to Railroad Avenue, 7.5 km.
West on Railroad Avenue to Main Street, 776 meters.
South on Main Street to Cambridge Avenue, 432 meters
Southwest on Cambridge Road to Mount Holly Road, 272 meters.
Southwest on Mount Holly Road Ocean Gateway Road (US 50), 8.24 km.
West on Ocean Gateway Road (US 50) to Church Creek Road, 2.2 km.
Southwest on Church Creek Road to Dailsville Road, 5.1 km.
Northwest on Dailsville Road to Town Point Road, 4.3 km.
West on Town Point Road to Broadview Drive, 5.2 km.
West on Broadview Drive to the Chesapeake Bay shoreline, 1.33 km.
The boundary continues along the shore of Dorchester County to the Nanticoke River and up to Sharptown Road.
From the intersection of the Nanticoke River and Sharptown Road to Eldorado Road, 7.92 km.
North on Eldorado Road to Reliance Avenue, 10.82 km.
Northwest on Reliance Avenue to E. Central Avenue, 1.53 km.
Northeast on E. Central Avenue to Houston Branch Road, 700 meters
Northeast on Houston Branch Road to Turner Road, 5.2 km.
Southeast on Turner Road to the Maryland/Delaware line, 1.4 km.
North along the Maryland/Delaware line to the intersection of Bloomery Road, 4.9 km.

Excluding all protected lands.

The Northeastern Block – Wicomico County

From the intersection of Sharptown Line Road and the Maryland/Delaware line:
West on Sharptown Line Road to Sharptown Road, 1.44 km.
Northwest on Sharptown Road to the Nanticoke River, 401 meters
South along the Nanticoke River shore to Bivalve Wharf Road, 49.2 km.
East on Bivalve Wharf Road to Nanticoke Road, 527 meters
East on Nanticoke Road to Capitola Road, 4.2 km.
Southeast on Capitola Road to Whitehaven Road, 5.52 km.
Northeast on Whitehaven Road to Nanticoke Road, 10.6 km.
East on Nanticoke Road to Levin Dashiell Road, 8.5 km.
North on Levin Dashiell Road to Quantico Creek Road, 6.15 km.
West on Quantico Creek Road to Quantico Road, 2.3 km.
Northeast on Quantico Road to Rewastico Road, 825 meters
Northwest on Rewastico Road to Braggs Lane, 2.13 km.
North on Braggs Lane to Porter Mill Road, 643 meters
Northeast on Porter Mill Road to Deerfield Road, 1.35 km.
West on Deerfield Road to Riggin Road, 2.12 km.
North on Riggin Road to Barren Creek Road, 2.9 km.
Northwest on Barren Creek Road to Delmar Road, 821 meters
East on Delmar Road to Ryan Road, 527 meters
North on Ryan Road to Cross Road, 1.23 km.

Northeast on Cross Road to the Maryland/Delaware line, 4.78 km.
North along the Maryland/Delaware line to Sharptown Line Road, 5.46 km.

Excluding all protected lands.

## The Southeastern Block- Somerset, Wicomico, and Worcester County

From the intersection of Rumbly Point Road and the Pocomoke Sound:
North on Rumbly Point Road to Green Road, 4.7 km.
North on Green Road to Burnettsville Road, 2.0 km.
Northeast on Burnettsville Road to Hudson Corner Road, 2.14 km.
Northeast on Hudson Corner Road to Rehobeth Road, 2.04 km.
East on Rehobeth Road to George Riggins Road, 2.34 km.
North on George Riggins Road to Charles Barnes Road, 1.63 km.
East on Charles Barnes Road to Elmo Dryden Road, 1.26 km.
North on Elmo Dryden Road to Mennonite Church Road, 2.42 km.
Northwest then northeast on Mennonite Church Road to Arden Station Road, 5.72 km.
North on Arden Station Road to Mitchell Road, 3.12 km.
Northeast on Mitchell Road to Dublin Road, 2.77 km.
West on Dublin Road to Old Princess Anne Road, 4.44 km.
North on Old Princess Anne Road to Park Drive, 3.1 km.
East on Park Drive to McCormick Swamp Road 1.15 km.
North on McCormick Swamp Road to Hampden Avenue, 615 meters.
East on Hampden Avenue to W. Post Office Road, 219 meters.
West on W. Post Office Road to Antioch Avenue, 649 meters
West on Antioch Avenue to the Conrail Rail line, 147 meters
North along the Conrail Rail line to Broad Street, 490 meters
West on Broad Street to Somerset Avenue, 300 meters.
North on Somerset Avenue to Mount Vernon Road, 1 km.
West on Mount Vernon Road to E. Ridge Road, 902 meters.
Northwest on E. Ridge Road to W. Ridge Road, 3.76 km.
West on W. Ridge Road to Factory Road, 3.36 km.
West on Factory Road to Mount Vernon Road, 474 meters.
Northwest on Mount Vernon Road to Fitzbound Road, 1.78 km.
North on Fitzbound Road to Polks Road, 1.17 km.
East on Polks Road to Larry Lankford Road, 1.24 km.
North on Larry Lankford Road to Reading Ferry Road, 406 meters.
North on Reading Ferry Road to Wicomico Creek, 2.09 km.
East along Wicomico Creek to Allen Road, 9.7 km.
Southeast on Allen Road to Eden Allen Road, 441 meters
East on Eden Allen Road to Flower Hill Church Road, 3.25 km.
East on Flower Hill Church Road to Backbone Road, 2.8 km.
Northeast on Backbone Road to the Meadow Bridge Road, 2.1 km.
South Meadow Bridge Road to Stevens Road, 9.3 km.
North on Stevens Road to Old Pocomoke Road, 7.48 km.
North on Old Pocomoke Road to Union Church Road, 2.32 km.
Northwest on Union Church Road to Oakland School Road, 162 meters
Northeast on Oakland School Road to Coulbourn Mill Road, 1.1 km.

Northwest on Coulbourn Mill Road to Nutters Cross Road, 510 meters
North on Nutters Cross Road to Snow Hill Road, 1.47 km.
Southeast on Snowhill Road to Airport Road, 1.89 km.
North on Airport Road to Mount Hermon Road, 5.03 km.
East on mount Hermon Road to Berry Road, 3.48 km.
North on Berry Road to Shavox Road, 1.26 km.
East on Shavox Road to Whitman Road, 400 meters
North on Whitman Road to Longridge Road, 1.13 km.
East on Longridge Road to Forest Grove Road, 1.41 km.
North on Forest Grove Road to Ocean Gateway Hwy. (US 50), 1.22 km.
East on Ocean Gateway Hwy. (US 50) to Bent Pine Road, 11.2 km.
North on Bent Pine Road to Old Ocean City Road, 434 meters
East on Old Ocean City Road to Ocean Gateway Hwy. (US 50), 10.6 km.
East on Ocean Gateway Hwy. (U.S. 50) to Conrail rail line, 2.83 km.
South on Conrail rail line to Ironshire Station Road, 6.34 km.
East on Ironshire Station Road to Downs Road, 105 meters
Southwest on Downs Road to Worcester Hwy., 3.48 km.
Northeast on Worcester Hwy. to Bay Street (MD 376), 7.85 km.
East on Bay Street (MD 376) to Sinepuxent Road, 2.1 km.
North on Sinepuxent Road to Antique Road, 5.47 km.
South on Antique Road to Stephen Decatur Hwy., 446 meters
South on Stephen Decatur Hwy. to Snug Harbor Road, 1.55 km.
East on Snug Harbor Road to the shore of Sinepuxent Bay, 1.44 km.
South along the Sinepuxent Bay shore to Packer's Bay Road, 34.6 km.
North on Packer's Bay Road to George Island Landing Road, 429 meters.
West on George Island Landing Road to Stockton Road, 4.5 km.
West on Stockton Road to Market Street, 12.9 km.
Northwest on Market Street to Old Virginia Road, 132 meters.
Southwest on the Old Virginia Road to Pocomoke Belt, 590 meters
West on Pocomoke Belt to Conrail rail line 574 meters.
South on Conrail rail line to the Maryland/Virginia line, 6.22 km.
West along the Maryland/Virginia line to the Pocomoke River, 6.87 km.
West along the Pocomoke River to Rumbly Point Road, 13.1 km.

