



LAND PRESERVATION AND RECREATION PLAN 2019-2023

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Dear Friends,

Often called “America in Miniature,” Maryland is uniquely comprised of mountains, valleys, wetlands, shorelines, beaches and freshwater streams. Our state’s diverse landscapes are preserved and highlighted through our public parks, recreational facilities and protected lands, which provide Maryland residents and visitors with a wide array of experiences and educational opportunities, benefitting and enhancing our environment and quality of life. These places and their amenities help create healthier communities, stimulate local economies, and are vital components of our culture and heritage.



Over 50 years ago, the U.S. Congress passed the Land and Water Conservation Fund Act, a measure that helps ensure that outdoor recreation opportunities are available to all Americans. Since 1966, the Land and Water Conservation Fund State Assistance Program has provided over \$90 million for 400 public outdoor recreation projects throughout Maryland, including projects in every county and Baltimore City. It has directly contributed to Marylanders gaining access to parks and open spaces, trails, and community recreational facilities.



The enclosed 2019-2023 Land Preservation and Recreation Plan is a strategic planning document that will guide the management of those resources over the next five years. Developed in cooperation with state and local officials, enthusiasts and stakeholders, and citizens, in accordance with the U.S. Department of Interior Land and Water Conservation Fund guidelines, the plan encourages the enjoyment of Maryland’s outdoors while balancing the need for stewardship and preservation of our natural and cultural resources.

We encourage all Marylanders to review this document and to take advantage of the quality outdoor recreation experiences that our beautiful state has to offer.

Sincerely,

A handwritten signature in black ink, reading "Larry Hogan". The signature is fluid and cursive, with the first name "Larry" and last name "Hogan" clearly distinguishable.

Larry Hogan
Governor

A handwritten signature in black ink, reading "Jeannie Haddaway-Riccio". The signature is stylized and cursive, with the first name "Jeannie" and last name "Haddaway-Riccio" clearly distinguishable.

Jeannie Haddaway-Riccio
Secretary

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ACKNOWLEDGMENTS

The 2019 update of the Maryland Land Preservation and Recreation Plan was coordinated by the Maryland Department of Natural Resources. In Maryland, the Statewide Comprehensive Outdoor Recreation Plan is known as the Land Preservation and Recreation Plan. The Department is the state agency responsible for administering Maryland's Program Open Space and federal Land and Water Conservation Fund programs in Maryland. The Maryland Department of Natural Resources has the authority to represent and act for the state in coordination with the Secretary of the Interior for purposes of the Land and Water Conservation Act of 1965, as amended. The preparation of this plan was financed in part through a Land and Water Conservation Fund planning grant, and the plan was approved by the U.S. Department of the Interior, National Park Service, under the provisions of the Federal Land and Water Conservation Fund Act of 1965 (Public Law 88-578).



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EXECUTIVE SUMMARY

The significance of outdoor recreation in Maryland cannot be summarized in a single sentence. The diverse landscape of the Old Line State is the perfect setting to get outside and choose your own adventure. There are endless outdoor opportunities in Maryland that have far-reaching and positive impacts on public health, the environment, and the economy. National, state, and local parks, forests, trails, beaches, and open spaces are foundational infrastructure that support the variety and quality of outdoor recreation experiences in contributing to Marylanders high quality of life and make the state attractive to visitors.



"The Department of Natural Resources leads Maryland in securing a sustainable future for our environment, society, and economy by preserving, protecting, restoring, and enhancing the State's natural resources."

*Maryland Department of Natural Resources
Mission Statement*

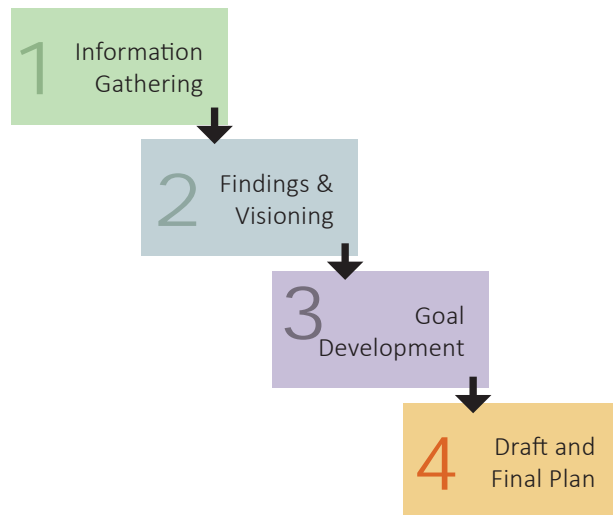
A. PURPOSE OF THIS PLAN

Every five years, Maryland updates its Land Preservation and Recreation Plan to better meet the needs of our citizens, identify current recreational trends, address service provision challenges, and update our goals and priorities to improve statewide outdoor recreation opportunities. The 2019 Land Preservation and Recreation Plan is a resource and a guide for strategically enhancing public outdoor recreation opportunities statewide over the next five years. Completion of the 2019-2023 Plan maintains the state's eligibility to receive federal Land and Water Conservation Fund grants and helps guide Maryland's Program Open Space. The Land and Water Conservation Fund was established in 1965 and has provided over \$90 million to fund over 400 projects in Maryland to improve public access to nature and outdoor recreation.



Boating The Drops by Charles Shepherd

B. PLANNING PROCESS SUMMARY



Development of the 2019 Land Preservation and Recreation Plan followed a multi-faceted planning process that began in December 2017 and concluded in March 2019. The planning process focused on analyzing data and issues impacting outdoor recreation, including citizen and stakeholder feedback, enhancing GIS-based inventory and analysis, and input and guidance from a multidisciplinary team of senior staff from multiple state agencies and partners in outdoor recreation including the National Park Service, Frostburg University, the Maryland Parks and Recreation Association, and the Maryland Association of Counties. This collaborative approach allowed a diverse group of partners, citizens, and staff to contribute their expertise, local knowledge, and institutional history to the process.

C. EXISTING OUTDOOR RECREATION OPPORTUNITIES

The primary providers of public outdoor recreation opportunities in Maryland are the Department of Natural Resources, local jurisdictions, and the National Park Service. In total these public agencies manage approximately 2,200 parks, open spaces, and outdoor recreation properties that provide residents and visitors with access to water recreation, natural areas, picnicking, trails, hunting, or fishing.

The Department of Natural Resources and its partners are well positioned to maintain and leverage the many strengths of the state's system of public parks, natural areas, and open spaces to enhance opportunities for residents and visitors to get outdoors and participate in activities that benefit them as individuals and Maryland's public at-large. Many residents are regular participants in outdoor activities, and most Marylanders are keen believers in the health, environmental, and economic benefits that can be realized through land conservation and getting active outdoors.

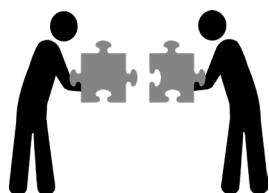


Floral bridge by Casey Terrell

D. KEY ISSUES AND RECOMMENDATIONS SUMMARY

Contemporary issues impacting the provision of public outdoor recreation opportunities identified through the update of the Land Preservation and Recreation Plan did not differ significantly from five years ago. The 2019 Plan provides a current view on pertinent issues, validates many of the key findings of the last plan and identifies

recommendations for enhancing the provision of public outdoor recreation areas and services for the next five years. While many important issues were considered, through 2023, the Department of Natural Resources and its partners in outdoor recreation should seek to achieve the following goals.



Goal 1: Coordination and Collaboration

Strengthen coordination and collaboration between federal, state, and local government agencies and other key stakeholders in planning for the provision of outdoor recreation opportunities and land conservation initiatives.



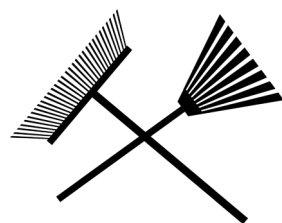
Goal 2: Promote the Benefits of Outdoor Recreation and Conservation of Natural Lands

Promote the economic, cultural, health, and environmental benefits of outdoor recreation and conservation of natural lands. Seek to increase the public's understanding of these benefits to enhance interest and participation in recreating outdoors in Maryland.



Goal 3: Increase Access to Open Spaces and Waterfronts

Increase and improve opportunities for all segments of the population to access land and water-based outdoor recreation opportunities.



Goal 4: Improve What's Already Available

Improve the overall quality of outdoor recreation infrastructure at public parks and outdoor areas across the state.



Goal 5: Develop an Informed Stewardship Culture

Promote environmental education and use of parks and outdoor areas as teaching tools to foster a positive stewardship ethos among children, youth, and their families.



Windsurfing on the Bay with Coast Guard Eagle in Background by Dennis Raulin

I. INTRODUCTION

The significance of outdoor recreation in Maryland cannot be summarized in a single sentence. From a leisurely walk in a neighborhood park to fishing on the Chesapeake Bay or camping in the Appalachian Mountains, there are endless outdoor opportunities in Maryland. The benefits of outdoor recreation and land conservation are far-reaching and have positive impacts on public health, the environment, and the economy. National, state, and local parks, forests, trails, beaches, and open spaces are foundational infrastructure that support the variety and quality of outdoor recreation experiences that contribute to Marylanders' high quality of life and make the state attractive to visitors. In Maryland, outdoor recreation generally includes activities that are dependent on the natural landscape and outdoor environments, such as boating, fishing, hunting, hiking, and camping.



Scraping Bottom by Margaret Sentman



"In a sustainable Maryland, we recognize that the health of our society and our economy are dependent on the health of our environment. Therefore, we choose to act both collectively and individually to preserve, protect, restore, and enhance our environment for this and future generations."

*Maryland Department of Natural Resources
Vision*

"The Department of Natural Resources leads Maryland in securing a sustainable future for our environment, society, and economy by preserving, protecting, restoring, and enhancing the State's natural resources."

*Maryland Department of Natural Resources
Mission Statement*

Every five years, Maryland updates its Land Preservation and Recreation Plan to remain eligible to receive federal Land and Water Conservation Fund grants and adjust strategies for enhancing the provision of public outdoor recreation services based on changing demographics and trends, needs, and resources. The Land and Water Conservation Fund was established in 1965 and has provided over \$90 million to fund over 400 projects in Maryland to improve public access to nature and outdoor recreation. In 2014, the Maryland Department of Natural Resources created its first Land Preservation and Recreation Plan, with prior iterations developed by the Department of Planning.

A. PURPOSE OF THIS PLAN

The 2019 Land Preservation and Recreation Plan is a resource and guide for strategically enhancing public outdoor recreation opportunities statewide over the next five years. It captures the latest recreation wants and needs of citizens, details relevant service provision challenges, and outlines goals and priority actions for the Department of Natural Resources to pursue to improve outdoor recreation in Maryland through 2023. The plan also provides a summary of major statewide natural resource and land conservation programs.

The update of the plan for 2019 is the result of a 15-month planning process that included research, lessons learned through implementation of the 2014 Plan, key findings of current local Land Preservation, Parks, and Recreation Plans; public input and feedback; advice and direction from a multidisciplinary technical advisory committee; and updating the statewide outdoor recreation inventory and GIS analysis.

Key outcomes of the planning process included:

- Exponential expansion of the Department's GIS inventory of public outdoor recreation areas from less than 200 sites to more than 2,200 through teamwork with Maryland's county governments and the City of Baltimore to include local data.
- Completion of a level of service analysis by Department of Natural Resources service regions. In 2014, the level of service analysis was conducted on a statewide level.
- Validation of the continued importance of the 2014 Land Preservation and Recreation Plan central theme of "Connecting People and Places" and associated key strategies.
- Identification of current needs, trends, and priorities for enhancing public outdoor recreation opportunities statewide.

- Updating of the Department of Natural Resources' statewide goals for improving outdoor recreation in Maryland over the next five years.

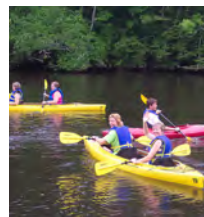
2014 Plan Theme: Connecting People and Places



COORDINATE with local, county, and state planning efforts



PROMOTE health, livability, economic, and environmental benefits of outdoor recreation and natural resources



ACCESS to water and land based recreation for all populations



CONNECT Department of Natural Resources trails and public lands to the places where people live, work, and play

B. PLANNING PROCESS OVERVIEW

Development of the 2019 Land Preservation and Recreation Plan followed a multi-faceted planning process to gather and analyze quantitative and qualitative data on issues impacting outdoor recreation, gain an understanding of Marylanders' current needs and perceptions of public outdoor recreation opportunities, and to vet and validate key findings and develop goals for addressing priority needs over the next five years. The planning process began in December 2017 and concluded in March 2019 with National Park Service approval of the 2019-2023 Land Preservation and Recreation Plan.

Planning Process Methodology



Step 1: Information Gathering

- Review and consideration of existing federal; state; and local plans, reports, and guiding documents pertaining to outdoor recreation and land conservation in Maryland.
- Creation of a multidisciplinary Technical Advisory Committee to steer plan development.

- Collection of input and feedback from the public through hosting:
 - Eight Public Regional Focus Group Meetings
 - Statewide Statistically Valid Telephone Survey and Open Public Survey
- Expansion of the statewide public outdoor recreation site database and completion of a GIS-based level of service analysis to help identify potential gaps in access to outdoor recreation opportunities.

Step 2: Findings and Visioning

- Vetting of data and analysis results with the Technical Advisory Committee.
- Review of accomplishments and challenges for outdoor recreation over the past five years.
- Development of preliminary recommendations.

Step 3: Goal Development

- The creation, prioritization, and refinement of statewide goals and implementable actions for enhancing public outdoor recreation opportunities.

Step 4: Draft and Final Plan

- Development of the updated Land Preservation and Recreation Plan including review and approval by the National Park Service and the State of Maryland.

The Technical Advisory Committee included 24 senior members of federal, state, and local government agencies and other entities with a variety of connections to outdoor recreation. This multidisciplinary team assisted in identifying stakeholders to invite to focus group sessions, the development of survey questions, analyzed research and public input findings, and contributed to the development of an implementable action plan. Notes from the Committee's meetings were provided as a staff resource document.

I. INTRODUCTION

Public input in the development of the Land Preservation and Recreation Plan included hosting stakeholder focus group meetings with outdoor recreation enthusiasts, representatives of local and regional conservation groups, interested citizens, and staff from local and state agencies, as well as conducting a statewide outdoor recreation survey of residents through a statistically valid phone survey and a publicly accessible online survey. Survey and focus group feedback helped identify current public outdoor recreation challenges and needs.

Multidisciplinary/multi-agency collaboration through the Technical Advisory Committee and public input were key in developing the Land Preservation and Recreation Plan and will be important to implementing the plan.

C. CURRENT STATE OF PUBLIC OUTDOOR RECREATION IN MARYLAND

Outdoor opportunities for fun, fitness, leisure, and learning can be found in every corner of Maryland. This is the result of decades of purposeful work by the state and local public agencies to create a world-class system of lands, facilities, and programs that support outdoor recreation and provide people with access to a variety of high-quality outdoor experiences.



Since the completion of the last Land Preservation and Recreation Plan in 2014, the State of Maryland passed legislation to restore and protect funding for land preservation and recreation programs and completed several major projects that increase public access and recreation opportunities for Marylanders to get outside, which are detailed as follows:

HB 462, the Administration's bill passed during the 2016 General Assembly, restores and protects state funding to transfer tax-funded land conservation, preservation, and recreation programs including Program Open Space. HB 462 provided \$60 million in new funding – \$20 million in 2017 and \$40 million in 2018 – for programs such as the Maryland Agricultural Land Preservation Fund, and Rural Legacy and Program Open Space, and allocates funds for state land and park development, maintenance and recreation.

- Governor Hogan's FY 2019 budget returned transfer tax funded land conservation, preservation, and recreation programs to full cash funding (no funds diverted to the General Fund) for the first time in several fiscal years. Program Open Space received \$110 million in FY 2019 funding.
- HB 462 also protects transfer-tax funding for land conservation, preservation, and recreation programs going forward, requires that some past transfers be repaid, and establishes new procedures for all future appropriations. This legislation secures funding for POS and similar programs that benefit parks and recreation in our communities going forward.



The new Harriet Tubman Underground Railroad State Park opened in 2017 and has welcomed over 100,000 visitors from all 50 states and 68 countries.



Between 2013 and 2017, 11,204 acres of open space was acquired by the Department of Natural Resources, increasing the total acreage managed to 486,863.

- The acquisition of 182 acres in Charles County is an addition to the Myrtle Grove Wildlife Management Area. The acquisition will enhance and protect water quality in Mattawoman Creek and the Potomac River Basin while providing additional wildlife habitat; the National Audubon Society identified the property as an “Important Bird Area,” making it an ideal location for birders and other wildlife observers.
- The acquisition of 460 acres in Cecil County will be managed as a new state park. Bohemia River State Park will provide opportunities for public access in the form of low-impact, passive recreation such as canoeing, fishing, hunting, kayaking, trail use, and wildlife viewing, keeping with the primary goals of conservation and education.
- The acquisition of 1,986 acres in Garrett County will be managed as a new state park. Wolf Den Run State Park will provide a high-quality recreation experience and opportunity for off-highway/off-road vehicle riders. This purchase was made possible with a match from the National Park Service with a Land and Water Conservation Fund grant.



Maryland’s first purpose-built off-road vehicle trail and campground opened in 2017 at Savage River State Forest. The 12-mile St. Johns Rock off-road vehicle trail provides a variety of terrain for four-wheel drive vehicles, dirt bikes, and all-terrain vehicles.



The Land and Water Conservation Fund, Program Open Space, and other funding sources managed by the Department of Natural Resources consistently delivered millions of dollars in grants to help fund parks, recreation, and land conservation improvement projects in all of Maryland’s counties and the City of Baltimore.

Over the past five years the population of Maryland has continued to grow, and the Department of Natural Resources and local parks and recreation agencies have reported strong visitation to parks and usage of outdoor recreation amenities and increases in demand for

services and programs. Marylanders are regular users of public parks and open spaces, and as the population grows, so will the diverse outdoor recreation needs of this active citizenry.

I. INTRODUCTION

As was the case in 2014, trail-based activities, especially walking, continue to be the most popular outdoor recreation and fitness activity overall, and many state and local agencies are investing in pedestrian and bicycle infrastructure and recreational trails to meet demands for more walkable communities and diverse trail-based experiences. The inter-related health, environmental, and economic benefits of outdoor recreation, including something as simple as going for a walk outside, have become a higher focus of parks and recreation agencies statewide over the past five years. While these benefits have been generally accepted for some time, contemporary research and advocacy has helped to quantify and make the benefits of being active outdoors more easily and widely understood and leveraged in more impactful ways.

Visitation to Maryland State Parks has steadily increased over the past five years. Nearly 14 million people visited in 2017, compared to 12 million in 2015.