Excluding protected lands.

Northeastern Forest Legacy Area
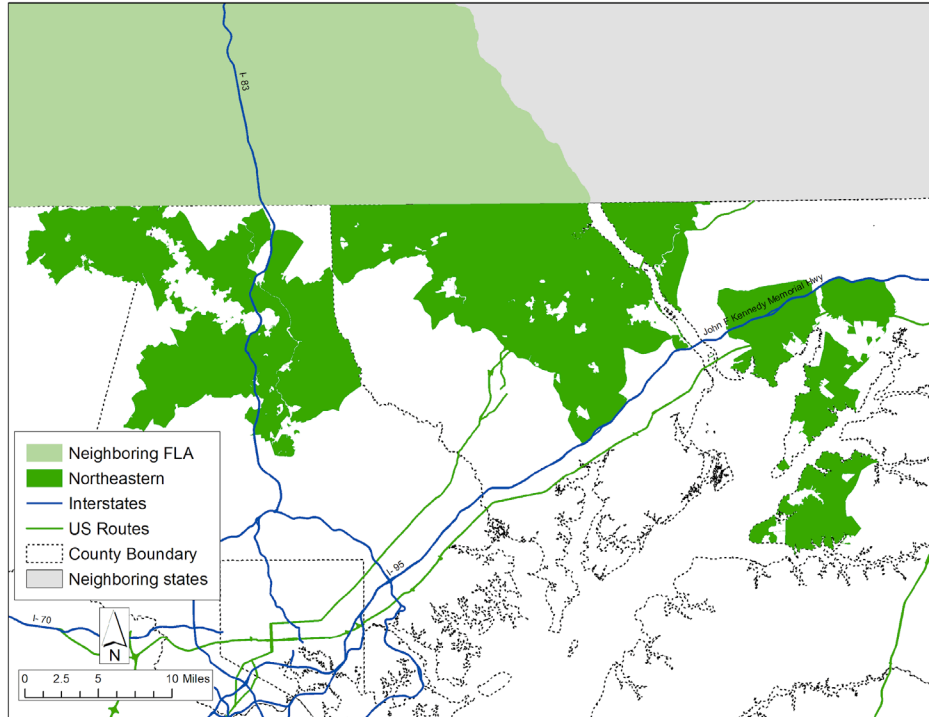
Eligibility Criteria include proximity to scenic byways, green infrastructure hubs and corridors, and among the highest values for BioNet and site index.

Metes and Bounds

The Baltimore/Carroll County Block

From the northwest corner of Baltimore County, at Carroll County line and Shaffer Mill Road:
Northeast on Shaffer Mill Road to Maryland/Pennsylvania line, 750 m.
East along Maryland/Pennsylvania line to Gunpowder Road, 720m.
South on Gunpowder Road to Baker Schoolhouse Road, 1.7 km.
Northeast along Bakers Schoolhouse Road to Middletown Road, 2.37 km.
Southeast on Middletown Road to Freeland Road, 5.4 km.
Northeast on Freeland Road to York Road, 8.3 km.
South on York Road to Bentley Road, 3.7 km.
South on Bentley Road to Cameron Mill Road, 1.5 km.
South on Cameron Mill Road to Walker Road, 2.7 km.
South on Walker Road to Torrey C. Brown Rail Trail, 150 m.
South on Torrey C. Brown Rail Trail to Dairy Road, 1.7 km.
East on Dairy Road to York Road, .5 km.
North on York Road to I-83, 1.1 km.
North on I-83 to Sampson Road, 3.2 km.
North on Sampson Road to Old York Road, 2.4 km.
South on Old York Road to Ensor Road, 4.1 km.

South on Ensor Road to Stablersville Road, 3.7 km.
East on Stablersville Road to Tyson Road, 90 m.
South on Tyson Road to Graystone Road, 1 km.
Northeast on Graystone Road to Vernon Road, 1.4 km.
South on Vernon Road to Second Mine Branch, 1.3 km.
East on Second Mine Branch to Garrett Road, 1.6 km.
Northeast on Garrett Road to Old York Road, 2.2 km.
South on Old York Road to Baltimore/Harford County Line, 1.1 km.
South along the Baltimore/Harford County Line to Jarrettsville Pike, 14 km.
Southwest along Jarrettsville Pike to Paper Mill Road, 3.9 km.
West along Paper Mill Road to Poplar Hill Road, 5.3 km.
South along Poplar Hill Road to Warren Road, 1.76 km.
West along Warren Road to York Road, 4.4 km.
Northwest along York Road to Wight Avenue, 1.75 km.
West along Wight Avenue to Pepper Road, 511 meters.
North along Pepper Road to Schilling Road, 453 meters.
West along Schilling Road to McCormick Road, 331 meters.
North on McCormick Road to Shawan Road, 354 meters.
West along Shawan Road to Western Run Road, 1.15 km.
North on Western Run Road to Western Road, 3 km.
Northeast on Western Road to Thornton Mill Road, 1.2 km.
East on Thornton Mill Road to Quaker Bottom #2 Road, 1.36 km.
North on Quaker Bottom #2 Road to E. Quaker Bottom Road, 1 km.
West on E. Quaker Bottom Road to Priceville Road, 1.8 km.
South on Priceville Road to Thornton Mill Road, .75 km.
North on Thornton Mill Road to Gerber Lane, .75 km.
East on Gerber Lane to Western Run Road, 1.2 km.
West on Western Run Road to Joyce Lane, 2.1 km.
North on Joyce Lane to Belfast Road, .3 km.
East on Belfast Road to Falls Road, .5 km.
North on Falls Road to Butler Road, .2 km.
Southwest on Butler Road to Piney Grove Road, 6.4 km.
Northwest on Piney Grove Road to Longnecker Road, 2.2 km.
South on Longnecker Road to Long Road, 1.7 km.
East on Long Road to Hanover Pike, 3.5 km.
North on Hanover Pike to Old Hanover Road, .35 km.
North on Old Hanover Road to Pleasant Grove Road, 3.6 km.
East on Pleasant Grove Road to Dover Road, 2.3 km.
West on Dover Road to Dark Hollow Road, 1.1 km.
North on Dark Hollow Road to Trenton Road, 2.8 km.
North on Trenton Road to Black Rock Road, 1.8 km.
South on Black Rock Road to Ridge Road, .8 km.
Northeast on Ridge Road to Blackrock Run, 1.1 km.
East on Blackrock Run to Falls Road, 2.2 km.
North on Falls Road to Mt. Carmel Road, 2.3 km.
East on Mt. Carmel Road to Foreston Road, 1.6 km.
North on Foreston Road to Pretty Boy Branch, 1.3 km.
Northeast on Pretty Boy Branch to Traceys Store Road, 2.4 km.
Northwest along Tracey's Store Road to Foreston Road, 2.8 km.

Northwest on Foreston Road to George's Creek Road, 1.7 km.
West along George's Creek Road to Gunpowder Road, 1.33 km.
Southwest on Gunpowder Road to Falls Road, 1.49 km.
Northwest on Falls Road to Beckleysville Road, 3.4 km.
South on Beckleysville Road to Brick Store Road, .6 km.
North on Brick Store Road to Carroll/Baltimore County Line, .8 km.
South on Carroll/Baltimore County Line to Maple Grove Road, .2 km.
West on Maple Grove Road to Hanover Pike, 6.6 km.
North on Hanover Pike to New Street, .7 km.
East on New Street to Log Lane, 50 m.
North on Log Lane to Church Street, .4 km.
North on Church Street to York Street, .3 km.
South on York Street to Westminster Street, .1 km.
West on Westminster Street to Manchester Road, .8 km.
South on Manchester Road to Albert Mill Road, 3.0 km.
Northwest on Albert Mill Road to Fridinger Mill Road, 2.1 km.
Northeast on Fridinger Mill Road to Eckard Road, .6 km.
Northwest on Eckard Road to Bachmans Valley Road, 2.2 km.
South on Bachmans Valley Road to Bixler Church Road, .9 km.
West on Bixler Church Road to Back Woods Road, 1.0 km.
North on Back Woods Road to Deep Run Road, 3.9 km.
East on Deep Run Road to Kridlers Schoolhouse Road, 1.8 km.
North on Kridlers Schoolhouse Road to Garrett Road, 2.0 km.
East on Garrett Road to Pennsylvania State Line, 2.8 km.
East on Pennsylvania State Line to Baltimore Pike, .3 km.
South on Baltimore Pike to Mt. Ventus Road, .9 km.
East on Mt. Ventus Road to Pennsylvania State Line, 1.6 km.
East along Pennsylvania State Line to Church Street North, 3.9 km.
South on Church Street North to Lineboro Road, .7 km.
North on Lineboro Road to Pennsylvania State Line, .9 km.
East along Pennsylvania State Line to Carroll Warehouse Road, 1.5 km.
East on Carroll Warehouse Road to Schalk Road #1, 1.0 km.
North on Schalk Road # 1 to Pennsylvania State Line, .7 km.
East on Pennsylvania State Line to Baltimore/Carroll County Line, 1.9 km.
South on Baltimore/Carroll County Line to Shaffer Mill Road, .4 km.

Excluding all protected lands.

The Harford County Block

From the Northwest corner of the Harford/Baltimore County:
East along the Maryland/Pennsylvania border to the Susquehanna River, 28.1 km.
South along the west bank of the Susquehanna River to Interstate 95, 23 km.
West on Interstate 95 to Lapidum Road, 1.75 km.
North on Lapidum Road to Webster Lapidum Road, 1.5 km.
West on Webster Lapidum Road to Level Road, 2.86 km.
West on Level Road to Hopewell Road, 3.28 km.
South on Hopewell Road to Aldino Stepney Road, 1.4 km.

South on Aldino Stepney Road to Churchville Road, 3.7 km.
East on Churchville Road to Interstate 95, 1.3 km.
South on Interstate 95 to Creswell Road, 7.5 km.
North on Creswell Road to Calvary Road, 2.9 km.
North on Calvary Road to Shucks Road, 1.2 km.
North on Shucks Road to Churchville Road, 4.9 km.
West on Churchville Road to Prospect Mill Road, .4 km.
West on Prospect Mill Road to North Fountain Green Road, 4.2 km.
North on North Fountain Green Road to Conowingo Road, 1.57 km.
West on Conowingo Road to Johnson Mill Road, 479 meters
Northwest on Johnson Mill Road to Chestnut Hill Road, 3.7 km.
West along Chestnut Hill Road to Rocks Road, 1.2 km.
North on Rocks Road to Sharon Road, 767 meters
Northwest on Sharon Road to Rigdon Road, 2.86 km.
West on Rigdon Road to West Jarrettsville Road, 3.06 km.
North on West Jarrettsville Road to Old Federal Hill Road, 781 meters
Northwest on Old Federal Hill Road to N. Bend Road, 3.6 km.
Northeast on N. Bend Road to Saint Clair Bridge Road, 3.85 km.
North on Saint Clair Bridge Road to Federal Hill Road, 1.44 km.
Northeast on Federal Hill Road to Fawn Grove Road, 411 meters
North on Fawn Grove Road to Jerry's Road, 845 meters
West on Jerry's Road to Madonna Road, 3.92 km.
North on Madonna Road to Bradenbaugh Road, 825 meters
West on Bradenbaugh Road to Harford Creamery Road, 3.3 km.
North on Harford Creamery Road to Bradenbaugh Road, 19 meters
West on Bradenbaugh Road to Norrisville Road, 2.96 km.
South on Norrisville Road to Old York Road, 249 meters
Northwest on Old York Road to the Harford/Baltimore County line, 1.87 km.
North along the Harford County line to the border with Pennsylvania, 7.33 km.

Excluding all protected lands.

The Cecil County Block

Starting from the intersection of the Susquehanna River and the Northwest corner of the Maryland/Pennsylvania line.
East along the Cecil County boundary with Pennsylvania to Minns Road, 11.8 km.
South on Minns Road to Ridge Road, 350 meters
West on Ridge Road to Springhill Road, 1.75 km.
South on Springhill Road to Slicers Mill Road, 1.5 km.
South on Springhill Road to Horseshoe Road, 1 km.
South on Horseshoe Road to Conowingo Road, 1.47 km.
West on Conowingo Road to Love Run Road, 1.14 km.
South on Love Run Road to Liberty Grove Road, 2.86 km.
South on Liberty Grove Road to Race Street, 6.39 km.
South on Race Street to Granite Avenue, 362 meters
West on Granite Avenue to Susquehanna River shoreline, 170 meters
North along the Susquehanna River shoreline to the Maryland/Pennsylvania line, 18.3 km.

Garrett Island in the Susquehanna River.

Excluding all protected land.