Residents of Maryland have provided significant input to state and local parks and recreation agencies through surveys, public meetings, and other opportunities for sharing ideas and concerns over the past five years. Recurring

themes in public feedback received during the process to update the Land Preservation and Recreation Plan indicated:

- Outdoor recreation is extremely important to the majority of Marylanders, but existing public opportunities at state and local facilities are not completely meeting the needs of recreators.
- Although most people drive to parks and open spaces, access to the outdoors close-to-home is important as most people are not willing to drive more than an hour.
- The majority of Marylanders have visited a state park or forest at least once in the past year. Annual user surveys by the Maryland State Park Service report high rates of satisfaction.
- Priority areas for enhancing outdoor recreation statewide should include better maintenance and improvement measures for basic parks and recreation infrastructure; investing in trails and enhancing opportunities for biking and walking; and improving marketing, availability, and accessibility of information about outdoor opportunities online and at public parks and open spaces.



Paddleboarding with Dogs by Norma Broadwater

D. GETTING PEOPLE OUTDOORS IS GOOD FOR MARYLAND

A growing body of modern scientific research and literature concludes that being active outdoors can have tremendous benefits for individual and community well-being. In Maryland, the public health, environmental, and economic benefits of outdoor recreation and land conservation are key areas of interest for public agencies. Why does getting people outdoors matter in Maryland? Public health and individual well-being increases when people regularly participate in physical activity outdoors, while sedentary lifestyles and lack of exposure to nature are linked to health challenges. While these concepts have been recognized for some time, the depth of scientific research that directly links regular physical activity outdoors and spending time in greenspace to reductions in obesity, heart disease, diabetes, and mental health issues continues to grow.

As reported by the United Health Foundation, in 2017, Maryland ranked as the 16th healthiest state in the country, but faces increasing rates of adult obesity (30% of Maryland adults are obese) and cardiovascular deaths.¹ At the same time, healthcare organizations including the American Heart Association, National Institute of Health, Centers for Disease Control and Prevention, and Blue Cross Blue Shield all actively promote the high-health value of physical activities as simple as walking as preventative and treatment tools for a variety of physical and mental health conditions.

The majority of Americans live in urban areas and spend the majority of their average day indoors. At the same time, data shows that not everyone has equitable access to nature or the ability to access quality park space on a regular basis. Studies show that time spent outdoors, especially in natural areas, has physical and mental health benefits. Various medical, university, and public

health studies from the past 10 years have all come to similar, supportive conclusions that getting out into nature and being active outdoors does great things for individual and public health including the following:

- Exposure to sunlight increases vitamin D levels, can improve mood, stave off seasonal affective disorder, and aid in healing.
- Clinical studies reported improved healing and lower stress in patients recovering from surgery when they were exposed to natural light. Healthcare facilities have embraced this notion, and created garden spaces that provide employees and patients with a quiet green space. The concept is widely accepted and actively researched and promoted by groups including the American Society of Landscape Architects.²
- People with stress, depression, dementia, attention-deficit/hyperactivity disorder (ADHD), and other mental health challenges report higher levels of calmness, focus, and improved memory after spending time in nature versus suburban or urban surroundings.³
- Walking and other easily accessible outdoor activities can help prevent and treat chronic cardiovascular diseases and diabetes. Just getting out to a park tends to increase an individual's physical activity.
- Adding parks that integrate green infrastructure to traditionally underserved communities or improving safe access to quality parks can improve social equity. Studies have shown that increasing access to parks for underserved communities can show improved health, social, and economic benefits as well as increased resiliency to environmental hazards.

¹ americashealthrankings.org/learn/reports/2017-annual-report/state-summaries-maryland, Accessed October 2018

² scientificamerican.com/article/nature-that-nurtures/; Accessed October 2018

³ ncbi.nlm.nih.gov/pmc/articles/PMC5663018/; Accessed October 2018

Environmental Stewardship

The people of Maryland have high standards and expectations when it comes to protecting, preserving, restoring, and teaching others to maintain healthy ecosystems and landscapes. There are strong cultural and social ties to the Chesapeake Bay, forests, fields, and mountains of Maryland that residents treasure and desire to pass onto future generations. State and county parks, forests, and open spaces not only preserve natural resource functions critical to human survival, they also serve as the stage for diverse world-class outdoor recreation experiences, and a living classroom for teaching tomorrow's stewards of our shared environment. Public parks and open spaces are places where anyone can go to be surrounded by nature and participate in activities that create palpable connections with the natural world. Federal, state, and local land conservation programs ensure that Marylanders continue to have places to go to develop connections with nature that support a sustainable land conservation and environmental stewardship ethic as fundamental for a healthy, prosperous, and resource-rich Maryland.

Economic Prosperity

Outdoor recreation is a major stimulator of economic activity in Maryland and attractive and well-maintained parks, trails, and facilities increase the desirability of community for residents and businesses. The Outdoor Industry Association estimated that participation in outdoor recreation in Maryland in 2017 generated \$14 billion in consumer spending, which supported 109,000 jobs, \$4.4 billion in wages and salaries, and generated \$951 million in state and local tax revenue.⁴ In addition to consumer spending, the National Recreation and Parks Association 2017 report, "Promoting Parks and Recreation's Role in Economic Development," indicates that high-quality public parks and recreation opportunities generate positive economic impacts in communities by:⁵

- Playing a central role in community identity or sense of place and contributing to a high-quality of life and high-quality communities tend to attract skilled, educated, and entrepreneurial workers and employers seeking this type of talent.



Friends Forever by Maddie Capps

⁴ outdoorindustry.org/wp-content/uploads/2017/07/OIA_RecEcoState_MD.pdf; Accessed October 2018

⁵ nrpa.org/siteassets/nrpa-economic-development-report.pdf; Accessed October 2018

- Enhancing community “curb appeal” and increasing the value of properties (and associated local tax revenues) located proximate to well maintained parks. The National Association of Realtors finds that homes located near a desirable public park or recreation open space can have their values boosted by 8% to 20%. However, a poorly maintained park nearby can drag down the value of nearby homes.
- Lowering health care costs by providing opportunities that improve physical and mental well-being.
- Serving as green infrastructure capable of improving community resiliency to natural disasters. Parks and preserved natural spaces detain and absorb flood waters and storm damage, which can reduce risks to life, property, and infrastructure and reduce recovery and insurance costs.

In addition to the findings of the National Recreation and Parks Association report, tourism in Maryland is also highly dependent on the state’s system of parks and public open spaces. In 2017 alone, Maryland State Parks welcomed 14 million visitors, including locals and travelers from across the world. State parks, local jurisdictions, and the National Park Service host millions of visitors at their parks and open spaces on an annual basis. Those who recreate in Maryland spend money on goods and services in their pursuit of fun, fitness, and leisure, and this has become the focus of the Maryland Outdoor Recreation Economic Commission.⁶ Established in 2017 by Governor Larry Hogan, the Commission is, “responsible for developing strategies and making recommendations to the governor to strengthen the state’s outdoor recreation industry and help ensure increased investment in our state’s outdoor recreation resources.”

E. PRIORITIES AND GOALS FOR THE NEXT FIVE YEARS

The Maryland Land Preservation and Recreation Plan provides a summary of key information relevant to decision making, goals, and recommended actions for the Department of Natural Resources and partners to pursue over the next five years to improve outdoor recreation opportunities for the public across the state. Key information regarding existing assets and resources supporting outdoor recreation are summarized in Section II: Maryland’s Public Parks and Open Spaces. An overview of Maryland’s population, public feedback, level of service analysis, and other research is presented in Section III: Research and Trends. Section IV: Priorities and Goals for the Next Five Years was developed based on the sum of all research, public input, and guidance from agency staff and project Technical Advisory Committee, and includes specific goals and actions for the Department and partners to seek to implement in 2019-2023.

⁶ dnr.maryland.gov/pages/more/home.aspx



Foggy Mornings by Bryan Rosensteel

II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

A. INVENTORY OF PUBLIC OUTDOOR RECREATION SITES

Often lovingly referred to as “America in Miniature,”⁷ Maryland’s diverse landscape, history, and cultural heritage are foundational features of conserved public lands and outdoor recreation experiences across the state. The existing system of public parks, open spaces, and natural areas provides access to some of Maryland’s most culturally, historically, and environmentally significant places, panoramic vistas, and the some of the best spots for fishing and mountain biking in the mid-Atlantic region.

For the purposes of the Land Preservation and Recreation Plan inventory, outdoor recreation sites included met the following criteria:

- A. Publicly accessible
- B. Provided natural-resource based recreation
- C. Included at least one of the following amenities:
 - 1. Natural areas
 - 2. Water recreation
 - 3. Picnicking
 - 4. Trails
 - 5. Hunting
 - 6. Fishing

Key Outdoor Recreation Providers in Maryland

The Department of Natural Resources manages over 485,000 acres of state parks, forests, and natural resource management areas that provide outdoor recreation opportunities for Marylanders. Units within the Department are responsible for all aspects of environmental management and outdoor recreation including land acquisition; resource conservation; regulation and enforcement; licensing of watercraft; hunters and anglers; public education; operating parks and facilities; and administering the Land and Water Conservation Fund, Program Open Space, and other funding programs that support the improvement of public outdoor recreation amenities.

Twenty-three counties and the City of Baltimore are the primary providers of field and gym sport facilities and programs and close-to-home outdoor recreation opportunities for most Marylanders. All local agencies manage parks and properties that provide outdoor recreation opportunities ranging from trails and bike paths to boat ramps and nature centers. For detailed information regarding county and City of Baltimore parks and recreation property inventories, please consult the current county and city Land Preservation, Parks, and Recreation Plans available at dnr.maryland.gov/land/Pages/Stewardship/2017-Draft_County-LPRP.aspx

The National Park Service manages 18 diverse sites in Maryland that provide outdoor recreation and conserve lands and structures significant to American history and culture, including Ft. McHenry National Monument and Historic Shrine, Chesapeake and Ohio Canal National Historic Park, Assateague Island National Seashore, and Antietam National Battlefield. The National Park Service also works closely with state and local partners to promote the Captain John Smith Chesapeake National Historic Trail and the Potomac Heritage National Scenic Trail. More information about the National Park Service’s presence in Maryland can be found on its website: nps.gov/state/md/index.htm

⁷ visitmaryland.org/info/maryland-facts; Accessed October 2018

II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES



STATE PARKS provide outdoor recreation and conserve open spaces.



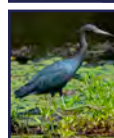
STATE FORESTS conserve natural resources, provide timber, and offer low-intensity outdoor recreation amenities.



NATURAL RESOURCE MANAGEMENT AREAS conserve wildlife habitat and agricultural areas and provide wildlife-focused recreation such as fishing, hunting or birding.



NATURAL ENVIRONMENTAL AREAS are unique ecological areas or landscapes that provide low-intensity outdoor recreation and educational opportunities.



WILDLIFE MANAGEMENT AREAS focus on wildlife management and low-intensity wildlife-related outdoor recreation like hunting and wildlife-viewing.

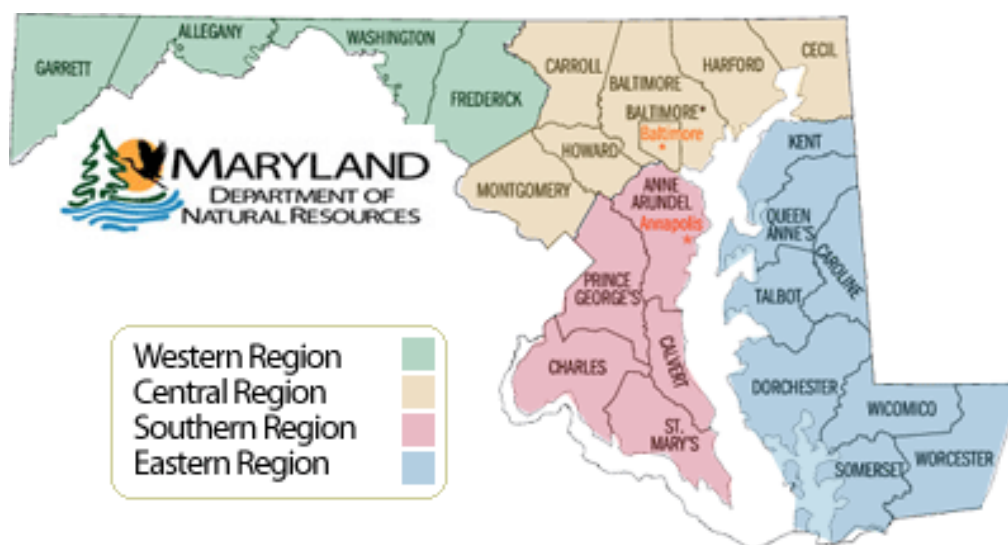


A STATE WILDLAND is a special protective layer established by legislation that "overlays" another Department of Natural Resources land unit. Wildlands contain wilderness characteristics and otherwise outstanding and unique natural features worthy of preservation in a natural state.

The primary providers of public outdoor recreation sites in Maryland are the Department of Natural Resources, local jurisdictions, and the National Park Service. In total, these public agencies manage approximately 2,200 parks, open spaces, and outdoor recreation properties that provide residents and visitors with access to one or more opportunities for water recreation, natural areas, picnicking, trails, hunting or fishing. Roughly 90% of the 2,200+ outdoor recreation sites in the Land Preservation and Recreation Plan inventory are neighborhood and regional parks and outdoor facilities managed by counties and the City of Baltimore, while the majority of land acreage is managed by the Maryland Department of Natural Resources. According to the Department of Natural Resources 2017 "Annual Acreage Report,"⁸ the

agency manages 486,863 total acres,⁹ with the overwhelming majority of this land consisting of state parks, forests, wildlife management areas, natural resource management areas, and natural environmental areas, all of which serve natural resource conservation functions and provide diverse outdoor recreation opportunities.

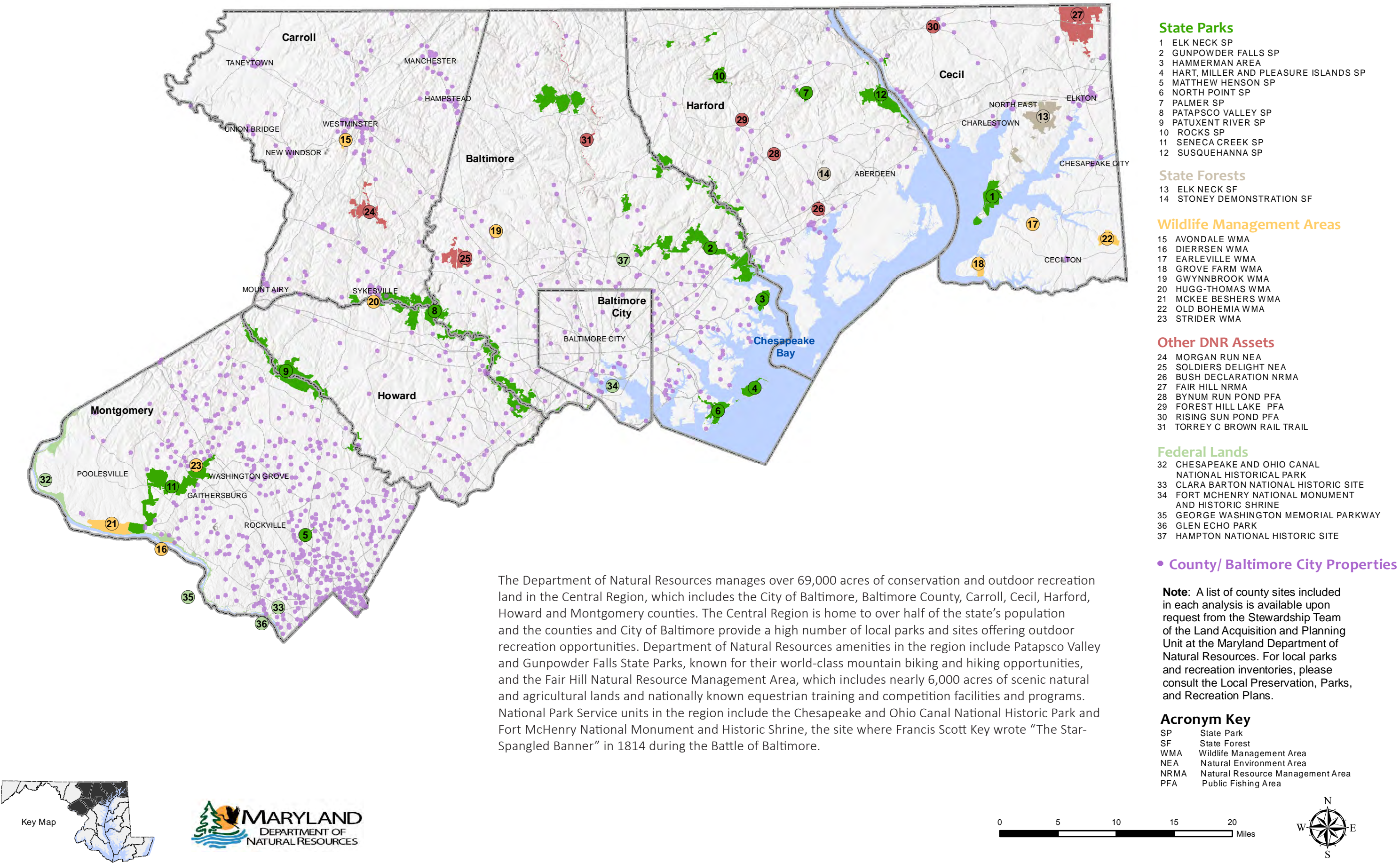
Public lands providing outdoor recreation opportunities are spread throughout Maryland. For the purposes of the Land Preservation and Recreation Plan, these sites have been classified by the Department of Natural Resources four geographic service regions, as described on the following maps.



⁸ dnr.maryland.gov/land/Pages/Tracking-Acreage.aspx

⁹ dnr.maryland.gov/land/Documents/Stewardship/CurrentAcreageReport.pdf; Accessed October 2018

Map 1: Central Region Inventory



Map 2: Eastern Region Inventory

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JAMES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLWILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

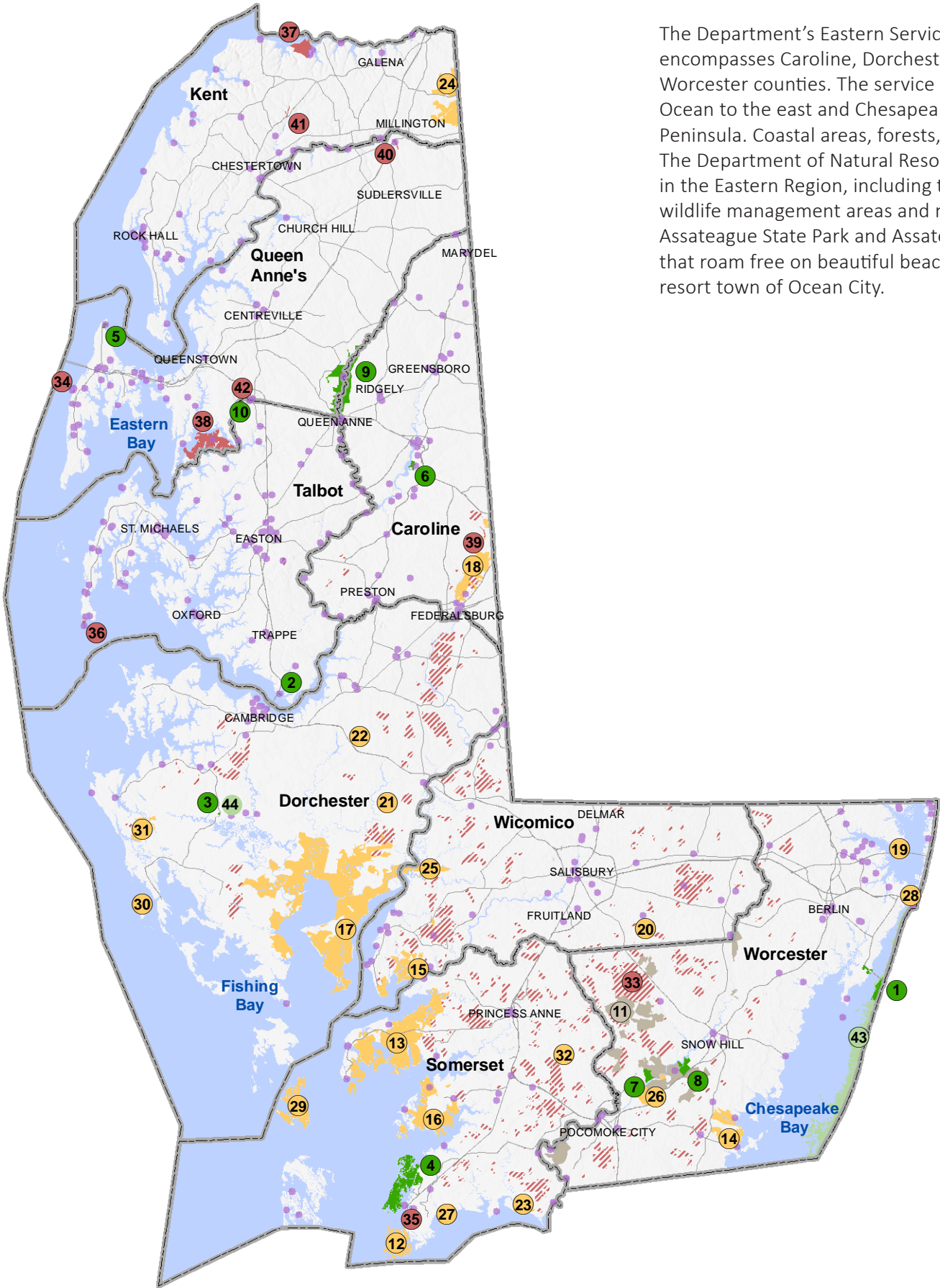
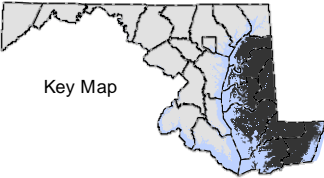
- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

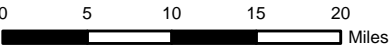


The Department’s Eastern Service Region is the least populated of all service regions and encompasses Caroline, Dorchester, Kent, Queen Anne’s, Somerset, Talbot, Wicomico, and Worcester counties. The service region is bordered by the State of Delaware and Atlantic Ocean to the east and Chesapeake Bay to the west, and is part of the larger Delmarva Peninsula. Coastal areas, forests, and farmland dominate the landscape of the region. The Department of Natural Resources manages approximately 181,000 acres of property in the Eastern Region, including ten state parks and recreation areas and over a dozen wildlife management areas and natural resource management areas. The highly popular Assateague State Park and Assateague Island National Seashore, known for the wild ponies that roam free on beautiful beaches, are located on the Atlantic Coast, near the popular resort town of Ocean City.

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3: Southern Region Inventory

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

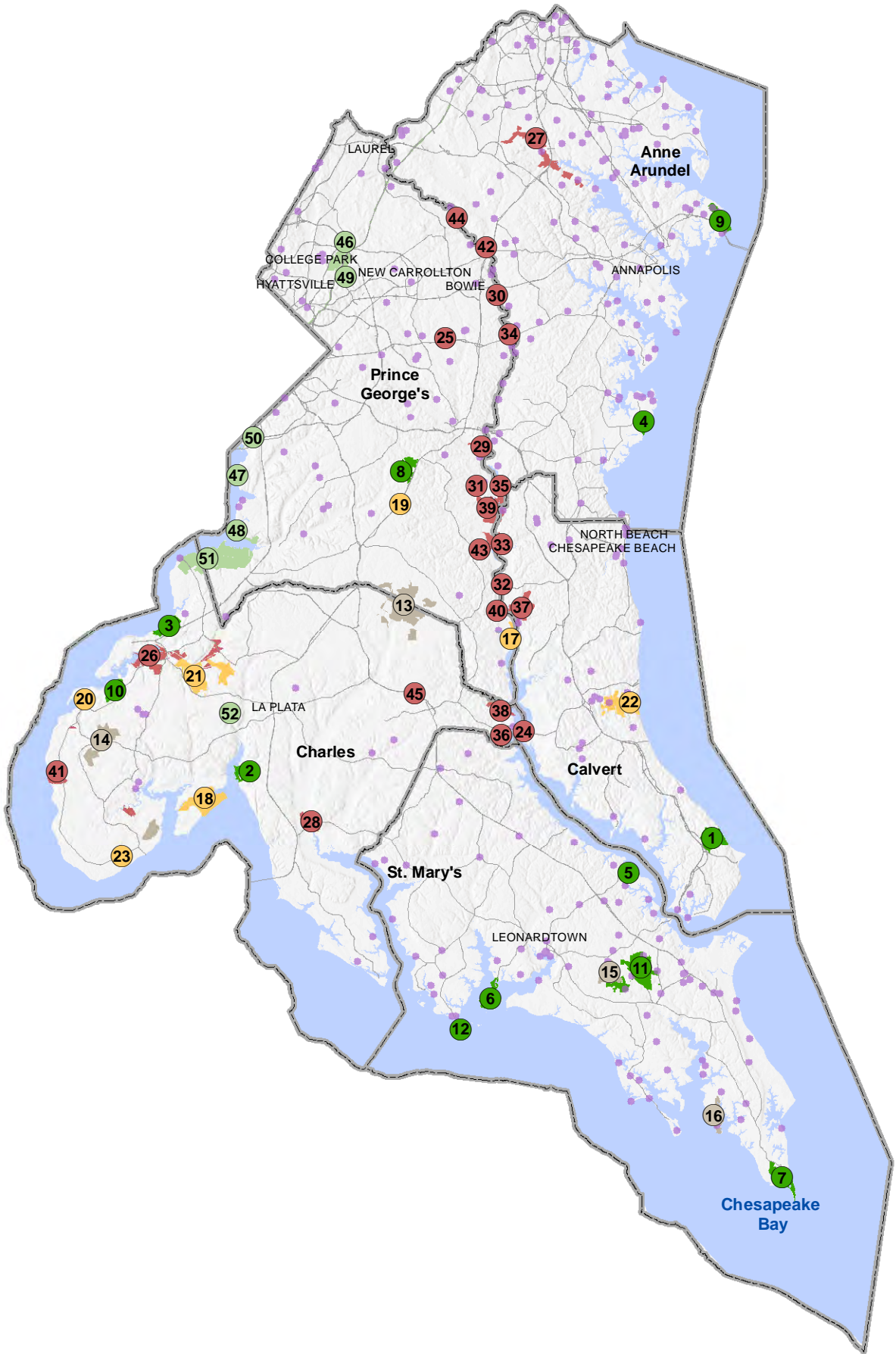
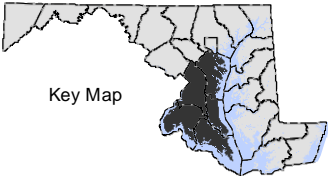
Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

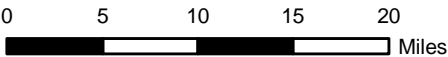


The Southern Service Region is the second most populous of the Department’s service regions and includes Anne Arundel, Calvert, Charles, Prince George’s and St. Mary’s counties. All of these counties include waterfront areas on the Chesapeake Bay and/or Potomac River. Roughly 30% of the statewide population lives in the Southern Service Region. The landscape of the area includes large quantities of working forests and agricultural lands, stream valleys, wetlands and coastline. The Department of Natural Resources manages 46,000 acres of parks, forests, and other land units that conserve the natural landscape and provide outdoor recreation opportunities. Sandy Point State Park in Anne Arundel County provides the largest and most popular public swimming beach on the Chesapeake Bay. The Park is a short drive from the City of Baltimore and Annapolis, the State’s capital.

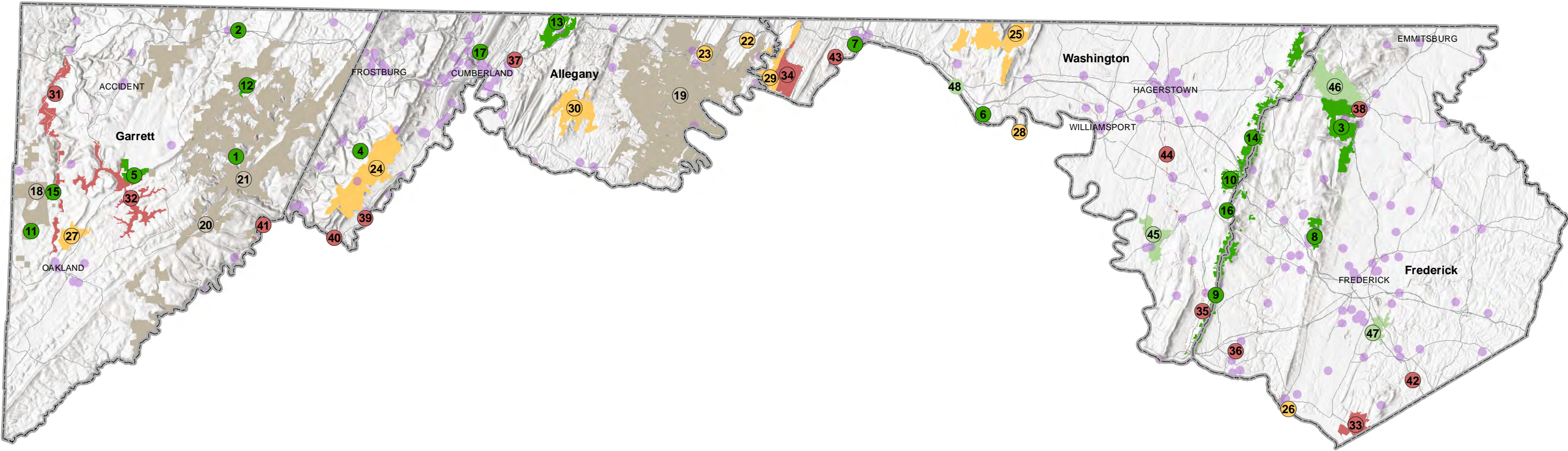
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4: Western Region Inventory



The Western Service Region includes Allegany, Frederick, Garrett and Washington counties. The Department of Natural Resources manages over 190,000 acres of conservation and outdoor recreation land in Western Maryland, the most acreage in any single service region. The landscape of the region is characterized by forested hills, river valleys and Appalachian and Blue Ridge Mountains. The Western region is home to more than 20 state parks, forests, and natural resource, wildlife and environmental management areas. The Western Maryland Rail Trail, 40 miles of the Appalachian Trail and two national battlefields (Antietam and Monocacy National Battlefields) are also located in the region.

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 GREEN RIDGE SF
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 MONOCACY NRMA
- 34 WOODMONT NRMA
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

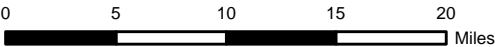
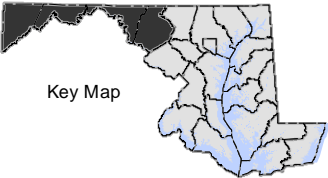
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

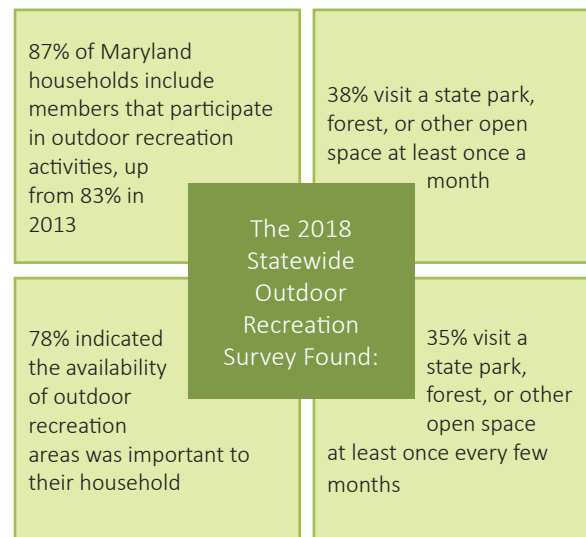
SP	State Park
SF	State Forest
WMA	Wildlife Management Area
NEA	Natural Environment Area
NRMA	Natural Resource Management Area
PFA	Public Fishing Area



B. KNOWN USAGE AND VISITATION

Marylanders love getting outside for fun, fitness, leisure, and enrichment. The state's diverse system of publicly accessible parks and open space areas provide residents and visitors with a variety of year-round outdoor, natural resource-based recreation opportunities. Many of the sites around Maryland offering public outdoor recreation opportunities are open for free, unstructured use and unmonitored access, so it is not possible to quantify total usage statewide with certainty. However, the National Park Service, the Maryland Department of Natural Resources, and local agencies do monitor and gauge visitation to parks and outdoor recreation sites to the highest degree feasible through visitor counts, admission figures, program registrations, and facility rentals. Based on data tracked by these agencies, as of 2017, visitation to public outdoor recreation sites in Maryland easily exceeded 20 million visitors annually. In 2017, National Parks in Maryland welcomed 6.7 million visitors, Maryland State Parks welcomed 14 million visitors, and local jurisdictions are presumed to have conservatively welcomed millions of additional outdoor recreators to local parks and open spaces. More information about visitation at local parks can be found in the [2017 Local Preservation, Park, and Recreation Plans](#).¹⁰

In addition to figures from public outdoor recreation providers, results of the 2018 Statewide Outdoor Recreation Survey indicated that the vast majority of Marylanders participate in outdoor recreation activities. The survey found that nearly 9 out of 10 (87%) respondents or members of their household participate in outdoor recreation activities. Survey results are further reviewed in Section III: Research and Trends and a full survey report is included in [Appendix B](#).



C. KEY PROGRAMS AND POLICIES GUIDING LAND CONSERVATION

Land Conservation and Outdoor Recreation Go Hand-in-Hand in Maryland

Marylanders' strong conservation philosophy is at the heart of the bountiful, diverse natural resources and exceptional outdoor experiences found in the state's system of public open spaces and park lands. People recognize the tremendous and diverse values derived from ecosystem services that Maryland's land and water provide, such as forests cleaning the air, wetlands cleaning pollutants from water, and a healthy Chesapeake Bay providing fish to



National Parks

6.7 million visitors in Maryland in 2017



Maryland State Parks

14 million visitors in 2017



Local Jurisdictions

Millions of annual visitors cumulatively

¹⁰ dnr.maryland.gov/land/Pages/Stewardship/2017-Draft_County-LPRP.aspx

eat. At the center of sustaining this legacy are Maryland's land conservation, outdoor recreation, and environmental education programs. Statewide programs focus on natural resource land conservation to directly support outdoor recreation by preserving and providing public access to the greenspace and natural landscapes on which outdoor activities are dependent.

"When ecosystem services are lost, they must be replaced through restoration or with manmade alternatives, or the public must do without those benefits. If they are not replaced, we will eventually suffer the consequences, be it through human health impacts due to poor air or water quality or a decrease in opportunities to enjoy a healthy ecosystem through wildlife watching, hunting, or fishing. In both of those cases there are real consequences to both our quality of life and economy in Maryland."

Department of Natural Resources Report: Accounting for Maryland's Ecosystem Services: Integrating the Value of Nature into Decision Making: dnr.maryland.gov/ccs/Documents/AMESreportFinal_MDDNR.pdf



Conservation Jobs Corps
Photo courtesy of Fred Banks, Conservation Jobs Corps Director

Maryland's Land Conservation Programs

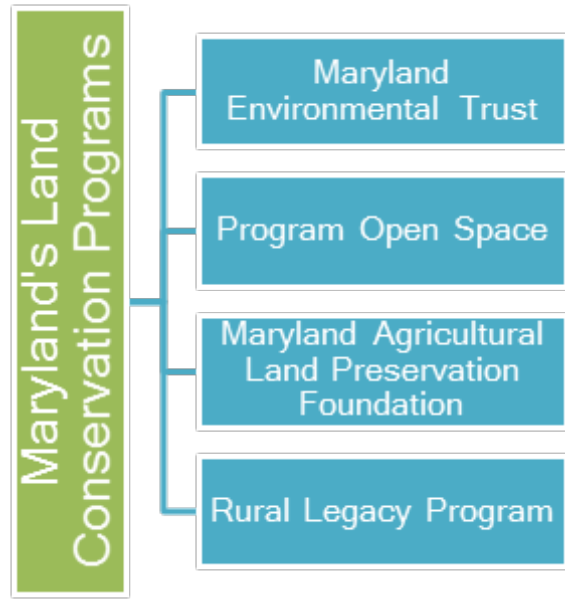
Major state-funded land conservation programs operate throughout Maryland to protect natural resources, farmland, and recreational open space. Each of these programs has a unique conservation objective and strategy. These conservation tools are complementary and, when stitched together much like a "conservation quilt," have resulted in large scale landscape protection and the conservation of many valuable rural landscapes composed of intermingled farms, forests, wetlands, and meadows. Each program is flexible enough to respond to new initiatives in land conservation to ensure that the benefits of natural lands continue to enrich the lives of future generations. Some of these programs conserve private land through easements, meaning that the land remains private, but is protected from development, while some lands are purchased and owned by the state for public recreation or specific resource management objectives.

Statewide strategic land conservation rests on several fundamental guiding principles:

- I. Objective and transparent conservation criteria need to be established in order to ensure that limited conservation funding is meeting the intended conservation goals.
- II. Conservation approaches, such as easement and acquisition options, creative financing, partnership agreements, and other tools, need to be diverse in order to meet the interests of landowners and should be nimble enough to quickly take advantage of new opportunities.
- III. Adaptive program administration provides the means to use the power of land conservation as a way to incorporate emerging conservation standards and strengthen the connection between community values and the public benefits provided by nature and open space.

Acres Conserved by State Land Conservation Programs

As of 2017, the efforts of state, local, and federal agencies and private land conservancies have protected approximately of 1.6 million acres of open space in Maryland. In general, the lands protected through Maryland Environmental Trust, Rural Legacy and Maryland Agricultural Land Preservation Foundation are under easement, while Program Open Space lands are typically owned by the Department of Natural Resources and local governments. About 25% of Maryland's 6,256,000 land acres are protected. Of this total, 929,000 acres have been protected through the actions of the state programs described as follows. **Figure 1** illustrates the rate of activity between 2014 and 2018 (the period of time since the completion of the last Land Preservation and Recreation Plan) and compares it to the historical grand totals for each program.