Perryville Area

From the Intersection of Interstate 95 to North East Road, .9 km.
South on North East Road to Maudlin Avenue, 2.5 km.
South on Maudlin Avenue to North East River, .8 km.
South along western shore of North East River to Davis Lane, 4.4 km.
South on Davis Lane to Bridgewood Avenue, .3 km.
East on Bridgewood Avenue to Maryland Avenue, .1 km.
South on Maryland Avenue to Northeast Avenue, .1 km.
East on Northeast Avenue to Delaware Avenue, .1 km.
South on Delaware Avenue to Clearview Avenue, .1 km.
East on Clearview Avenue to Bladen Street, .2km.
North on Bladen Street to Old Philadelphia Road, .4 km.
South on Old Philadelphia Road to Baltimore Street, 2.1 km.
East on Baltimore Street to North East River, 1.5 km.
South along western shore of North East River to Mill Creek, 14.7 km.
West along Mill Creek to Marion Tapp Parkway, .5 km.
East on Marion Tapp Parkway to Ikea Way, .2 km.
North on Ikea Way to Principio Furnace Road, .6 km.
North on Principio Furnace Road to Jackson Station Road, 3.0 km.
North on Jackson Station Road to Reservoir Road, 1.4 km.
West on Reservoir Road to Perrylawn Drive, 1.6 km.
North on Perrylawn Drive to Craigtown Road, 4.0 km.
North on Craigtown Road to Jacob Tome Memorial Highway, 1.4 km.
North on Jacob Tome Memorial Highway to Camp Meeting Ground Road, .4 km.
South on Camp Meeting Ground Road to Theodore Road, .1 km.
East on Theodore Road to Joseph Biggs Memorial Highway, 9.5 km.
South on Joseph Biggs Memorial Highway to North East Road, .7 km.
South on North East Road to Interstate 95, .8 km.

Excluding all protected lands.

The Central Area:

From the intersection of Turkey Point Road and Irishtown Road:
East Irishtown Road to Elk Neck State Forest Access Road, 2.8 km.
North Elk Neck State Forest Access Road to Private Stone Quarry Road, 1.8 km.
North Private Stone Quarry Road to E. Old Philadelphia Road, 1.4 km.
East on Old Philadelphia Road to Mechanic Valley Road, 1.7 km.
North on Mechanic Valley Road to Amtrak Rail Line, .9 km.
South along Amtrak Rail Line to North East Creek, .5 km.
North along North East Creek to Interstate 95, 3.9 km.
North on Interstate 95 to Blue Ball Road, 8.3 km.

South on Blue Ball Road to Elkton Road, 3.4 km.
South on Elkton Road to Old Philadelphia Road, 1.0 km.
West on Old Philadelphia Road to Old Elk Neck Road, .6 km.
South Old Elk Neck Road to Racine School Road, 9.1 km.
East Racine School Road to Old Field Point Road, 1.9 km
South Old Field Point Road to Veasey Point Road, 1.3 km.
South Veasey Point Road to Old Field Point Cir, 0.7 km.
South Old Field Point Cir to Chesapeake Bay shoreline, .4 km.
South along Chesapeake Bay shoreline to Turkey Point Road, 15.6 km.
North along Chesapeake Bay shoreline to Hances Point Creek, 14.2 km.
West on Hances Point Creek to Turkey Point Road, .8 km.
North on Turkey Point Road to Irishtown Road, 3.8 km.

Excluding all protected lands.

The Southern Area:

Starting where Ferry Point Lane meets the Bohemia River:
West, going counter clockwise following the shoreline to Holly Drive, 81 km.
North on Holly Drive to Hiawatha Circle, 2.14 km.
Northeast on Hiawatha Circle to Backum Lane, 2.0 km.
Northeast on Backum Lane to New Cut Road, .2 km.
Northeast New Cut Road to Sandy Bottom Road, 1 km
North on Sandy Bottom Road to Grove Neck Road, 1.71 km.
West on Grove Neck Road to Peddlers Lane, 529 meters.
North on Peddlers Lane to Crystal Beach Road, 700 meters
North on Crystal Beach Road to Old Crystal Beach Road, 661 meters
Northeast on Old Crystal Beach Road to Glebe Road, 365 meters
Northeast on Glebe Road to Ferry Point Lane, 5.81 km.
Northeast on Ferry Point Lane to the Bohemia River, 188 meters.

Excluding all protected lands.

Southern Forest Legacy Area
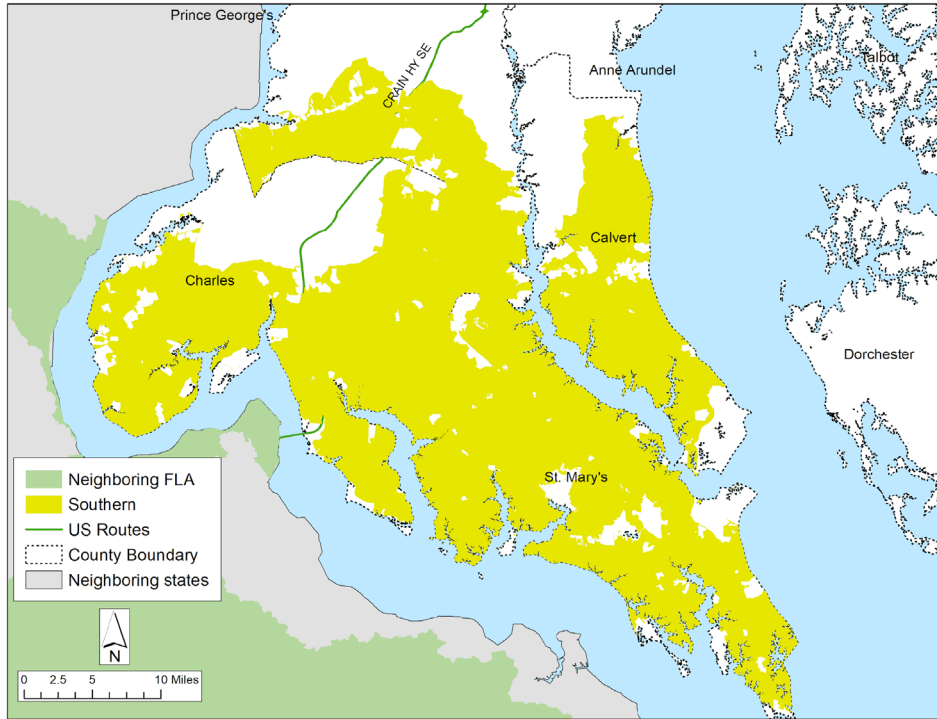
Eligibility Criteria include moderate drinking water importance and proximity to protected lands, proximity to designated scenic routes, major green infrastructure hubs and corridors, and the highest BioNet and site index values across the state.