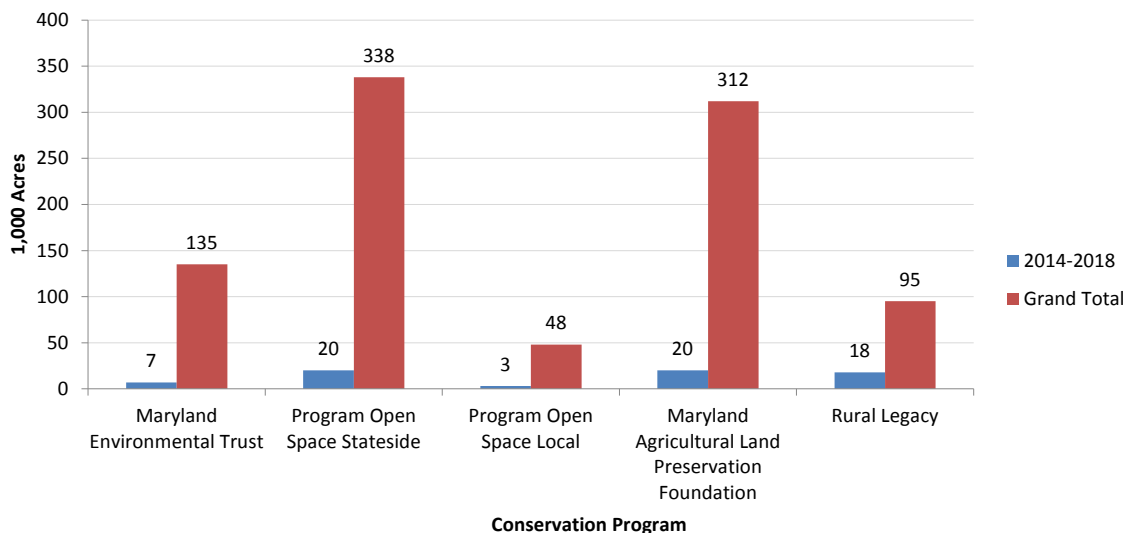


For the last 50+ years, the Maryland Environmental Trust focused its efforts on protecting large parcels of scenic open space in rural areas. While this remains part of its core mission, in 2012 Maryland Environmental Trust adopted a new policy for accepting conservation easements in urban areas, citing the considerable public benefits that can be achieved by protecting open space in densely developed areas. This policy has made it possible for Maryland Environmental Trust to partner with urban land trusts to help people connect to urban open space, parks, and community gardens and to enhance greenways and waterways.

Maryland Environmental Trust

Maryland Environmental Trust was created in 1967 to preserve open land, such as forests and farmland, through donated conservation easements. Landowners are willing to donate easements because of the tax benefits. The Trust is operated by the Maryland Department of Natural Resources and governed by a citizen Board of Trustees.

Figure 1: Open Space Acres Conserved by State Program



II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

The Maryland Environmental Trust can now co-hold a conservation easement on an urban property if it possesses significant environmental and/or public benefit.

Program Open Space

Program Open Space¹¹ was established in 1969 as the first state conservation program in the nation with legislatively mandated dedicated funding. Funding is generated through a real estate transfer tax to ensure that funding for open space land conservation keeps pace with the rate of land development. Program Open Space is administered by the Department of Natural Resources and exemplifies Maryland's long term commitment to conserving natural resources while providing exceptional outdoor recreation opportunities for its citizens. Program Open Space funding is administered through a local¹² and stateside¹³ program.

Program Open Space Stateside

Every property proposed for conservation through Program Open Space Stateside is initially evaluated for its ecological value and public access and recreation opportunities. This is accomplished through a desktop analysis that results in a scorecard based on a 100 point scale; half of the weight reflects ecological value (Land Section), and the other half reflects public access and recreational benefits (People Section) as described below:

- i. The property is an important in-holding or adjacent parcel that will address important, long term management concerns for an existing land management unit of the Department of Natural Resources.
- ii. The property would provide exceptionally high value resource-based recreation, such as a new state park or recreational area that could provide a new public beach, water access in an access-limited area, or a priority trail connection.

- iii. Conservation of the natural features of the property would provide resiliency to climate change impacts.
- iv. The property has exceptional educational, cultural, or historical value.

Proposed acquisitions are further evaluated by the Department of Natural Resources Stewardship Review Team. The Stewardship Teams include representatives from various disciplines within the Department, and allow a comprehensive, Department-wide look at potential acquisitions, which reflect on the ground expert knowledge of natural resource and public land management needs. The Stewardship Team also solicits feedback from private land conservation stakeholders, other State agencies, and local governments to best ensure wide support for potential acquisitions. Both the Program Open Space Scorecard and the Stewardship Review process embody the criteria and values described in the Maryland Land Preservation and Recreation Plan and ensure consistency with the plan.

Property:	County:	Final Score
Example		89.5
Map / Parcel:		
In Targeted Ecological Area? Yes		
Land: Ecological Value (Total available points = 85, capped at 50)		
A. Wildlife Habitat Connectivity (0 - 10 points)	4.7	
B. Rare Species (0 - 10 points)	0	
C. Support of Aquatic Life (0 - 10 points)	3	
D. Forests Important for Water Quality Protection (0 - 10 points)	5.8	
E. In a Targeted Ecological Area (TEA) (25 points)	25	
F. Restoration Opportunity (0 - 10 points)	0	
G. Climate Change Adaptation: Future Wetland Habitat (0 - 10 points)	0	
Pre-cap score:		38.5
Capped at:		50.0
Final subtotal score:		38.5
People: Enhancing Public Access and Recreational Opportunities (Total available points = 85, capped at 50)		
A. Creation of New Opportunity (0 - 40 points) - If yes, project only eligible for additional points in D, E, and F		
B. Expansion/Connection of Existing Recreational Opportunity (0 - 25 points)	20	
C. Land Management: Inholding or Adjacency of Existing Protected Area (0 - 40 points)	35	
D. Buffer to Existing Recreational Lands/Large Landscape Protection (0 - 25 points)		
E. Coastal Community Resiliency to Climate Change Impacts (0 - 10 points)	0	
F. Historic or Cultural Importance (0 - 10 points)	0	
Pre-cap score:		55
Capped at:		50
Final subtotal score:		50.0
Final Score: Total of Land + People (Maximum: 100 points)		88.5

¹¹ dnr.maryland.gov/land/Pages/ProgramOpenSpace/home.aspx

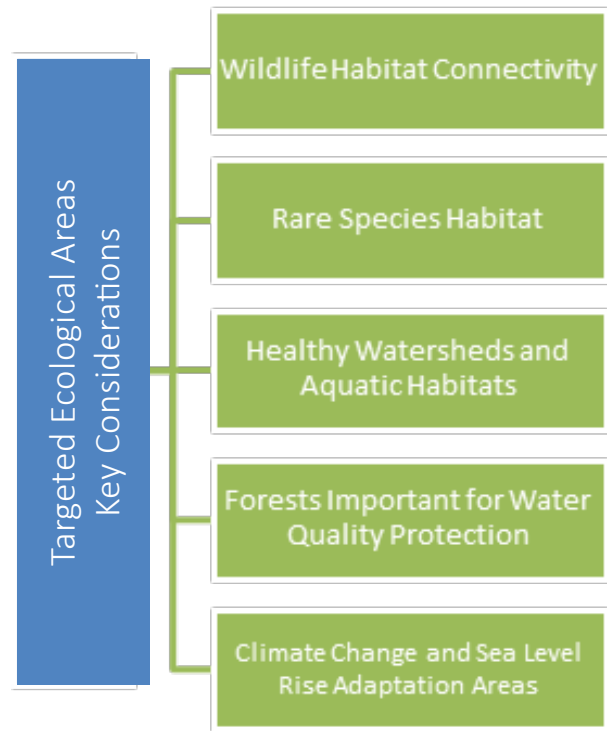
¹² dnr.maryland.gov/land/Pages/ProgramOpenSpace/home.aspx

¹³ dnr.maryland.gov/land/Pages/ProgramOpenSpace/Program-Open-Space-Stateside-Targeting.aspx

Central to the Department of Natural Resources' effort to prioritize land conservation initiatives and funding is a mapping tool that identifies Targeted Ecological Areas, the "best of the best" of Maryland's natural landscapes and sensitive ecological areas. These lands support the rich natural heritage and biodiversity that characterizes the state and provide important environmental services, including having clean water and air, flood and coastal hazards protection, recreational and commercial fishing, wood products, forestry, ecotourism, and more. The mapping tool draws upon the results of 30+ years of Department research, analysis and mapping of five overarching environmental considerations that provide ecosystem services on which Marylanders depend.

I. Wildlife Habitat Connectivity

Large areas of forests and wetlands that are connected to each other through wildlife corridors are critical for maintaining high quality wildlife habitats. The Green Infrastructure Assessment identifies a statewide network of hubs and corridors. Hubs are composed of large blocks of forests and wetlands. These areas are becoming rare, as development fragments these large expanses of habitat into smaller and smaller pieces. As habitats are diminished, many species that require large forested areas will decline or be lost altogether. Connectivity between hubs is provided by corridors, which act like habitat highways. Corridors provide the means for plants and animals to disperse from one habitat to another. More information can be found online at Maryland's Green Infrastructure Assessment website.¹⁴



Prothonotary Warbler photo by George Jett

¹⁴ dnr.maryland.gov/land/Pages/Green-Infrastructure.aspx

II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

II. Rare Species Habitat

Maryland's wildlife and rare species habitats have been specifically identified for their importance in sustaining the state's rich biodiversity. Specific habitat areas have been identified that support:

- Rare, threatened, and endangered species
- High-quality plant and animal communities
- Species of greatest conservation need
- Areas of high wildlife concentration
- Important habitats needed for wildlife migration

These areas have been mapped and prioritized through the Department of Natural Resources BioNet initiative. More detail on BioNet can be found online.¹⁵

III. Support of Aquatic Life Through Healthy Watersheds

As a coastal state, Maryland places a high priority on conserving the functions and values of coastal and tidal ecosystems. The Blue Infrastructure Assessment¹⁶ has identified specific shoreline and watershed areas that provide high quality coast habitat and are important for supporting productive shellfish beds and anadromous fisheries spawning and nursery habitats. These areas are critical for supporting commercially and recreationally viable populations of striped bass, shad, herring, and perch. A convincing and mounting body of evidence proves that changes in land use, particularly to more developed and paved conditions, have significant detrimental effects on fish populations.

The Department of Natural Resources Fisheries Habitat and Ecosystem Program¹⁷ works to understand how habitat changes, especially urbanization, impact the fisheries of the Chesapeake Bay.

A series of non-tidal stream resource assessments has identified key watersheds that have been elevated to priorities for targeted land conservation. More information can be found on non-tidal stream health and their relationship to aquatic biodiversity on the Department's stream health website.

IV. Forests are Important for Water Quality Protection

Forested areas in Maryland provide important habitat for species, support biodiversity, and are critical for curbing nutrient and sediment pollution of streams, rivers, water bodies, and other coastal areas. Not all forests are created equal in providing this water quality function. Some forests, particularly those on steep slopes, along streams, or in wetland areas, provide exceptional pollution prevention benefits and receive conservation priority. Maryland's Forests for Healthy Watersheds website¹⁸ provides additional information.

V. Climate Change and Sea Level Rise Adaptation Areas

Maryland's Commission on Climate Change¹⁹ estimates that certain parts of Maryland's shorelines could see up to a two-foot increase in sea level (over 2000 levels) by 2050 and possibly more than four feet by 2100. Land conservation can play a role in maintaining healthy coastal wetlands that provide valuable habitat for plants, animals and fisheries, as well as buffering coastal communities from the impacts of coastal flooding. As sea level rises, wetlands along the coastline may move landward in response. Conservation efforts should be focused on high priority wetland adaptation areas that have been identified as potential future wetland habitats. These areas can provide migration or transition zones for wetlands to move landward as sea levels rise. The Chesapeake and Coastal Services website²⁰ provides additional information on climate change and coastal conservation work of the Department of Natural Resources.

¹⁵ dnr.maryland.gov/wildlife/Documents/BIONET_FactSheet.pdf

¹⁶ dnr.maryland.gov/ccs/pages/bi.aspx

¹⁷ dnr.maryland.gov/fisheries/Pages/FHEP/index.aspx

¹⁸ dnr.maryland.gov/forests/Pages/programapps/wbfm.aspx

¹⁹ mde.maryland.gov/programs/Air/ClimateChange/MCCC/Publications/FactSheet4SeaLevelRise.pdf

²⁰ dnr.maryland.gov/ccs/Pages/habitats_slr.aspx

The Targeted Ecological Areas map was refined by removing land along the coast likely to be submerged by sea level rise in the near future to avoid investing in conserving land likely to be underwater in the near future.

The Targeted Ecological Areas interactive map²¹ is a tool that helps land trusts, conservancy organizations, other government programs, and the public identify cooperative projects that meet Program Open Space Stateside ecological criteria. Local governments can identify areas suitable for resource conservation zoning that complements state land conservation investments.

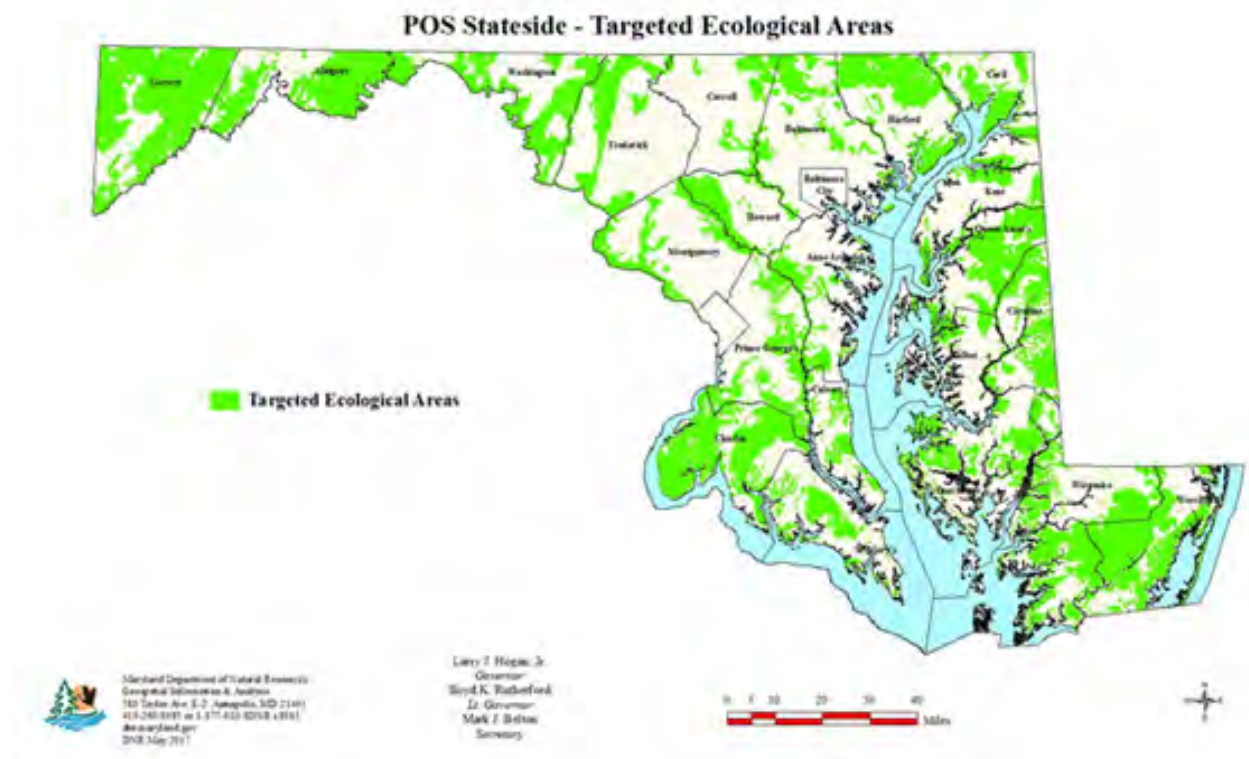
The process also ensures transparency and accountability by tracking the location of all state funded conservation projects and the funding amount approved by the Board of Public Works. As of 2018, users can now access an innovative “do-it-yourself” parcel evaluation tool that creates a conservation benefits assessment report card for every parcel in the State. This report card rates parcels on the unique ecological benefits provided by land and water resources and the capacity

of natural lands to provide coastal resiliency by protecting communities from flooding, storms, and erosion. The economic value of services provided by nature, such as filtering pollution and producing clean air and water, are calculated through the report card's Ecosystem Services Assessment.²²

Wetlands Priority Component

Targeted Ecological Areas include high value wetland areas for conservation action based on their:

- Wildlife and rare species habitat value
- Importance for protecting water quality and maintaining biodiversity
- Role in supporting tidal fisheries production
- Protection of coastal and floodplain areas from flooding associated with extreme storm events and rising sea level
- Value in facilitating adaptation to a changing climate and rising sea level



²¹ geodata.md.gov/greenprint/

²² dnr.maryland.gov/ccs/Pages/Ecosystem-Services.aspx

II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

The Emergency Wetlands Resources Act of 1986 provides for the use of Land and Water Conservation Funds for the acquisition of wetlands, provided that the State Comprehensive Outdoor Recreation Plan (this plan) contains or references a wetland priority component. At a minimum, the wetland priority component must meet the following four criteria.

1. Be consistent with the National Wetlands Priority Conservation Plan,²³ prepared by the U.S. Fish and Wildlife Service

The primary purpose of the National Wetlands Priority Conservation Plan is to assist decision makers in focusing their acquisition efforts on the most important, scarce, and vulnerable wetlands in the nation. Targeted Ecological Areas place a priority on those wetland types that provide an exceptionally high degree of public benefit based on rarity, biodiversity support, and maintenance of water quality, protection from flooding, coastal storm surge and sea level rise, and provision of passive outdoor recreational uses such as hiking, paddle boarding, and birding.

2. Provide evidence of consultation with the state agency responsible for fish and wildlife resources

The Department of Natural Resources is the agency responsible for Maryland's fish and wildlife resources. Identification of Targeted Ecological Areas relies heavily on the wetland assessment and prioritization efforts that are described in the 2015 Maryland State Wildlife Action Plan.²⁴ The

plan outlines strategic conservation approaches for wildlife and wildlife habitats and is required by the U.S. Fish and Wildlife Service as a condition for the continuation of State Wildlife Grant funding. Wildlife Species of Greatest Conservation Need and their key wildlife habitats, many of which are wetland habitats, are identified as a strategic conservation priority.

3. Contain a listing of those wetland types which should receive priority for the conservation of fish and wildlife resources

The following table identifies the acreage of all wetlands identified as a conservation priority for fish and wildlife resources. The following table is organized by wetland type which follows the National Wetland Inventory²⁵ classification system of wetland habitats at the system level. Wetland types relevant to land conservation include 1) Estuarine wetlands, which are the salt and brackish marshes and non-vegetated tidal flats, and 2) Palustrine wetlands, which are freshwater wetlands that are often characterized by the type of vegetation they support (forested, scrub shrub, and emergent). Sixty-five percent (65%) of the freshwater wetlands (palustrine) in Maryland have been identified as a conservation priority, while only two percent of all estuarine wetlands have been similarly ranked. The difference lies in the fact that many of the estuarine wetland habitats are unvegetated tidal flats or have been eliminated from the Targeted Ecological Areas because these areas are likely to be submerged as sea level rises.

Table 1: Wetland Types and Acreage

Wetland Type	Acres Statewide	% Acres within TARGETED ECOLOGICAL AREAS	TARGETED ECOLOGICAL AREAS Acres Unprotected	TARGETED ECOLOGICAL AREAS Acres Protected
Estuarine	231,405	9.1	12,794	8,271
Palustrine	407,643	65.2	164,789	100,813

Data source: Maryland Department of Natural Resources Wetlands Survey (1988-1995) Total acres of estuarine wetlands are significantly lower than in the 2014 Land Preservation and Recreation Plan due to the previous erroneous inclusion of large areas of open water in the main stem of the Chesapeake Bay and its tributaries in the analysis.

²³ digitalmedia.fws.gov/cdm/ref/collection/document/id/1356

²⁴ dnr.maryland.gov/wildlife/Pages/plants_wildlife/SWAP_home.aspx

²⁵ Tiner, R.W., and D.G. Burke. 1995. Wetlands of Maryland. U.S. Fish and Wildlife Service, Ecological Services, Region 5, Hadley, MA and Maryland Department of Natural Resources, Annapolis, MD. Cooperative publication. 193 pp. plus. Appendices

4. Consider outdoor recreation opportunities associated with its wetland resources for meeting the State's public outdoor recreation needs

Every property considered for acquisition by the Department of Natural Resources must undergo an internal stewardship review. The opportunity for public access and the provision of outdoor recreational experiences are two factors considered in the stewardship review. The presence of high-quality wetlands is rated highly because they support superb opportunities for wildlife viewing.

Program Open Space – Local

Local Program Open Space provides financial and technical assistance to local subdivisions for the planning, acquisition, and/or development of recreation land or open space areas. Priorities for funding are established by local Land Preservation, Parks, and Recreation Plans and annual funding requests. More than 6,000 park and conservation area projects have been assisted through Program Open Space local grants.

Figure 2, on the following page, contains a breakdown of future costs for land acquisition, facility development, and facility rehabilitation by county.

Maryland Agricultural Land Preservation Foundation

The Maryland Agricultural Land Preservation Foundation²⁶ was established in 1977 and is administered by the Maryland Department of Agriculture, a Board of Trustees, and by county agricultural preservation programs. Board members include the State Comptroller, Treasurer, Secretaries of the Departments of Agriculture and Planning, and nine members appointed by the Governor representing the Maryland Farm Bureau, Grange, Agricultural Commission, Young Farmers Advisory Board, and the state's forestry industry. Partnerships between the state, local agency administrators, and advisory boards is key to the success of farmland conservation efforts of the Maryland Agricultural Land Preservation

Foundation. Each county has a designated program administrator and liaison between the local agricultural community, county government, and Maryland Agricultural Land Preservation Foundation. County program administrators also monitor easement properties and help landowners navigate the easement process.

Rural Legacy Program

The Rural Legacy Program²⁷ was established 1997 to discourage sprawl development and conserve rural landscapes. This grassroots program administered by the Department of Natural Resources partners with local governments and land trusts to work with landowners within designated Rural Legacy Areas to secure conservation easements to preserve agricultural and forested open space areas.

The Rural Legacy Program compensates landowners for extinguishing development rights and establishing best management practices such as stream buffers, soil, and water quality plans and forest stewardship plans to preserve the rural character of the easement area. The Rural Legacy Program is funded with state property transfer tax revenues and General Obligation bonds.

Rural Legacy Areas are evaluated for the following:

- 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 historical and cultural resources proposed for protection
- The economic value of the resource-based industries or services proposed for protection through land conservation, such as agriculture, forestry, tourism, and recreation

²⁶ mda.maryland.gov/malpf/Pages/default.aspx

²⁷ dnr.maryland.gov/land/Pages/RuralLegacy/home.aspx

Figure 2: County Level Capital Improvement Plans from County Land Preservation, Parks, and Recreation Plans

County LPPRP Capital Improvement Plans

	Short Term			Medium Term			Long Term		
	Acquisition	Development	Rehab	Acquisition	Development	Rehab	Acquisition	Development	Rehab
Allegany	\$0	\$2,257,622	\$0	\$0	\$0	\$0			
Anne Arundel	\$13,250,000	\$5,748,000	\$0	\$13,000,000	\$24,000,000	\$0	\$11,000,000	\$22,750,000	\$0
Baltimore City	\$0	\$105,334,000	\$18,700,000						
Baltimore County	\$2,100,000	\$5,030,000	\$10,312,711	\$4,000,000	\$5,500,000	\$13,150,000			
Calvert	\$0	\$11,371,150	\$11,371,150						
Caroline	\$0	\$951,000	\$729,000	\$250,000	\$2,060,000	\$760,000	\$390,000	\$3,355,000	\$965,000
Carroll	\$400,000	\$5,596,976	\$4,645,370						
Cecil	\$1,000,000	\$3,500,000	\$0						
Charles	\$1,003,000	\$1,705,000	\$1,599,000						
Dorchester	\$48,400	\$720,500	\$330,000						
Frederick	\$1,000,000	\$30,996,000	\$4,515,459						
Garrett	\$370,000	\$3,530,150	\$1,104,425						
Harford	\$2,585,000	\$12,794,000	\$4,075,000	\$2,550,000	\$28,140,000	\$1,380,000			
Howard	\$3,500,000	\$3,000,000	\$5,000,000	\$43,000,000	\$39,600,000	\$117,300,000	\$15,500,000	\$14,000,000	\$19,500,000
Kent	\$0	\$0	\$292,300	\$0	\$490,000	\$305,000	\$0	\$575,000	\$100,000
Montgomery	\$69,100,000	\$0	\$0	\$43,900,000	\$0	\$0	\$71,000,000	\$0	\$0
Prince George's	\$4,542,000	\$23,860,000	\$11,330,000	\$16,432,000	\$22,050,000	\$29,300,000	\$17,750,000	\$54,603,000	\$0
Queen Anne's	\$400,000	\$11,459,000	\$13,360,000	\$750,000	\$3,915,000	\$2,220,000	\$750,000	\$4,290,000	\$1,250,000
St. Mary's	\$2,000,000	\$12,774,000	\$9,155,000	\$0	\$36,903,000	\$1,500,000	\$3,200,000	\$11,600,000	\$1,000,000
Somerset	\$150,000	\$6,336,000	\$1,025,000	\$100,000	\$680,000	\$0	\$1,000,000	\$1,000,000	\$0
Talbot	\$0	\$4,566,000	\$0						
Washington	\$156,000	\$52,000	\$310,000	\$0	\$0	\$165,000	\$0	\$93,000	\$234,000
Wicomico	\$65,000	\$3,446,000	\$3,140,000	\$0	\$2,415,000	\$1,275,000			
Worcester	\$1,000,000	\$575,000	\$100,000	\$0	\$2,915,000	\$200,000	\$0	\$0	\$300,000
	\$102,669,400	\$255,602,398	\$101,094,415	\$123,982,000	\$168,668,000	\$167,555,000	\$120,590,000	\$112,266,000	\$23,349,000

Notes

Baltimore City: Combined Development/Rehabilitation totals placed in Development column.

Calvert: Annual totals divided equally between Development and Rehabilitation.

Dorchester: 150K of Development/Renovation placed in Renovation column.

Does not include cost of new pickup truck, mower.

Frederick: \$5,060,000 in Development/Rehabilitation split evenly between the two categories.

Kent: Data is from draft plan.

Montgomery: The LPPRP contains an extensive list of capital improvements but does not provide costs

Washington: Ag Center Land Acquisition/Development listed in Acquisition column.

The Program offers financial incentives that encourage land conservation by providing farmers and landowners an option to sell or donate their development rights and implement resource management plans while still retaining ownership of their land. These landowners can submit applications for easement grant funding. A Rural Legacy Advisory Committee reviews all applications for annual easement grant funding, as well as the creation of new Rural Legacy Areas or a requested change to existing Rural Legacy Areas. The Committee makes recommendations to the Rural Legacy Board, which in turn reviews the recommendations for the Board of Public Works. The Board of Public Works makes the final decisions regarding designating or altering Rural Legacy Areas and allocating annual grants awards to each Rural Legacy Area.

Forest Legacy Program

The Forest Legacy Program is a federal program administered by the U.S. Forest Service, implemented in Maryland by the Department of Natural Resources. Forest Legacy was established to protect forests for public benefit and to encourage sustainable forest management and strong forest product markets. The Department of Natural Resources works with landowners to purchase conservation easements on high quality private forests, leveraging federal and non-federal funds. Projects are ranked for funding at the federal level based on ecological, economic, recreational, and other importance values, threat of development, and strategic value in a larger conservation strategy or network of protected lands. Through the Forest Legacy Program, over 2,000 acres of nationally important forests have been permanently protected in Maryland, preserving threatened and endangered species habitat, providing clean water, and promoting local forestry and outdoor industries.

Land and Water Conservation Fund

The Land and Water Conservation Fund²⁸ Act of 1965 established a federally funded program to provide 50/50 matching grants to state and local governments for the purpose of acquiring and/or developing public outdoor recreational areas and facilities. The program is administered nationally by the National Park Service and receives funding through revenues generated from federal offshore oil and gas leases. The Land and Water Conservation Fund is intended to create and maintain a nationwide legacy of quality public outdoor recreational resources as well as to stimulate non-federal investments in the purchase, development, maintenance, and protection of these highly valued outdoor recreational areas. Per section 6(f)(3) of the Land and Water Conservation Fund Act, "No property acquired or developed with assistance under this section shall, without the approval of the Secretary of the Department of the Interior, be converted to other than public outdoor recreation uses."

Maryland's participation in the Land and Water Conservation Fund program is managed by the Department of Natural Resources designated State Liaison Officer and guided by a Statewide Outdoor Recreation Plan (the Land Preservation and Recreation Plan) that is updated every five years. Projects utilizing Land and Water Conservation Fund monies must reflect the state's policies and priorities outlined in the Land Preservation and Recreation Plan. Since its inception, the Land and Water Conservation Fund program has funded over 400 acquisition and development, state, and local projects, throughout Maryland. An example of a recent Land and Water Conservation Fund project in

Maryland is the development of the Harriet Tubman Underground Railroad State Park in Cambridge, Maryland.



Credit: Maryland Department of Natural Resources

²⁸ [nps.gov/subjects/lwcf/index.htm](https://www.nps.gov/subjects/lwcf/index.htm)

D. RESPONDING TO CONTEMPORARY ISSUES IMPACTING LAND CONSERVATION IN MARYLAND

Public land conservation efforts in Maryland are influenced by relevant contemporary issues and statewide initiatives. Several major items that impact statewide investment in land conservation and open space conservation are addressed in the following section.

Educating and Engaging Youth in Nature – Maryland's Project Green Classrooms

Current data and research have shown that today's children are spending less time outside. Whether due to over scheduling, lack of access, or competing screen time, today's families are spending less time connected to their surrounding natural areas. A 2015 study by Childwise,²⁹ the average American child spends five to eight hours a day in front of a digital screen compared to three hours in 1995, often at the expense of unstructured play in nature.

Project Green Classrooms Mission:

To mobilize resources to ensure that Maryland's youth experience, understand, and learn to conserve the natural environment.

Project Green Classrooms Goals:

Goal 1: Co-locate Natural Areas with Active Areas

Identify and promote opportunities to co-locate natural areas or adding green infrastructure or interpretive features near active recreation and multi-use sites. Where feasible, adding features such as rain gardens, pollinator gardens, and nature trails at parks and public spaces can add interest and provide opportunities to allow "nature-shy" visitors to interact with nature in an approachable setting.

Goal 2: Create Community Connections

Plan for greenways, corridors, and trails that connect schools, residential areas and public buildings to green space, provide alternative transportation routes, and support a healthy, active lifestyle through thoughtful community design.

Goal 3: Use of parks as outdoor environmental education sites to support environmental literacy in the classroom

School districts and parks and recreation agencies should coordinate to further the use of public parks as outdoor environmental education sites for the benefit of students, teachers, and naturalists.

Goal 4: Support the use of Public Lands for outdoor learning

Support the use of public lands and parks for outdoor environmental education.

Goal 5: Establish Equitable Access to Parks and Green Space

Establish equitable access to parks and green space for children, especially those from communities that have historically had obstacles connecting to open nature spaces.

Goal 6: Coordinate with Partners to Maximize Health Benefits of Access to Public Lands

Initiate new, and improve existing, coordination and planning efforts with health initiatives to market outdoor recreation as integral to health and wellbeing.

²⁹ bbc.com/news/technology-32067158

At the same time, the Centers for Disease Control reports that 18.5% of all kids and teens in the U.S. are obese. This missing outdoor time can go a long way not only toward providing active time, but it is important for children's overall well-being. Along with Project Green Classroom goals and objectives, [Appendix A](#) includes state and local best practices and examples of how communities around Maryland have incorporated Project Green Classroom³⁰ recommendations into their multidisciplinary planning efforts.

Evidence suggests that nature exposure can improve attention, promote self-confidence, calmness, and other psychological aspects of health. Research published in *Environment and Behavior* has shown that access to nature acts as a buffer to these stresses, especially in children. To address this and other issues, the Maryland Partnership for Children in Nature was created in 2008 to ensure that all young Marylanders learn about their environment, connect with their natural world, and grow to become responsible stewards. In 2017 the state renewed this commitment by establishing Project Green Classrooms.



*2017 National Hunting and Fishing Day
Natural Resources Police*

Providing Timely and Relevant Public Information

The Maryland Department of Natural Resources Office of Communications is responsible for creating and deploying strategic communications and marketing messaging aimed at educating, engaging, and informing citizens, communities, and stakeholders.

The Office of Communications does this through a variety of traditional media and the growing number of new information distribution channels being offered digitally. They promote and educate the public about all the initiatives of the Department, through media management; news briefs; a monthly electronic email newsletter that reaches over 300,000 subscribers; content on the website (dnr.maryland.gov) that has 450,000 unique website visitors a month; social media platforms like Facebook, Twitter, Instagram, YouTube, and LinkedIn reaching 298,000 individuals; and a seasonal print magazine. The newsletters may be subscribed to by going to dnr.maryland.gov and typing in an email address on the home page. The Department of Natural Resources' social media channels are accessible from the dnr.maryland.gov home page. The Office of Communications also ensures that the Department of Natural Resources' messaging is distributed on other non-proprietary channels like preparing columns, editorials, letters, remarks, and speeches for distribution by other organizations.

Public awareness and transparency are also priorities of the Department of Natural Resources and are achieved through compliance with the Open Meetings Act, where interested parties are made aware of public meetings they may attend through an online calendar, and the Maryland Public Information Act, which allows people to request public documents through an online form.

³⁰ dnr.maryland.gov/pgc/Pages/default.aspx

Improving Equitable Access to Parks and Greenspace

Not all communities in Maryland have equal access to high quality public parks and open spaces or the benefits they provide. Research indicates that being active outdoors provides multiple individual and public benefits.

Recognizing the importance of exposure to nature, as well as potential barriers to participating in outdoor recreation, the Department of Natural Resources created the Park Equity Analysis³¹ to help identify communities lacking access to parks and natural areas. The GIS-based tool and associated mapped model identify and display levels of access to parks and open spaces. Park equity models also score levels of access, with higher scores indicating greater need for access to parks and open space to be improved. Factors included in the analysis include:

- High concentration of children under the age of 16, or high concentration of senior citizens over 65
- High concentration of populations below the poverty line
- High population density
- Low access to public park space (state, regional, and local)

The Park Equity Analysis can also be used in a number of ways to benefit the public:

- Identify areas in significant need of access to park space
- Help streamline green space funding programs
- Aid local partners in planning for green infrastructure and park and recreation development opportunities
- Help identify green space needs in school construction and public facility planning
- Be combined with other data layers such as health data for planning purposes

Two pilot projects were done in Prince George's County and Caroline County to develop a deeper look into how the tool can be used at a finer scale and incorporate local needs. In 2019, the Department of Natural Resources will be refreshing the tool with updated local park data, and the incorporation of health and community access data including the Maryland Environmental Justice Screen data.

Maryland Park Service: Es Mi Parque

The Es Mi Parque³² program was launched by the Maryland Department of Natural Resources in 2016 as a pilot project to improve customer service and reduce access barriers for the Hispanic community at state parks. By reaching children through environmental education programming and outreach activities, the Department helped bridge a gap in communicating with parents and other adults, all while showing the Hispanic community that careers in the natural resources fields are available across the state.

Further, the program showcased the diverse fishing opportunities offered throughout the state and educated the public about the water safety and recreational fishing regulations. Through partnerships with other state agencies, friends groups, bilingual volunteers, and outdoor industry partners, the Department of Natural Resources connected with families through fish identification games, interactions with Splash the Water Safety Dog and hands-on fishing demonstrations and lessons.



Es Mi Parque, Sandy Point State Park

³¹ dnr.maryland.gov/Pages/ParkEquity.aspx

³² news.maryland.gov/dnr/2017/06/21/es-mi-parque/

Healthy Parks Healthy People Initiative

The Maryland Park Service manages 75 state parks across 138,000 acres to conserve and protect the State's natural, historical, and cultural resources while providing nature-based recreation opportunities for 14 million people annually. The park system includes a multitude of outdoor recreation opportunities in scenic settings, from paddling and walking to biking and fishing. Park Ranger-led conservation programs reach over 220,000 visitors annually.

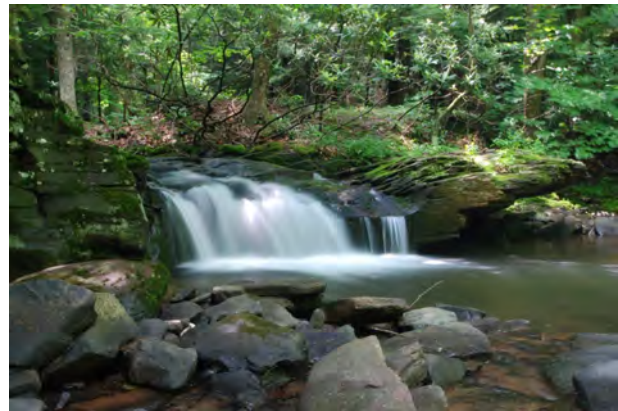
Healthy Parks Healthy People³³ is a program designed to promote physical activity in nature and the outdoors. The program encourages use of Maryland's parks to improve the health and well-being of community members that take part in fitness and wellness programs, either on their own or when referred by their doctor. Participating healthcare providers refer patients to the program in order to ensure that they are physically able to increase their level of physical activity and to ensure that the program would be beneficial and improve their health and well-being. Healthy Parks Healthy People connects people to parks by promoting physical activity, fostering society's understanding and appreciation for the life sustaining role of parks and natural areas, and creating the next generation of park stewards. Healthy Parks Healthy People programs have included yoga, paddle boarding, walking, hiking, biking, and more.

The overall goal of the program is to increase physical activity for community members in stress-relieving outdoor settings and providing diverse recreational opportunities for all levels of fitness.

Exercising outdoors in a beautiful park is a great way to relax and connect with nature. Following their participation in the Healthy Parks Healthy People program, patients are encouraged to continue with their exercise regime and add new activities that are available in the parks with the hope that the rates of chronic conditions such as obesity, hypertension, diabetes, and depression will decrease and that people will live longer and healthier lives. Prescriptions written by doctors to spend time in the outdoors can be a useful tool to help meet the objectives of Health Parks Healthy People.