Metes and Bounds

The Western Block – Charles County/Prince George's County/ St. Mary's County

Starting at the intersection of the Potomac River shore and the Charles/Prince George's County line:
East along the Potomac River shore to the King Charles Terrace, 5.0 km.
North on King Charles Terrace to Reid Lane, 1.0 km.
North on Reid Lane to Digges Lane, .1 km.
North on Digges Lane to Old Fort Road, .6 km.
North on Old Fort Road to Allentown Road, 7.2 km.
North on Allentown Road to Steed Road, 2.0 km.
East on Steed Road to Piscataway Road, 2.8 km.
East on Piscataway Road to Brandywine Road, 2.8 km.
South on Brandywine Road to Surratts Road, 1.0 km.
Southeast on Surratts Road to Frank Tippett Road, 7.13 km
Southeast on Frank Tippett Road to Crain Highway, 491 meters
North on Crain Highway to Old Indian Head Road, 641 meters
East on Old Indian Head Road to Van Brady Road 1.10 km
Southeast on Van Brady Road to Molly Berry Road, 4.25 km
South Molly Berry Road to Baden Naylor Road, 5.06 km

South on Baden Naylor Road to Nelson Perrie Road, 426 meters
Southeast on Nelson Perrie Road to Bald Eagle School Road, 1.96 km.
South on Bald Eagle School Road to Baden Westwood Road, 2.14 km.
East on Baden Westwood Road to Croom Road, 2.37 km.
South on Croom Road to Magruders Ferry Road, 371 meters.
East on Magruders Ferry Road to the entrance of Patuxent River Park, 1.85 km.
South on the access road of Patuxent River Park to the Patuxent River shore, .4 km.
South on the Patuxent River shore to Chesapeake Bay, 36 km.
South along western shore of Chesapeake Bay to mouth of Potomac River, 30 km.
Northwest along Potomac River to Mattawoman Creek, 123 km.
East on Mattawoman Creek to Hawthorn Road, 9.8 km,
Southeast on Hawthorne Road to Crain Highway, 14.1 km.
South on Crain Highway to Glen Albin Road, 2.1 km.
East on Glen Albin Road to CSXT Railroad, .6 km.
North on CSXT Railroad to Charles Street, .9 km.
East on Charles Street to La Plata Road, 1.6 km.
East on La Plata Road to Piney Church Road, 6.7 km.
North on Piney Church Road to Renner Road, 6.5 km.
North on Renner Road to Leonardtown Road, 1.5 km.
North on Leonardtown Road to Mattawoman-Beantown Road, 716 meters.
North on Mattawoman-Beantown Road to Pinefield Road, 4.5 km.
East on Pinefield Road to Pinewood Drive, .9 km.
East on Pinewood Road to Dent Road, 2.1 km.
North on Dent Road to Prince George's/Charles County Line, .1 km.
West along Prince George's/ Charles County Line to Potomac River, 28.9 km.

Excluding all protected lands.

The Eastern Block – Southern Calvert County

Starting at the intersection of Chesapeake Beach Road and the Chesapeake Bay:
West on Chesapeake Beach Road to E. Mt. Harmony Road, 4.7 km.
West on E. Mt. Harmony Road to Mount Harmony Lane, 3.9 km.
South on Mt. Harmony Lane to Skinners Turn Road, 1.0 km.
South on Skinners Turn Road to Southern Maryland Boulevard, 2.9 km.
South on Southern Maryland Boulevard to Solomons Island Road, 3.1 km.
South on Solomons Island Road to Bowie Shop Road, 6.9 km.
West on Bowie Shop Road to Hunting Creek Road, 3.3 km.
South on Hunting Creek Road to Little Lyons Creek, 3.4 km.
South on Little Lyons Creek to Patuxent River, 1.6 km.
South on Patuxent River to Dowell Road, 33 km.
North on Dowell Road to H.G. Trueman Road, 2.9 km.
Northeast on H.G. Trueman Road (MD 765) to Camp Conoy Road, 6.77 km.
Northeast on Camp Conoy Road to the Chesapeake Bay shore, 3.57 km.
North along the Chesapeake Bay shore to Chesapeake Beach Road, 36.9 km.

Excluding all protected lands.

Western Forest Legacy Area
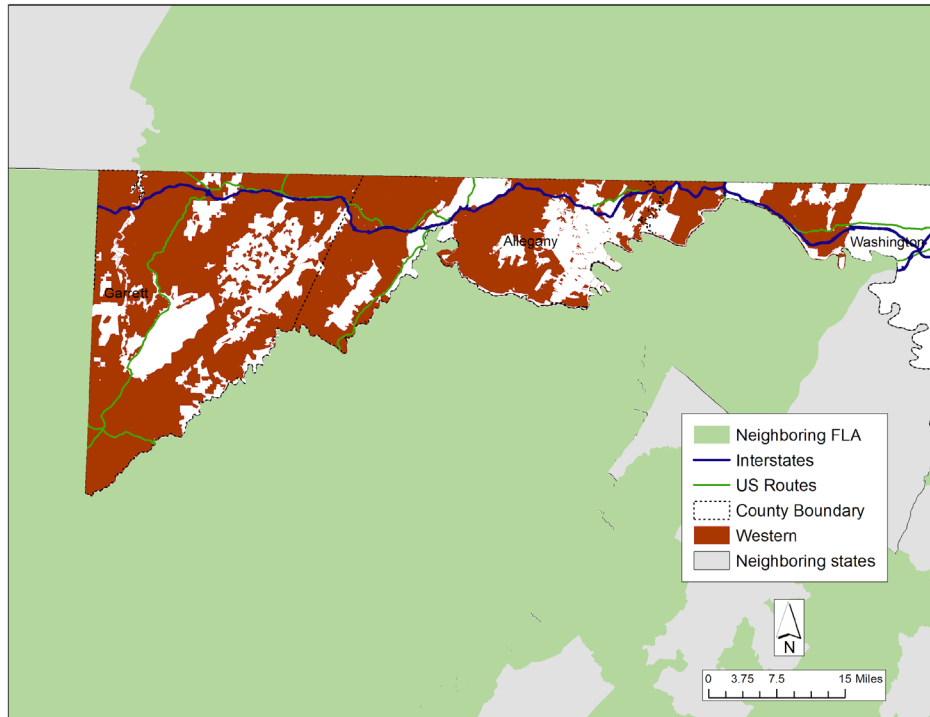
Eligibility Criteria include the highest values for drinking water importance in the state, proximity to protected lands and scenic routes, the largest green infrastructure hubs in the state, and high BioNet and site index values.

Metes and Bounds

The Central Washington County Block

Starting at the intersection of the Maryland/Pennsylvania line and Mercersburg Road:
South on Mercersburg Road to Blairs Valley Road, 6.29 km.
South on Blairs Valley Road to Broadfording Road, 678 meters.
South on Broadfording Road to Mill Street, .9 km.
South on Mill Street to Clear Spring Road, .7 km.
South on Clear Spring Road to Interstate 70, .6 km.
West on Interstate 70 to Big Spring Road, .7 km.
South on Big Spring Road to Big Pool Road, 2.2 km.
West on Big Pool Road to Charles Mill Road, .3 km.
South on Charles Mill Road to the Potomac River, 1.1 km.
West along the Potomac River to Ditch Run (stream), 28.8 km.
North along Ditch Run (stream) to Interstate 70, 40 meters.
East on Interstate 70 to Millstone Road (MD 615), .5 km.
East on Milestone Road to Maple Ridge Road, 1.2 km.
North on Maple Ridge Road to Weller Road, 4.28 km.
North on Weller Road to the intersection with the Maryland/Pennsylvania line, 1.13 km.

East along the Maryland/Pennsylvania line to Mercersburg Road, 16.6 km.