Maryland Natural Areas Guide

Amid the rise of the modern conservation movement, the advent of wildlife magazines, bird clubs, and citizen science projects, a sophisticated outdoor recreation cohort has developed. This user group seeks a truly wild outdoor experience. They willingly travel internationally to rain forests and coral reefs, but they also recreate close to the urban centers where they live.



South Savage Mountain Natural Area (Dave Kayzak)



Yoga, Healthy Parks Healthy People programs

³³ dnr.maryland.gov/publiclands/Pages/HealthyParks.aspx

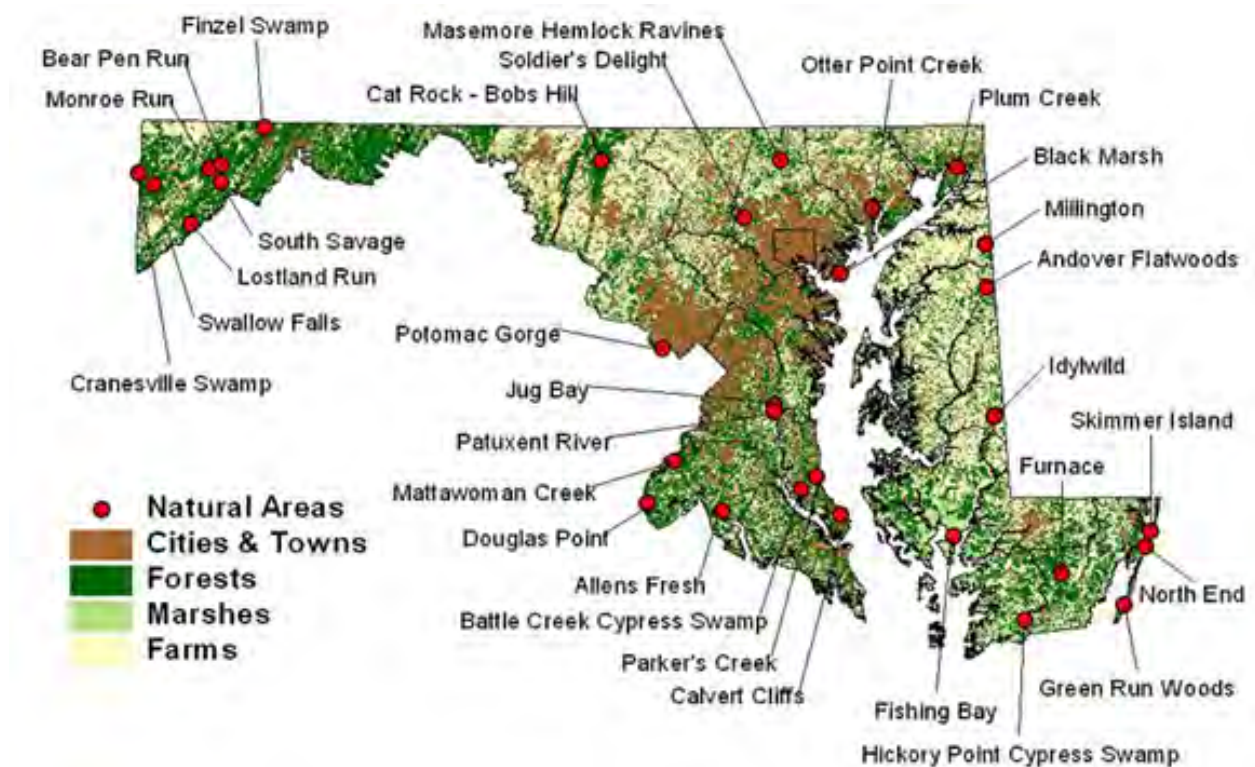
II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

In order to welcome these nature enthusiasts, the Maryland Department of Natural Resources created the Maryland Natural Areas Guide.³⁴ The Guide (**Figure 3**) allows nature seekers to find remnants of remaining wilderness and helps them experience the unique ecology and rare plants and animals that protected natural areas support. The goals of this effort are to identify and conserve these recognized natural areas for future generations while increasing public awareness of these special natural places. The great news is that Maryland has a wealth of ecologically unique areas which are embedded in the existing protected lands infrastructure. The conservation and interpretation of natural areas within state and locally-owned public lands enhance the user experience, increases visitation, and benefits local economies.

The unique natural areas in the Guide include public and private lands across the State of Maryland. Voluntary recognition as a Natural Area carries a commitment to sustainable management of a given area to conserve the natural features that the area was established to recognize and protect. In most cases, current management practices have maintained the exceptional natural features that distinguish these sites.

Natural Areas have always been an important and exciting part of Maryland's outdoor menu. By recognizing Natural Areas, interpreting the factors which make them special, and seeking their protection and sustainability, land managers can enrich the user experience while conserving our most vulnerable and precious wild places.

Figure 3: Maryland Natural Areas Guide



³⁴ dnr.maryland.gov/wildlife/Pages/NaturalAreas/home.aspx

Energy Development and Public Land Policy

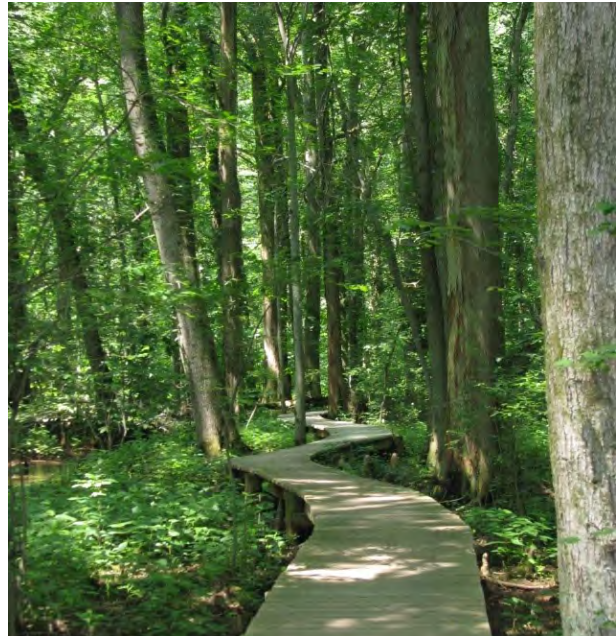
As with public lands across the nation, Maryland's public open spaces can provide opportunities that support energy development projects ranging from the installation of wind turbines and solar arrays to mineral extraction or natural gas production. As of 2017, hydraulic fracturing is not permitted in Maryland.

Over the past decade, statewide debates regarding the compatibility of energy projects on Maryland's public conservation and recreation lands led the Department of Natural Resources to adopt policies and practices that:

- I. Encourage location-appropriate, small-scale, non-commercial renewable energy development projects designed to help the Department meet on-site energy needs and increase operational sustainability.
- II. Prohibit the development of large-scale commercial wind power generation facilities on Department lands, as they are incompatible with the natural resource conservation and land stewardship objectives and contrary to programmatic goals of the state's land conservation programs.
- III. Establish a process for resolving severed and dormant mineral rights underlying existing state lands and created a framework for considering these issues within the Department's vetting of properties considered for conservation through state land acquisition and easement programs.

Finding Value in Ecosystem Services

The word "ecosystem" comes from the word "ecological" – meaning the relationship between plants, animals, the physical world, and humans – in a given environment or system. Ecosystems include forests, streams, mountain ridges, river banks, and wetlands, and provide free essential life supporting services to human beings. These ecosystem services provided by nature include keeping our air clean, purifying our waters, preventing pollution, and providing the raw materials to create jobs and a strong economy.



We have consistently undervalued and overused our natural capital and face a point in time where the quality of our environment is diminished. We must either repair the damages and prevent further loss, or face the consequences.

The lack of a consistent valuation framework for ecosystem services was determined to be a significant barrier to considering them in state decision making. The Maryland Department of Natural Resources initiated the Accounting for Maryland's Ecosystem Services framework to address this need. This effort compiles the best available science on how ecosystem services change across the state, both in their actual quantity, or supply, and in how that people benefit, or demand. Both of these components of ecosystem services have been mapped across the state for seven non-market ecosystem services, meaning services that are typically considered free benefits from ecosystems and not explicitly included when decisions are made. These services include nitrogen removal, carbon sequestration, air quality improvements, stormwater and flood prevention, surface water protection, groundwater recharge, and wildlife habitat/biodiversity.

II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

The maps of ecosystem services, methods, and results are summarized in a report that can be found on the Department's website.³⁵

State land conservation programs have explored options for considering ecosystem services in various ways. In addition to being made available to the public, the assessment was used to generate an ecosystem service report for the Stump Property as part of the purchase justification submitted to the Maryland Board of Public Works. The report helped to show that while the property had limited development potential, it had a high ecological value that was making real contributions to the well-being of Marylanders. The property was ultimately acquired. The Maryland Park Service has utilized the Accounting for Maryland's Ecosystem Services to help assess the appropriate compensation to address impacts to park lands. Compensation from these ecosystem services will go to management activities in the park, helping to compensate the public for the value that was lost by improving the park in other areas, including removal of invasive species.

Crediting Conservation and Growth Management

Land conservation and growth management has long been recognized as a Chesapeake Bay pollution prevention strategy, particularly if those lands are forested, exist as wetlands, or are maintained in agriculture under state of the art best management practices for nutrient and sediment pollution reduction. However, until now, the regional Chesapeake Bay Program, led by the U.S. Environmental Protection Agency, has not been able to develop a way to credit actions that maintain lands that provide a pollution prevention benefit. The Chesapeake Bay Program's Land Change Model was used to project land uses changes that are likely to occur by 2025, which is when the Bay jurisdictions have agreed to meet their Total Maximum Daily Load obligations. These projections are used to generate additional nutrient and sediment loads that must also be offset by a best management practice. The new

"Conservation Plus Best Management Practice" allows the jurisdictions to project how much and where they anticipate land conservation will occur and to also define growth management policies and regulations that may limit growth in certain areas. These Best Management Practices can be modeled against the projected land use changes. If a change in the spatial pattern and density of growth can be demonstrated, then a pollution reduction credit could be quantified. Maryland is in the early stages of developing its Conservation Plus Best Management Practice scenarios and sees this as a great opportunity to recognize the beneficial water quality benefits of land conservation.

Adapting to Climate Change

Maryland has the fourth longest tidal coastline in the continental United States and has experienced more than one foot of sea level rise over the last century. Since 1990, the sea level in the region has risen three to four times faster than the global average. Predictions issued by the Maryland Commission on Climate Change³⁶ estimate that Maryland's shorelines could see up to a two foot increase in sea level (over 2000 levels) by 2050 and possibly double that by 2100, with local land subsidence exacerbating the problem.



2018 State of the Coast by Stephen Badger | Office of Communications, Maryland Department of Natural Resources

³⁵ dnr.maryland.gov/Pages/maps.aspx

³⁶ mde.state.md.us/programs/Air/ClimateChange/MCCC/Pages/index.aspx

Maryland is addressing climate change and was one of the first in the country to develop a Climate Adaptation Plan³⁷ in 2008. In 2010, the Department adopted its own policy, Building Resilience to Climate Change.³⁸ The policy included a provision to guide investments in and management of land in order to better mitigate and adapt to climate change. As a result, the Department of Natural Resources has integrated climate change considerations into its land conservation programs. In 2014, a new state statute established the Coast Smart Council³⁹ within the Department of Natural Resources for the purposes of adopting specific design and planning criteria to address impacts associated with sea level rise and coastal flooding on sites of future Department capital projects.

Adaptive Land Management

Sea level rise models indicate that 68,700 acres of Department of Natural Resources managed lands are located under two feet of elevation, and vulnerable to inundation by 2050, with an additional 16,300 acres vulnerable by 2100. Currently, the Department of Natural Resources' land managers are seeing chronic flooding of access roads; heavy precipitation events flooding recreational use areas and damaging infrastructure; salt water intrusion on forest stands; downed trees; and damage from storms, coastal erosion, increased invasive species, and loss of coastal habitats threatening rare, threatened, and endangered species and the resilience of ecosystems. It is important for Department land managers to take a changing climate into account when developing long range plans and management strategies. Changing weather patterns, species distribution, storm events, tides, and sea levels will impact the resources as well as the user experience for visiting the lands. The following summarizes strategies that the State is employing to adapt to a changing environment for public lands management.

Coast Smart Construction Program

The Department has developed a Coast Smart Construction Program⁴⁰ that details specific construction guidelines that can provide adaptive capacity to infrastructure and buildings. All new construction undertaken by the department must conform with these guidelines.

Example projects include the Assateague State Park Nature Center Building, which was subject to periodic flooding, and sat five feet below the minimum first floor elevation necessary to meet flood hazard code regulations. It was at significant risk of major damage from a large storm event or hurricane. In order to mitigate impacts to the building, it was lifted, and raised five feet in elevation on new timber pilings. The Chesapeake Bay National Estuarine Research Reserve is working with the University of Maryland School of Architecture, to develop concept designs for the Monie Bay Field Station that adheres to Coast Smart Construction Guidelines, State building standards, and Energy Efficiency goals. The concept designs will not only inform the construction of the field station, but also provide a visual representation of the Coast Smart Construction guidelines.



*Assateague Nature Center
by Angela Baldwin | Maryland Park Service, Maryland
Department of Natural Resources*

³⁷ dnr.maryland.gov/climateresilience/Pages/adapting.aspx

³⁸ dnr.maryland.gov/climateresilience/Pages/adapting.aspx

³⁹ dnr.maryland.gov/climateresilience/Pages/cs_Council.aspx

⁴⁰ dnr.maryland.gov/climateresilience/Pages/cs_Council.aspx

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Green Infrastructure

The Department also utilizes green infrastructure and living shorelines wherever possible to manage stormwater and flooding, limit shoreline erosion, and support the resilience of coastal habitats. Coastal habitats can provide risk reduction benefits by reducing wave energy, stabilizing shorelines, and absorbing water. To demonstrate these benefits, the Department of Natural Resources is implementing coastal resiliency restoration projects. Design is underway for an approximately 2,500 linear foot living shoreline at Franklin Point State Park to strengthen the existing natural shoreline buffers, stabilize the peninsula, and address climate impacts. Department staff are partnering with the West/Rhode Riverkeeper to design the project and engage the adjacent Shady Side community about the protection benefits of coastal habitats. Alongside coastal protection benefits, these types of projects provide water quality benefits, habitat creation and enhancement, public access, and education opportunities.

With this in mind, the Maryland Park Service, working with the University of Maryland, completed an assessment of watershed issues driving these inland flooding events at one of the most frequently visited areas of Patapsco Valley State Park. Researchers completed an engineering study and developed management strategies for the Soapstone Branch of the Avalon area of the park. This is an area that has experienced significant flooding issues with the two historic storm events of 2016 and 2018, as well as impactful flooding when there is significant or flashy rainfall in the area. The extreme weather events have led to damaging debris being carried downstream and impacting a roadway tunnel, bridges, picnic shelters and other areas; however, more frequently occurring rain events have resulted in trail and parking access being cut off, access roads and paths flooding. This damage is not only an infrastructure management problem, but is resulting in risks to public safety as visitors, park managers, hikers, and other have been trapped in the area when the bridged roadway fills with stormwater.

Public Safety: Patapsco Valley State Park Case Study

As the climate changes, Maryland is working toward developing strategies to address inland climate resilience and reduce risk to people, property, and natural resources. Increased storms and flooding may impact the safety of our visitors and staff in some areas. If trees or debris resulting from storms block access, or in some cases, wash out fire roads or paths, staff may lose access areas to public lands making it difficult to provide emergency services, maintain areas, or provide public access.



The engineering study developed will establish a model for future work on inland climate assessments and management approaches. Future work may include developing notification systems for park users, relocation of recreational facilities, and identification of upstream stormwater and restoration projects to reduce flooding in storm events.

County-Level Adaptation

Many counties are also addressing climate change adaptation in their Local Land Preservation, Parks, and Recreation Plans. The 2017 St. Mary's County plan includes a discussion of planning for coastal resiliency and identifies past and future actions that the county has taken to address this issue. The plan includes real examples and future strategies to manage vulnerable properties, and protect public investment located on or near the shoreline.

“With numerous waterfront parks and facilities spread along the County’s 500+ miles of coastline, St. Mary’s County has undertaken measures in its capital planning and facility management of coastal resources that consider rising sea level and increased potential for storm damage and flooding of shoreline areas. Some practices put into use at public landings and waterfront assets include: 1) new piers are being constructed at higher elevations, and 2) the installation of floating docks where practical. Low impact development tools, such as rain-gardens and Bay-wise plantings, are being installed at coastal sites, including the Piney Point Lighthouse, to improve storm water management and flood control. In other areas, the County seeks to mitigate damage caused by flooding by removing inappropriate land uses, naturalizing flood prone areas, and installing a use/facility that is more appropriate to the site.”

This is a strong example of integrating climate resiliency into planning efforts by identifying areas vulnerable to coastal and inland flooding, minimizing impervious surface areas, and protecting and expanding buffers in these areas. Taking into account potential hazards on public lands can help to ensure waterways have capacity to respond to storm and flood events including infrastructure such as public access and road crossings. The Maryland Department of Natural Resources will account for and plan for climate change and sea level rise when planning the construction of new outdoor recreation facilities, especially those in vulnerable areas. The Department is planning to conduct a State Lands Climate Assessment. This vulnerability assessment of state recreational lands will utilize climate change related GIS data, infrastructure data, and ecological data to identify and understand vulnerabilities and impacts, including long-term impacts to recreational use, water access, infrastructure, and ecosystem management.

Maryland Outdoor Recreation Economic Commission

The Maryland Outdoor Recreation Economic Commission was established by Governor Larry Hogan through Executive Order 01.01.2017.24.⁴¹ This commission is responsible for developing strategies and making recommendations to the governor to strengthen the state’s outdoor recreation industry and help ensure increased investment in our state’s outdoor recreation resources. “Maryland is abundant with natural, cultural, historical, and recreational resources that contribute significantly to our economy and quality of life,” said Governor Hogan. “This commission will help ensure that our state’s natural heritage is strengthened, bringing new businesses, increased tourism, and ultimately preserving our resources for future generations.” The outdoor recreation economy in Maryland already generates 109,000 direct jobs, \$14 billion in consumer spending, \$4.4 billion in wages and salaries, and \$951 million in state and local tax revenue. Investment in outdoor recreation and nature and heritage tourism economies support many outdoor activities in Maryland, including hiking, biking, horse-back riding, paddling, boating, fishing, hunting, camping, swimming, wildlife-viewing, and visiting historic sites.

As part of their work, the commission will develop innovative strategies to market Maryland’s unique outdoor and heritage recreation brand, as well as recommend initiatives to grow and attract new companies. Additionally, the commission will explore ways to retain and support Maryland’s existing outdoor recreation businesses.

Celebrating Maryland’s Landscape and Culture

Maryland has a host of programs that seek to preserve and celebrate the state’s beautiful landscape and rich cultural history and identity. The Maryland Scenic Byways Program, Maryland Heritage Areas Program, and the Maryland Traditions Program provide resource identification

⁴¹ dnr.maryland.gov/Documents/more/MORE_Executive-Order.pdf

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and planning frameworks that can be used to inform efforts that conserve the lands and places that celebrate these unique opportunities.

Scenic Byways Program

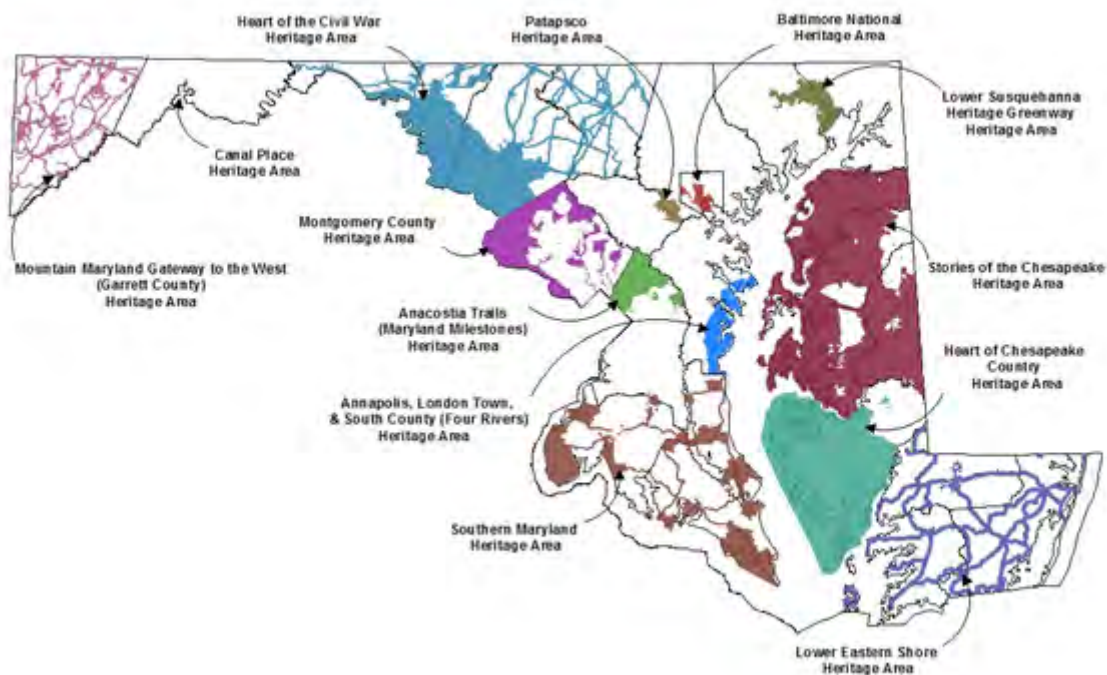
The Maryland Scenic Byways Program⁴² is a cooperative effort between the State Highway Administration and federal, state, and local agencies that works to enhance economic development strategies and promote the conservation and preservation of cultural and natural resources along designated scenic byways as economic drivers. A primary strategy of the program is to link preservation and conservation priorities for byways with those of other state and regional organizations. Maryland Scenic Byway sponsoring organizations partner with existing preservation and conservation organizations such as Maryland Environmental Trust that already have the organizational structure and experience to purchase or broker conservation or preservation easement agreements with willing landowners.

Current land conservation strategies include the development and implementation of scenic byway corridor management plans which identify resources that are in highest need of protection and the Maryland Department of Planning's efforts to incorporate scenic byways into the statewide conservation and preservation priorities, which will help to address this challenge. The Maryland Environmental Trust also works to incorporate the preservation of byway viewsheds into their conservation priorities.

Heritage Areas Program

The Maryland Heritage Areas Program⁴³ partners with nonprofits, public agencies, private individuals, and businesses to help conserve and interpret the best of Maryland's historical sites and towns, natural areas, and enduring cultural traditions, and in doing so, fosters sustainable economic development through heritage tourism. All 23 counties and the City of Baltimore contain at least a portion of one of Maryland's 13 state-designated and locally managed heritage areas.

Figure 4: Maryland Certified Heritage Areas



⁴² roads.maryland.gov/Index.aspx?PageId=567

⁴³ mht.maryland.gov/heritageareas.shtml

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A high percentage of Department of Natural Resources' lands fall within the boundaries of heritage areas.

Each of Maryland's heritage areas is illustrated in **Figure 3** and is defined by a central theme that makes that place or region unique. These places exhibit tangible evidence of the area's heritage in historic buildings and districts, distinctive cultural traditions, one-of-a-kind natural landscapes, as well as other resources such as museums, parks, and evidence of traditional ways of life evident in local food, music, and art. Each heritage area has a community-created management plan that defines the area's significant historical, natural, and cultural sites and the area's goals for protection, interpretation, and enhancement of these resources.

Heritage Areas Program financial assistance programs including grants, loans, and tax credits that support projects and activities that tend to be compatible with those identified in local and state conservation and recreation plans.

For example, projects eligible for Heritage Area Program assistance can include trail development, interpretive and wayfinding signage, interpretive programming, visitor center and museum development and enhancement, property acquisition, and educational activities.

Maryland Traditions Program

Maryland Traditions is the folk life program of the Maryland State Arts Council and partnership with the Maryland Historical Trust to develop statewide infrastructure to support the continued passing of folklife and folks arts as a means to safeguard cultural heritage. Maryland Traditions carries out this mission by documenting living traditions throughout the state, building archives, and developing public programs to elevate appreciation of Maryland folk life.

Maryland Traditions recognizes mastery of traditional arts and celebrates outstanding stewardship of living traditions through Apprenticeship Awards and the Achievement in Living Traditions & Arts Awards. Recipients are



Dan's Mountain Wildlife Management Area | Photo courtesy of Wildlife and Heritage Service staff

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vetted through extensive fieldwork, and Maryland Traditions maintains collections on the people, places, and traditions recognized through these programs. Recognition has been awarded to people, places, and traditions in every county in the state. The Maryland Traditions Program manages a network of partner organizations statewide that collectively work to consider cultural heritage resources as they explore land conservation and recreation opportunities. Each partner employs a folklorist on staff who conducts regional fieldwork and develops programs that respond to the needs of the regional community. Current partners include: Chesapeake Bay Maritime Museum, Ward Museum of Wildfowl Art, University of Maryland Baltimore County, Frostburg State University, Sandy Spring Museum, and the National Council for the Traditional Arts.

The Maryland State Arts Council's folk life program has maintained an archive of Maryland folk life since its inception in 1974. Traditions documented in the collections include traditional music (ex. Gospel, bluegrass, South Indian sacred music, Mennonite songs, West African griot songs, etc.), occupational folk life (boatbuilding, sign painting, wagon making, steel work, tobacco farming, crabbing, oystering, etc.), material culture (decoy carving, rag rug weaving, blacksmithing, silversmithing, quilting, musical instrument making, etc.), foodways (stuffed ham, Smith Island Cake, tortilla making, crab cakes, etc.), vernacular architecture (traditional barn types, etc.), and community events and products (jousting tournaments, revival meetings, carnivals, etc.).

Indigenous Cultural Landscapes

According to the National Park Service, "Indigenous cultural landscapes are evocative of the natural and cultural resources supporting American Indian lifeways and settlement patterns in the early 17th century."⁴⁴ Native people have called Maryland home for millennia, dwelling

within the different regions through a changing climate. In one sense, the Chesapeake region could be considered an indigenous landscape. However, the particular landscape histories of indigenous populations in particular places and times within Maryland are important for appreciating, preserving, managing, and experiencing the total range of American Indian cultural resources.

"Every people have a center of their world and their world fans out from that center. Fishing Bay could be considered our spiritual center, and the chief of chief's village of Chicone was our political center. Our world fanned out to north of the Choptank, south of the Nanticoke, and east toward the Delaware Bay. These places are connected to each other and they are connected to us. We seek to protect them and honor them for all generations as the Creator taught us."

Chief Sewell Winterhawk Fitzhugh, Nause Waiwash Band of Indians

The Maryland Commission on Indian Affairs⁴⁵ has initiated a campaign to identify and preserve endangered landscapes across the state and enable appreciation of the holistic suite of resources important to



all Marylanders. Community capacity building and broad-based partnering with preservation and conservation organizations and with non-traditional supporters of environmental stewardship are part of the campaign. The National Park Service is sponsoring research and a pilot mapping project to identify these culturally important landscape areas.

⁴⁴ nps.gov/cajo/learn/indigenous-cultural-landscapes.htm; Accessed October 2018

⁴⁵ goci.maryland.gov/maryland-commission-on-indian-affairs/

The Chicone settlement of the Nanticoke Indians in Dorchester County during the 16th and 17th centuries provided a more recent example of an indigenous landscape known through historical accounts and through archaeology in addition to its importance communicated by descendant Indian communities. Chicone served as the political center of between 7-10 settlements along the Nanticoke and spanned both sides of the river. It consisted of over 9,000 acres on the eve of and well after European contact with likely 150-200 residents. The area included quality agricultural soils, fresh water, forests, a plethora of marshes and their animal and plant resources, waterways for travel, and terrestrial paths providing linkages with other settlements. There was a core cluster of longhouses of people closely related to the chief with gardens, storage areas, and hearths in addition to outlying houses and clusters of houses arrayed along the river and creeks. Their landscape came to include European encroachment as well. It is these landscapes of the early 17th century that are becoming an additional focus for land conservation efforts.

The Department of Natural Resources relies upon the combined expertise of the Maryland Commission on Indian Affairs and the National Park Service to assist in the identification and interpretation of key properties important for the preservation of indigenous cultural landscapes.

State and Local Historic Property Designation Programs

The National Register of Historic Places recognizes districts, buildings, structures and sites for their significance in American history, archeology, architecture, engineering, or culture, and identifies them as worthy of preservation. The National Register is a program of the U.S. Department of the Interior, National Park Service, and is administered at the state level by the Maryland Historical Trust.⁴⁶ Listing in the National Register honors the property by recognizing its

⁴⁶ mht.maryland.gov/research_nationalregister.shtml

significance, confers a measure of protection from harm by federal or state activities, and makes the property eligible for preservation assistance including federal and state tax credits or loans. Listing does not, however, place any restrictions on the actions of private property owners. In contrast, local historical preservation programs in Maryland are most frequently implemented through historic area zoning overlay districts. Individual buildings and districts may be designated as historic by counties and municipalities in order to preserve historical places and protect community character. While these properties may also be listed in or eligible for the National Register of Historic Places, local designations are separate. Owners of properties that are locally designated must receive approval from their local historic district or preservation commission before making alterations to the exterior of all buildings on their property or constructing new structures within designated districts.



Chapman by Bob Cantin | Maryland Park Service

E. PARTNERS IN LAND CONSERVATION & PUBLIC OUTDOOR RECREATION

Success in conserving natural lands for the public benefit in Maryland is often the result of collective efforts of partners across all scales and sectors of government, non-profits, land trusts and conservancy organizations, private landowners, and the public. The Department of Natural Resources maintains partnership relationships

that help ensure land conservation efforts are as effective and efficient as possible while yielding the greatest public benefit.

Working with Local Governments – Zoning and Land Use Control Consideration

In addition to directly conserving open space, local land use authority, and planning policies steer land and natural resource conservation efforts in Maryland's counties and the City of Baltimore. The Department of Natural Resources always considers zoning and local land use controls applicable to properties being considered for state conservation funding through the stewardship review process. The proximity to existing protected land and the degree to which local zoning provides resource protection are factors which weigh in favorably for funding approval.

Working with Local Governments – Land Preservation, Parks and Recreation Plans

As part of local Land Preservation, Parks, and Recreation Plans, local government agencies in Maryland identify priority preservation and conservation areas for natural resources and some compare these areas to the Department's Targeted Ecological Areas as a basis for identifying collaborative conservation efforts. In addition, the plans identify the fundamental implementing ordinances and programs for achieving the county goals for conserving natural lands and resources. In the 2017 updates to their Land Preservation, Parks, and Recreation Plans, local government agencies utilized a variety of approaches to address these criteria. Many counties referred specifically to resource conservation objectives articulated in their comprehensive plans, while others described in detail their processes for proactive conservation planning and integration with planning for growth and development.

⁴⁷ mda.maryland.gov/malpf/Pages/Certification.aspx

⁴⁸ mda.maryland.gov/MarylandAgriculturalLandPreservationFoundation/Pages/Certification.aspx; Accessed Oct. 2018

State Certification of County Agricultural Land Preservation Programs

Counties with successful agricultural land preservation programs can apply to have their programs certified by the Maryland Department of Planning and the Maryland Agricultural Land Preservation Foundation.⁴⁷ Certification allows counties to retain 75% of the locally generated agricultural land transfer tax revenue. Counties that are not certified keep 33% of the agricultural land transfer tax and remit 67% of the funds to the State for use by the Maryland Agricultural Land Preservation Foundation. A certification requirement focusing on land conservation is the establishment of local Priority Preservation Area. To be designated a Priority Preservation Area, the area must:

- Contain productive agricultural or forest soils and be capable of supporting profitable agricultural and forestry enterprises.
- Be governed by local policies that stabilize the agricultural and forest land base and provide time for easement acquisition before goals are undermined by development.
- Be large enough to support normal agricultural and/or forestry activities.
- Be accompanied by the county's acreage goal for land to be preserved through easements and zoning in the county's Priority Preservation Area equal to at least 80% of the remaining undeveloped acres of land in the area.

In some instances, the rural resources within a county Priority Preservation Area are also identified as Targeted Ecological Areas. These overlaps may be represented by large forested areas or agricultural lands that support terrestrial and aquatic habitats important for rare, threatened, and endangered plants and animals.⁴⁸

As of August 2018, agricultural land preservation programs have been certified in 16 counties: Anne Arundel, Baltimore, Calvert, Caroline, Carroll, Cecil, Frederick, Harford, Kent, Montgomery, Prince George's, Queen Anne's, St. Mary's, Talbot, Washington, and Worcester.

Transfer of Development Rights Programs

Transfer of Development Rights programs⁴⁹ work to preserve rural land and encourage development in existing communities while leveraging private funds. Through voluntary Transfer of Development Rights programs, developers buy development rights from owners of rural land within locally designated "sending areas" identified for preservation. A perpetual conservation easement is then placed on the property. Developers can use their purchased development rights to build more residences, increase commercial square footage, or gain other marketable features in "receiving areas," which are located in areas where development and infrastructure are planned and desired. The Maryland Department of Planning provides assistance and support to local governments on Transfer of Development Rights programs.

A Better Maryland: Maryland's New Statewide Development Plan

The Maryland Department of Planning was directed by Governor Hogan through an Executive Order to create a state development plan that promotes the general welfare and prosperity of the people of Maryland. The plan now underway—A Better Maryland—is on track to be submitted to the Governor by July 1, 2019. The vision of A Better Maryland⁴⁹ is a dynamic, evolving plan that provides a framework to support a thriving economy and environmental stewardship. The plan supports collaboration among state and local governments and all other stakeholders, providing resources and tools for the long-term economic success of Maryland.

⁴⁹ planning.maryland.gov/Pages/OurWork/envr-planning/transfer-dev-rights.aspx

The goals of A Better Maryland are:

- Enrich the lives of Marylanders
- Use smart growth principles
- Grow responsibly
- Protect Maryland's resources



The objectives for growing responsibly and protecting Maryland's resources are:

- Support existing communities
- Create quality places
- Coordinate State investment
- Natural resource preservation
- Cultural, historical, and heritage preservation

Bicycle and Pedestrian Master Plan

The State's draft 2019 update of the Bicycle and Pedestrian Master Plan has been completed. The process is led by the Maryland Department of Transportation. The Bicycle and Pedestrian Master Plan is updated every five years in coordination with the Maryland Transportation Plan, which outlines the State's overarching transportation priorities and helps create a larger context for transportation decision-making. The 2019 Bicycle and Pedestrian Master Plan presents an updated 20-year vision to support bicycling and walking in Maryland, and will provide guidance to support strategic investments toward a safer and more integrated transportation network. The Bicycle and Pedestrian Master Plan and this Land Preservation and Recreation Plan support each other and emphasize the importance of trails in the State Maryland. Broad goals and strategies included in both State plans include: connected networks, safety, partnerships, economic development, and planning tools. Specifically, the Bicycle and Pedestrian Master Plan shows off-road bicycle facilities, on-road bicycle facilities, the

Bike Spine Network, and prominent trails in each region of the State.

Large Landscape Federal Initiatives

National Park Service Led Landscape Conservation in the Chesapeake Bay Region

In 2009, federal Executive Order 13508 declaring the Chesapeake Bay “a national treasure” and recognized the nationally significant assets of the watershed in the form of “public lands, facilities, military installations, parks, forests, wildlife refuges, monuments, and museums.” The order called for a strategy for protecting and restoring the Chesapeake, including advancing land conservation and public access. The National Park Service is the federal regional leader of efforts to foster watershed-wide collaboration in carrying out this aspect of the strategy.

To establish an accurate baseline for tracking progress and supporting collaboration toward the Executive Order, LandScope Chesapeake,⁵⁰ an interactive map viewer to bring together maps, data, photos, and stories was created and provides tools and for strategic conservation planning and priority-setting.⁵¹ By using LandScope Chesapeake, partners can share a carefully curated collection of map data on federal, state, and local conservation priorities across the watershed. The 2014 Chesapeake Bay Watershed Agreement set conservation and restoration goals for Bay-area governments to achieve by 2025. These include goals for protecting an additional two million acres throughout the watershed and adding 300 new public water access sites. LandScope Chesapeake supports the 2014 Chesapeake Bay Watershed Agreement by helping to determine shared priorities and encourage collaboration to meet the goals of the Agreement.

U.S. Fish and Wildlife Service Landscape

Conservation Cooperatives

The U.S. Fish and Wildlife Service recognizes that protecting natural and cultural resources is essential to sustaining our health and quality of life. We, along with fish and wildlife, rely on clean water and the benefits of having healthy rivers, streams, wetlands, forests, grasslands, and coastal areas in order to thrive. Managing the landscapes that provide our natural and cultural resources has become increasingly challenging and is not possible without partnerships. In the recent past, these partnerships included Landscape Conservation Cooperatives, networks of resource managers and scientists working to better integrate science and management public decision-making regarding climate change and other landscape scale issues. Federal, state, and local governments, along with tribes, non-governmental organizations, universities, and interested public and private organizations, worked collaboratively to identify best practices, connect efforts, identify science gaps, and avoid duplication through conservation planning and design.

Two Landscape Conservation Cooperatives operate in Maryland, the North Atlantic⁵² and the Appalachian,⁵³ and have produced a number of useful data sets, mapping products, and tools that partners use to analyze and aid decision making regarding landscape-scale challenges, including the creation of models used to effectively predict and address land conservation threats such as climate change and development/urbanization.

⁵⁰ landscape.org/chesapeake

⁵¹ landscape.org/chesapeake; Accessed October 2018

⁵² northatlanticlcc.org/

⁵³ applcc.org/

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The U.S. Fish and Wildlife Service Chesapeake Bay Field Office used the Landscape Conservation Cooperative tools to create two large-scale conservation focus areas in the region:

- I. Patuxent Waters Conservation Area Network: covers much of the western shore area of the Chesapeake Bay and was established to create a network of connected natural areas and working lands to sustain healthy and diverse populations of fish, wildlife, and plants that provide ecosystem services and contribute to the quality of life for the people of Maryland.
- II. Delmarva Restoration and Conservation Network: established to restore and conserve the Delmarva Peninsula's landscapes, waterways, and shorelines that enable local economies to thrive in a network of working and natural lands and waters that support a diversity of habitats for native fish and wildlife.