Excluding public lands

The Allegany/Washington County Block

Starting at the intersection of U.S. 522 and the Potomac River:
North on U.S. 522 to Interstate 70, 1.67 km.
North on Interstate 70 to the Maryland/Pennsylvania line, 1.55 km.
West along the Maryland/Pennsylvania line to Pleasant Valley Road NE, 38.52 km.
South on Pleasant Valley Rd NE to Interstate 68, 3.61 km.
West on Interstate 68 to Baltimore Pike NE, 4.26 km.
West on Baltimore Pike NE to Interstate 68, 2.30 km.
Southwest on Interstate 68 to Willow Brook Road, 3.78 km.
South on Willow Brook Road to Williams Road SE, 2.34 km.
West on Williams Road SE to Winfred Road, .8 km.
South on Winfred Road to Oldtown Road, 1.37 km.
South on Oldtown road to E Industrial Boulevard, 1.34 km.
East on E Industrial Boulevard to Cumberland city line, 72 meters.
South along Cumberland City line to Potomac River, .4 km.
East along the Potomac River to U.S. 522, 105.84 km

Excluding public lands.

The Garret/Western Allegany Block

Starting at the intersection Valley Road and the Maryland/Pennsylvania border:
West along the Maryland- Pennsylvania border to the West Virginia Border, 64.87 km.
South along the West Virginia- Maryland Border to the North Branch Potomac River, 57.84 km.
East along the North Branch Potomac River to CSX Railway line, 101.60 km.
Northeast along the CSX Railway Line to Collins Drive, 1.06 km.
North on Collins Drive SW to McMullen Highway, .7 km.
North on McMullen Highway to Louise Drive, 6.87 km.
North on Louise Drive to Haines Drive, .7 km.
North on Haines Drive to Brant Road, .3 km
East on Brant Road to Winchester Road, 1.25 km.
North on Winchester road to Vocke Road, 4.18 km.
East on Vocke Road to Interstate 68, .9 km.
East on Interstate 68 to the Cumberland City line, 1.67 km .
North along the Cumberland city line to Valley Road, 10.60 km.
North on Valley Road to the Maryland/Pennsylvania border, 6.02 km.
Excluding Public Lands and starting at the intersection of Bittinger Road and Glendale Roads:
Southwest on Glendale Road to Deep Creek Lake Shore, 7.02 km.
North along Deep Creek Lake shore to Garrett Highway, 4.60 km.
South on Garrett Highway to Mt Nebo Road, 11.12 km.
South on Mt Nebo Road to Oakland Sang Run Road, 3.24 km.
South on Oakland Sang Run Road to Robinwood drive, 3.65 km.
West on Robinwood Drive to Youghiogheny River, .4 km.

South along the Youghiogheny River to the Little Youghiogheny River, 1.59 km.
East along the Little Youghiogheny River to Oakland Rosedale Road, 1.77 km.
South on Oakland Rosedale Road to Oakland town line, 95 meters.
Southeast along the Oakland town line to CSX Railway line, 2.73 km.
East on the CSX Railway line to the Loch Lynn town line, 2.67 km.
Northeast on the Loch Lynn town line to CSX railway line, 2.90 km.
Northeast on CSX Railway line to Deer Park town line, 3.61 km.
Northeast along the Deer Park town line to Edgewood drive, 3.39 km.
North on Edgewood Drive to Maryland Highway, .4 km.
Northeast on Maryland Highway to Pysell Crosscut Road, 1.32 km.
North on Pysell Crosscut Road to Ardsley Farm Road, 61 meters.
Northeast on Ardsley Farm Road to Turkey Neck Road, .7 km.
North on Turkey Neck Road to Steiding Church Road, 1.02 km.
East on Steiding Church Road to Green Glade Road, 2.30 km.
Northeast on Green Glad Road to Bittinger Road, 3.78 km.
North on Bittinger Road to Glendale Road, 6.60 km.

Excluding all protected land.

The Forest Legacy Program Goals in Maryland

The goal of Maryland's FLP is to protect Maryland forests in the face of land use conversion pressure by working with willing landowners to conserve their lands. The densely populated northeast metropolitan corridor creates intense development and conversion pressure. Conservation efforts must target areas with the greatest positive impact to fish and wildlife habitat, working rural lands, recreation, aesthetics, clean air, and clean water.

The Forest Legacy Program offers the opportunity to purchase conservation easements from willing owners to protect valuable forests in perpetuity. Lands becoming part of the Forest Legacy Program will require the preparation of a Forest Stewardship Plan or multi-resource management plan, ensuring ongoing management amidst changing conditions and threats. The management of these forests will maintain their integrity for future generations of Marylanders.

Evaluating and Ranking Properties for Inclusion in the Forest Legacy Program

Each year, the Maryland Forest Service accepts proposals from interested landowners on a rolling basis. The Maryland Forest Service will solicit proposals with the help of agency partners, non-profits, and media outlets.

The following requirements represent a minimum that must be met on properties in order to progress to the next step in evaluation for the Forest Legacy Program. If the property does not meet minimum requirements, the landowner is referred to another conservation program that better suits its attributes.

- Located within a Forest Legacy Area
- At least 75% forested, with the remaining 25% in a compatible land use
- Supports ecologically and economically significant forest

Once the parcel is determined to meet the minimum requirements, properties are ranked on how well they meet the eligibility criteria. Properties ranking more highly on the criteria will be prioritized. Properties that fall within other program target areas, such as Maryland's Rural Legacy Areas, will receive additional support. Properties that can receive funding from multiple sources or landowners willing to conduct a bargain sale will also be given preference. Some eligibility criteria may have more weight based on the region or location. Maryland's SFSCC project readiness and ranking guidelines are detailed in Appendix A.

Once the Maryland projects are ranked, they are approved for submission by the SFSCC. They are then submitted to the USFS Eastern Region State and Private Forestry office, for national ranking and funding.

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Appendix A: Application

Maryland Forest Legacy Program: Landowner Application

APPLICANT INFORMATION:

    Landowner's Name: _____

    Mailing Address: _____

    Daytime Telephone Number: _____

    Contact Person (if different from above): _____

    Mailing Address: _____

    Daytime Telephone Number: _____

PROPERTY INFORMATION (Contact Local Zoning Official When Necessary)

    Town where property is located: _____

    Assessor's Plat(s) and Lot(s): _____

    Deed Reference (book and page number): _____

    Lat. Long. _____

    Number on Nearest Utility Pole: _____

    Minimum Lot Size: _____

    Minimum Road Frontage (per lot): _____

    Property is currently zoned (Residential, Commercial, Industrial): _____

    Current tax valuation (attach recent appraisal if available): _____

    Total Offered Forested Acres: _____

    Non-Forested Acres: _____

FINANCIAL INFORMATION

    What is/are the estimated sale price(s) of the interests being offered?

    _____

    Would you be willing to accept payment for the interests acquired below the appraised market value? If so, please indicate the percent of the market value you are willing to accept (for example, 75% of the market value).

    _____

    Is there a third party interested in participating in the acquisition, management and/or monitoring of the terms of the conservation easement? If yes, attach a letter from that party describing their level of commitment. The commitment can range from such pre-acquisition work as paying for the title search or appraisal or by providing funds for the acquisition or by agreeing to manage the property for the state or to monitor compliance with the terms of the conservation easement. (Note: the State has final say on third party participation).

    _____

IF NEEDED USE ADDITIONAL SHEETS TO ANSWER THESE QUESTIONS

For a Conservation Easement sale, which of the following are you interested in selling?

Please tick the appropriate lines:

Development Rights: Yes ____ No ____ Maybe____

Public Access for Recreation: Yes ____ No ____ Maybe____

Grazing Rights: Yes ____ No ____ Maybe____

Farming Rights: Yes ____ No ____ Maybe____

QUESTIONS (Attach extra sheets if necessary)

1. Describe your long-term goals and objectives for this parcel:

   _____
   _____

2. Describe the "Traditional" use(s) of this forest:

   _____
   _____

3. One of the goals of the Forest Legacy Program is to prevent forest fragmentation and to maintain viable working forests and natural benefits. What natural benefits and economic indicators will the acquisition of a conservation easement on your property benefit?

   _____
   _____

4. Is it situated along a road either designated locally or by the State Highway Administration as scenic?

   _____
   _____

5. Does it include locally important panoramic views or exceptional short views as demonstrated in local or State resource planning guides?

   _____
   _____

6. What public recreational opportunities will be provided/enhanced by this acquisition? Will you allow some form of public access to the property?

   _____
   _____

7. How will this acquisition protect the public drinking water supply?

   _____
   _____

8. Does your parcel contain any significant fish and wildlife habitat values?

_____
_____

9. Are you aware of any cultural/historic values?

_____
_____

Please answer the following questions fully and carefully. Include as much pertinent personal information as you are comfortable giving, such as financial need, health considerations, family situations, etc.

10. What, in your opinion, is the "Threat of Conversion to Non-Forest Use" of the parcel proposed for enrollment in the Forest Legacy Program? Be specific.

_____
_____
_____

11. If the Forest Stewardship Plan calls for the harvesting of forest resources, would you be willing to do so or allow others to do so on your behalf? Why?

_____
_____
_____

12. Is the land owned by a family trust or multiple landowners? If so, are all landowners interested in the idea of a sale?

_____
_____
_____

A written forest management plan provided by the landowner and approved by the state will be required prior to scheduling the closing. The plan needs to be updated by the landowner at least every fifteen years. **If you are currently following a written forest management plan please provide a copy.**

CONSISTENCY WITH OTHER PLANNING EFFORTS
(IMPORTANT: Contact Local Zoning Official, Local Land Trust, or other Land Use Planning Group)

How is the sale of a deed to conservation to this property consistent with your local land use comprehensive plan, or other local conservation efforts? How will it add to the conservation values of nearby protected lands? Cite references.

_____
_____
_____
_____
_____

LIENS AND ENCUMBRANCES

List any and all liens, mortgages and encumbrances on the property proposed for enrollment in the Forest Legacy Program. Examples: utility easements, public rights of way, water flowage or use restrictions, septic system or water easements, deed restrictions, tax liens, etc.

_____
_____
_____
_____
_____.

ADDITIONAL LANDOWNER COMMENTS

_____
_____
_____
_____
_____.

STATE FOREST STEWARDSHIP COORDINATING COMMITTEE LANDOWNER INSPECTION APPROVAL & RELEASE FORM

I/We, as the land owner(s) agree to allow inspection, appraisal, and survey of my property being offered for consideration under the Forest Legacy Program. I agree to allow members of the Maryland DNR Forest Service or the State Stewardship Coordinating Committee or their designated staff to inspect the property, as may be required at any time. I shall be notified in advance of all inspection visits. I understand that, should the negotiations not result in an amicable sale, there will not be condemnation of my land.

I/We understand that the information provided herein becomes the property of the State of Maryland and will not be returned.

I/We understand and agree that information contained herein may be used in part or in whole to provide interested parties with details and specifics of the proposed project. Every effort shall be made to keep the project and its details as anonymous as possible, given the informational requests received.

Signature of Landowner   Date

_____   _____

Signature of Landowner   Date

_____   _____

Signature of Landowner   Date

_____   _____

FOREST LEGACY PROGRAM– Checklist

With your Forest Legacy Program application package, please submit four copies (one original and three copies) of the following for each non-contiguous parcel:

_____ Completed application (incomplete applications will not be considered)
_____ Signed consent agreement
_____ Map (State Highway, USGS Topographic, Street Atlas, e.g.) showing location of parcel relation to nearest major town roads, as well as proximity to already protected open space, public or private or other significant ecological feature or item that the Forest Legacy Committee should be aware of when considering your application
_____ Legal description if available and/or copy of deed
_____ List of any known encumbrances or liens existing on the property including but not limited to contracts, leases, or outstanding rights not of record
_____ A plan-map of the property
        Plan-map Requirements:
            Scale, North arrow, date, and title

            Identifying the area to be included in the Forest Legacy Program and the area(s) to be excluded from the program (if any), with approximate acreage shown.

            Depicting forested and non-forested areas such as fields or gravel pits, approximate location of wetlands, bogs, ponds, marshes, etc., dams, dumps, waste disposal sites, wells, roads (labeled), trails and any other structures, permanent improvements, or any other feature that the Forest Legacy Committee may find useful in the evaluation of your application.

Optional but recommended materials: (Include as many as possible)

Letters of support for the project, including commitment of funds (if applicable) from:
_____ Local Land Trust and/or Conservation Commission
_____ Town Official(s) (Planning and/or Zoning Board, Mayor, Town Council President. etc.)
_____ Local Representative
_____ State Conservation Group or Governmental Organization (e.g. Local Water Supply Board, The Audubon Society of Maryland etc.).
_____ Congressional Representative (Senator, Representative, or both)
_____ Regional Conservation Group or Governmental Agency (The Nature Conservancy, Environmental Protection Agency, etc.)

All materials become the property of the State of Maryland and are non-returnable.

SFSCC Project Prioritization
Maryland Forest Legacy Parcel Evaluation — Self Scoring
Please circle points scored

A. Watershed Protection and Water Quality Values: (70 points maximum)

 15 pts Parcel has over 1,000 feet of perennial waterway shoreline, **or**

  10 pts Parcel has 300 feet -1,000 feet perennial waterway shoreline, **or**

  5 pts Parcel is situated on a river or perennial stream, but less than 300 feet frontage or more than 1,000 feet on a major intermittent stream

 5 pts Parcel includes 100 year floodplain at least 100 feet wide

 15 pts Parcel is within a regional drinking water aquifer area or protects headwaters. **or**

  10 pts Parcel drains into a public water supply lake.

 10 pts Parcel is adjacent to identified permanent watershed protection area or within a priority watershed.

 15 pts Parcel contains a wetland larger than 2 acres in size

 10 pts Parcel drains into a natural wetland larger than 2 acres within 1/2 mile

                  Your score _____

B. Public Recreational Values: (40 points maximum)

 10 pts Proposed parcel has access to a public water body and applicant is willing to allow public access, **or**

  5 pts Adjoining parcel has water based recreation open to the public

 5 pts Proposed parcel has access to a public trail system and applicant is willing to allow public access, **or**

  2 pts Adjoining parcel has trails open to the public

 5 pts Proposed parcel has other outdoor recreation opportunities that the applicant is willing to allow public access to, **or**

  2 pts Adjoining parcel has other outdoor recreation open to the public

 15 pts Parcel adjoins public lands

 5 pts Parcel adjoins protected private lands or is within 1 mile of public lands

                  Your Score_____

C. Scenic Resource Values: (35 points maximum)

 20 pts Parcel has at least 1,000 feet frontage on a State Highway Administration or local department of transportation designated scenic route, **or**

  15 pts Parcel has 1-1,000 feet frontage on a State Highway Administration or local department of transportation designated scenic route

 15 pts Parcel is part of an important, regionally known scenic view, **or**

  10 pts Views of or from parcel are well known, locally important scenic views

                  Your Score _____

D. Cultural or Historical Values: (20 points maximum)

 20 pts Site contains documented historic sites in good to excellent condition, **or**

  10 pts Site contains one other documented historic site or historic forestry site in fair condition.

                  Your Score _____

E. Traditional Forest Values: (105 points maximum)

 35 pts Parcel grows great timber (>80% of area has site index >80' for Red Oak or 95' for Tulip Tree), **or**

20 pts Parcel grows fair/good timber (Average site index >70' for Red Oak or 85' for Tulip Tree)

20 pts At least 85% of the parcel can be accessed by 4-wheel drive tractor or log skidder, **or**

  10 pts 65-85% of the parcel is accessible by tractor

10 pts Parcel has been actively and well managed by the current owner, **or**

  5 pts Parcel has an existing forest stewardship plan, but has not been actively managed the past10 years

5 pts Parcel is enrolled in a Forest Conservation Management Agreement **or**

  2 pts if enrolled in the Woodland Assessment Program.

10 pts Parcel is relatively free of invasive and exotic species

15 pts Parcel is greater than 100 acres in size. Or, greater than 50 acres in sparsely forested areas (<10%forest)

10 pts Parcel has established research plots or educational facilities

<div align="right">

Your Score_____

</div>

F. Fish and Wildlife Habitat Values: (55 points maximum)

20 pts Parcel is located in rural area (less than 3 houses within or businesses within 300 feet/mile of boundary), **or**

  10 pts Parcel is located in semi-rural area (less than 6 houses or businesses within 300 feet/mile of boundary)

10 pts Parcel contains a mix of wildlife habitat types

15 pts Parcel is connected to at least 80 acres of other forest and riparian areas

10 pts Parcel contains at least 1 perennial water source for wildlife/80 acres, **or**

  5 pts Parcel contains 1 perennial watering site/100 acres or is within ¼ mile of a significant watering site.

<div align="right">

Your Score_____

</div>

G. Endangered Species Values: (35 points maximum)

15 pts Parcel supports at least 3 rare, threatened or endangered (RTE) species as documented by Maryland Department of Natural Resources Wildlife and Heritage Service (DNR WHS), **or**

  10 pts 1-2 RTE species supported and documented on the parcel by DNR WHS, **or**

  5 pts No RTE species have been documented on the parcel, but habitat type is diminishing or has high likelihood of supporting RTE species in a sustainable manner as stated by DNR WHS

15 pts Parcel contains a Maryland Sensitive Species Project Review Area

5 pts Parcel is within 1 mile of a Maryland Sensitive Species Project Review Area

<div align="right">

Your Score _____

</div>

H. Other Ecological Values: (30 points maximum)

10 pts Parcel is part of a large contiguous forest block at least 250 acres in the Central or Southern Regions or 500 acres in the Western or Eastern Regions **or**

  5 pts Parcel is part of 125 acre contiguous forest block in Central or Southern Regions or 250 acre contiguous block of forest in Western or Eastern regions.

5 pts Parcel contains more than 3 ecological communities, **or**

  2 pts Parcel contains 2-3 ecological communities

5 pts Parcel includes ecological communities which are dwindling or uncommon

10 pts Parcel contains old growth forest.

<div align="right">

Your Score _____

</div>

I. Conversion Threats to Parcel: (75 points maximum)

10 pts Public water or sewer systems are within 2 miles of the parcel. **or**

  5 pts Public water or sewer systems currently exist at parcel

10 pts at least 50% of site suitable for development (e.g. soils, slope, can be divided into 3-5 acre lots)

10 pts Parcel has more than 5,000 feet of public road frontage, **or**

  5 pts Public road frontage is 1,000-5,000 feet

10 pts Parcel is within 20 miles of a city of at least 20,000 people

10 pts Parcel is within 5 miles of a town of at least 5,000 people (different city than previous question)

10 pts Parcel is within 5 miles of interstate exchange

5 pts Parcel contains more than 3,000 bd ft/acre of commercial timber

5 pts Property has other unique characteristics to attract development (e.g. river, lake, high quality paved road)

5 pts Property is currently listed for sale

Your Score_____

J. Acquisition or Manageability of Parcel: (45 points maximum)

10 pts There is written support to purchase this parcel from DNR, Land Trusts or other conservation groups

10 pts Owner willing to sell the easement at least 25% below market value, **or**

  10 pts There is written financial support from DNR, Land Trusts or other conservation groups

5 pts Parcel is absent of significant environmental hazards and in good ecological condition

5 pts Traditional forest uses are compatible with parcel's natural values

5 pts Current adjoining land uses are compatible with Forest Legacy Program

10 pts Owner is willing to protect adjoining open land from development by a conservation easement

Your Score_____

Other factors — check appropriate items

____ Owner is not reserving or withdrawing any buildings sites from the eligible ownership

____ 100% of the easement area is forest

____ There is written active support from the community for this Forest Legacy parcel

____ Parcel adjoins another accepted or nominated Forest Legacy parcel

____ Parcel complements other federal investments or initiatives (e.g. wetland reserve area, watershed projects)

____ At least 50% of the easement value will be donated or paid for by other sources

____ Parcel conveys rights in addition to development and mineral rights (e.g. public access)

Your Total Score_____

Appendix B: Plan Comments

Comment: The State Forest Stewardship Committee expressed preference for easement rather than fee simple acquisition and commented on the need to maintain the working aspect of the larger forest blocks to support existing and expanded forest industry. Mapped areas were noted as on target for forest conservation. Work on mapping and updates by Colleen Kenny was commended. (Nov. 1, 2019 meeting, Davidsonville, MD)
Response: Comments are consistent with the program and proposed draft Assessment of Need (AON).

Comment: The Maryland Environmental Trust supports the proposed expansion of the Forest Legacy Program in Maryland, as another means of preserving high priority lands. We recognize that many landowners who may not have the means to donate a conservation easement may be more willing to sell an easement if the funds are available, and may be inclined to work with the MD Forest Service if their objectives are more aligned with forest products production than habitat management eg. for promoting Forest Interior Dwelling Bird Species. There is plenty of space for the variety of programs that conserve lands to work and to cooperate, and we welcome continuing to work with the MFS and other easement holding partners where there are opportunities to create synergy. (11/16/20, Jon Chapman in public comment period)
Response: Comments are consistent with the program and proposed draft AON.