Patuxent River | Maryland Park Service, Maryland Department of Natural Resources



A picnic by the cherry tree by Kristine Lochart

III. RESEARCH AND TRENDS

A. MARYLAND'S CHANGING POPULATION

Maryland's population has been steadily growing. While public outdoor recreation amenities in the state attract tourists from outside of Maryland, residents comprise the largest pool of existing local outdoor recreators and potential new participants. Unless otherwise noted, the characteristics of the statewide population presented are based on the latest public data available from the Maryland Department of Planning as of July 2018.

Key Characteristics of Maryland's Population by Service Region

Total Population and Distribution of Residents

As of July 2017, the Maryland Department of Planning estimated the total statewide population to be 6,052,177. At the time of the last Census in 2010, Maryland's population was 5,775,562. As illustrated in **Figure 5** (on the following page), the Central Region is home to over half of the state's population and is the most populous service region. The Eastern Region is the least populated, with approximately six percent of Marylanders living there.

WESTERN <ul style="list-style-type: none"> • 8% of Statewide Population • Predominantly Caucasian • Higher Median Age • Lower Median Household Income 	CENTRAL <ul style="list-style-type: none"> • 55% of Maryland's total population • Significant differences in median age, income, and racial composition between populations of counties and City of Baltimore
SOUTHERN <ul style="list-style-type: none"> • 30% of the statewide population • Most racially diverse service region and only minority-majority region • Household income at or higher than statewide median 	EASTERN <ul style="list-style-type: none"> • Least populous service region • Predominantly Caucasian • Lowest median household income levels • Highest median age residents

Characteristics by Region

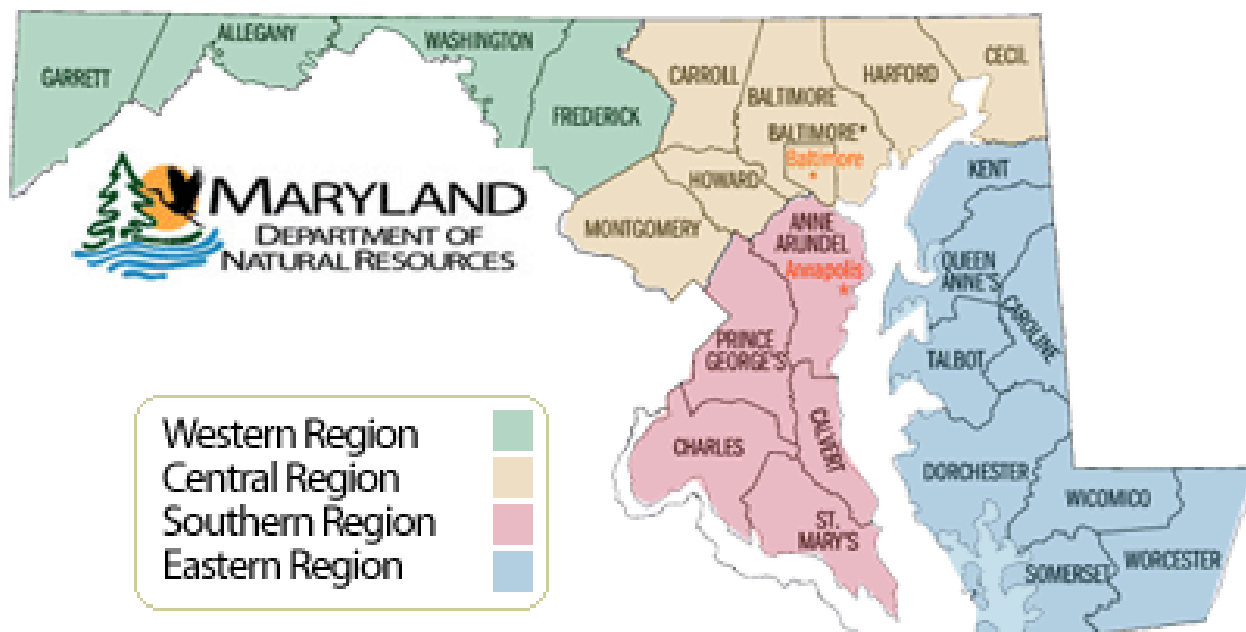
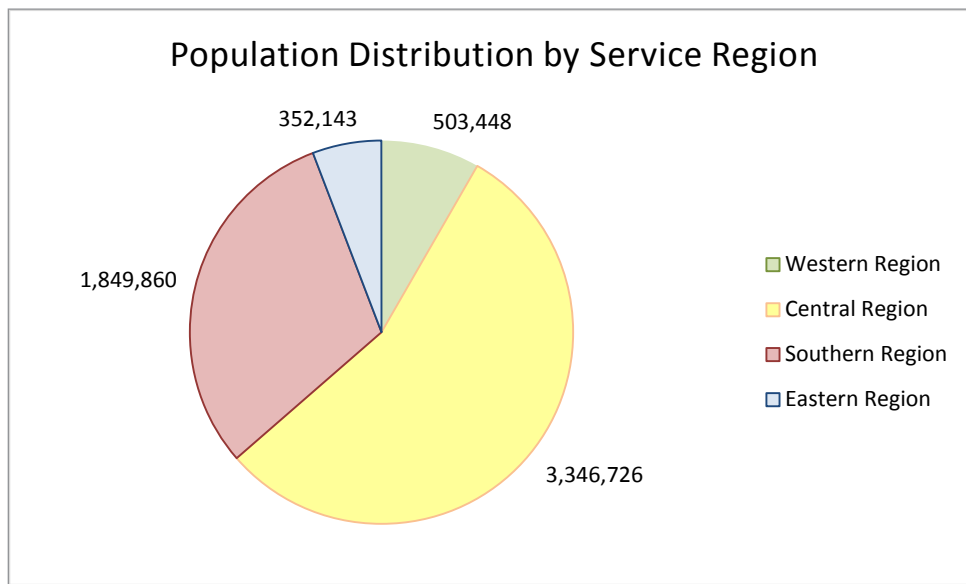


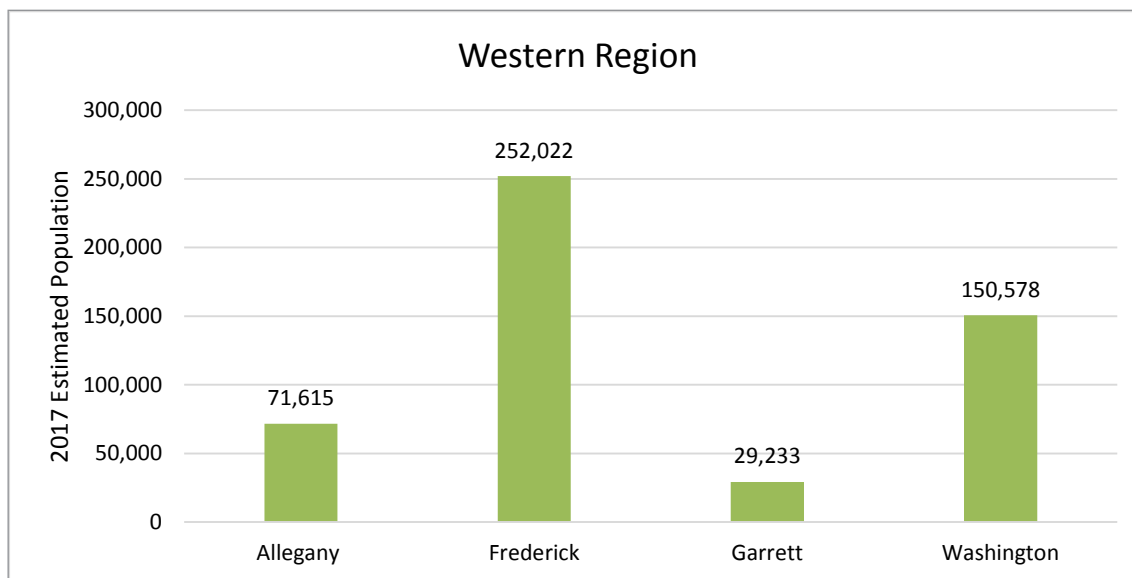
Figure 5: Maryland's Population Distribution by Department of Natural Resources Service Region



Source: Maryland Department of Planning

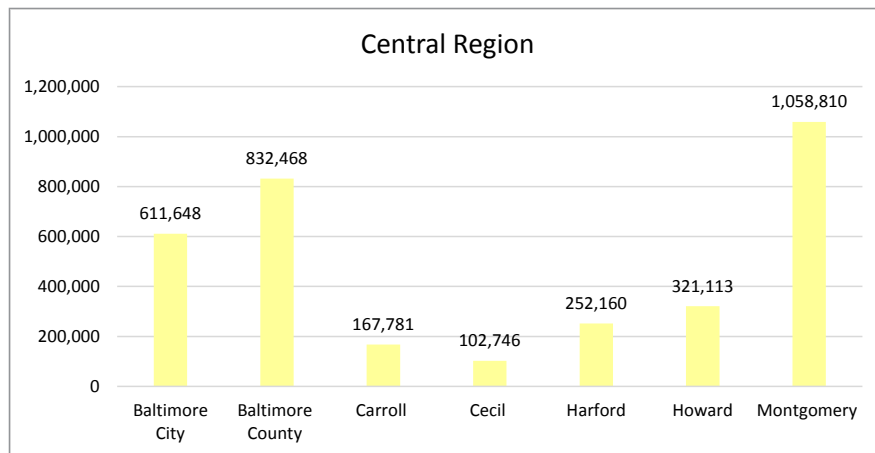
As **Figures 6 – 9** illustrate, the distribution of residents by county also varies.

Figure 6: Western Region Population Distribution



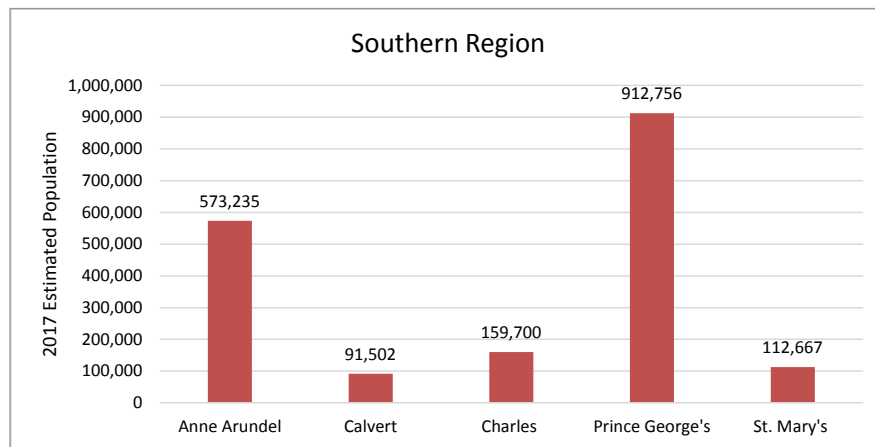
Source: Maryland Department of Planning

Figure 7: Central Region Population Distribution



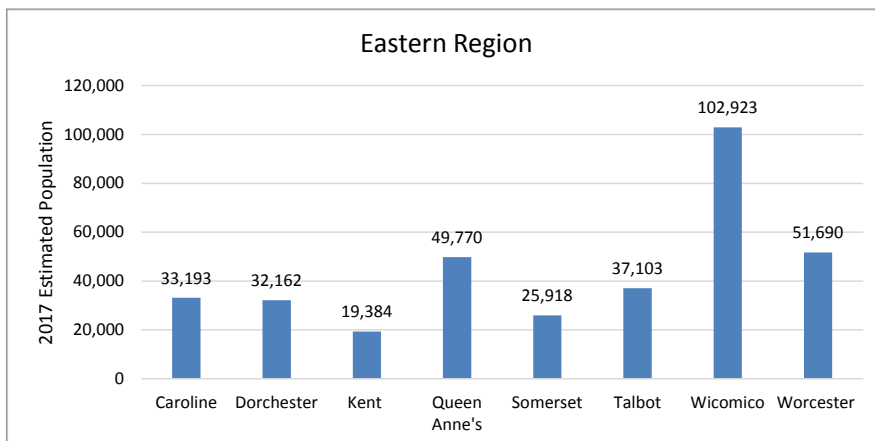
Source: Maryland Department of Planning

Figure 8: Southern Region Population Distribution



Source: Maryland Department of Planning

Figure 9: Eastern Region Population Distribution

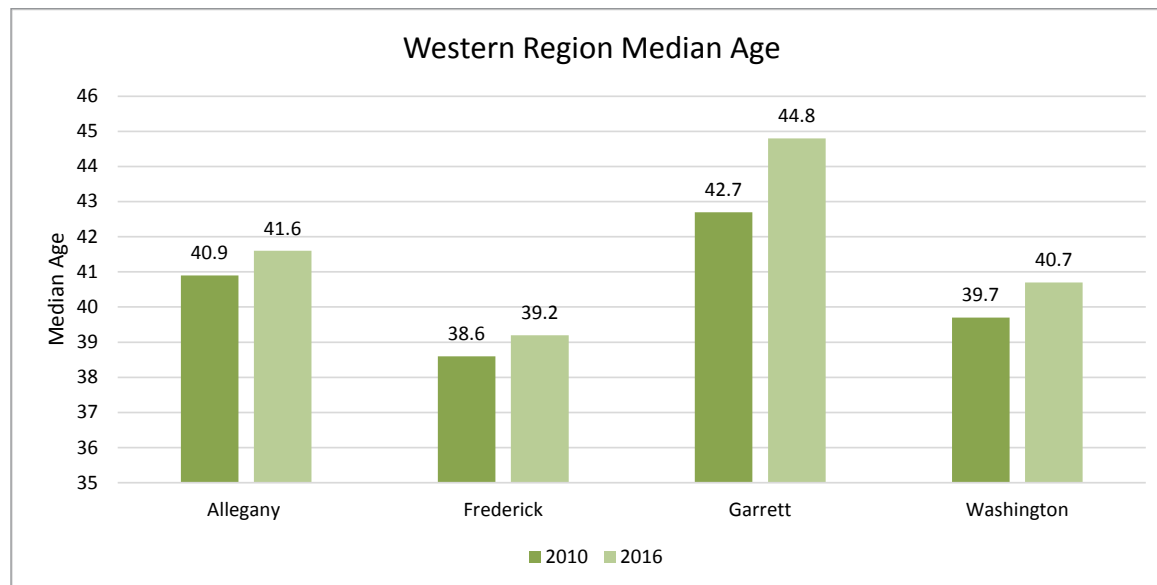


Source: Maryland Department of Planning

Population by Age

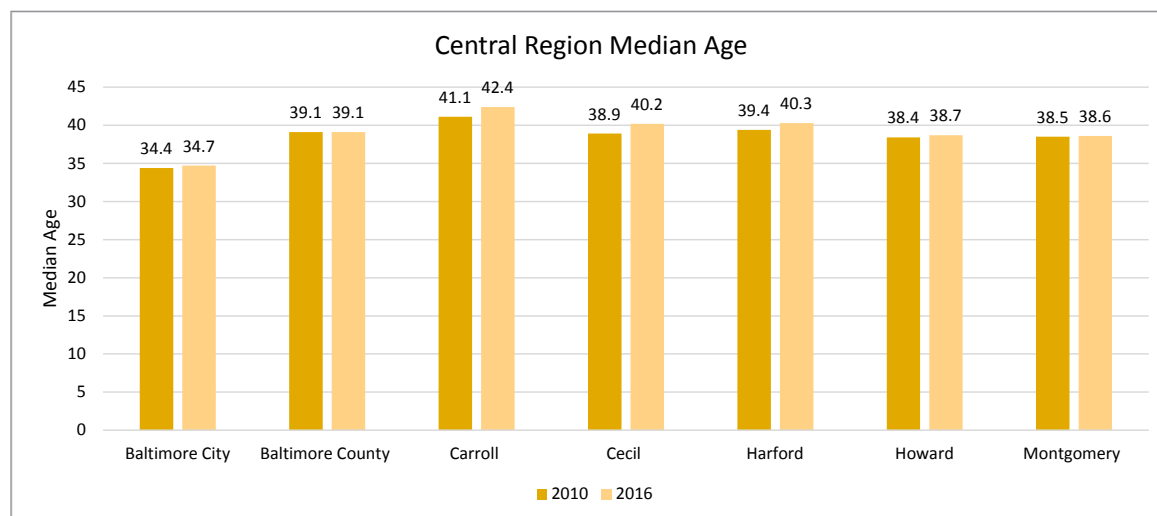
As of July 2017, the median age of Maryland residents was 38.7 years. Over the past decade, the statewide median age has fluctuated between roughly 37 to 40 years of age. The median age of residents by county varies widely across the state. **Figures 10 – 13** illustrate the current and 2010 median ages of residents by county, and highlights this variability. These figures also show how a general trend toward the median age is increasing in most parts of the state. Overall, the statewide population is getting older.

Figure 10: Median Age Comparison – Western Region



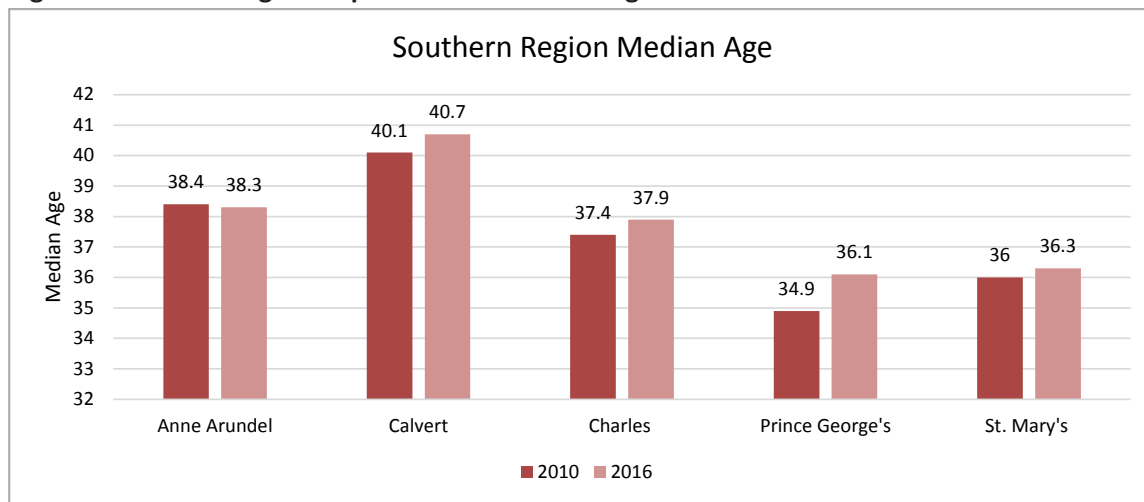
Source: U.S. Census Bureau American Community Survey 2016

Figure 11: Median Age Comparison – Central Region



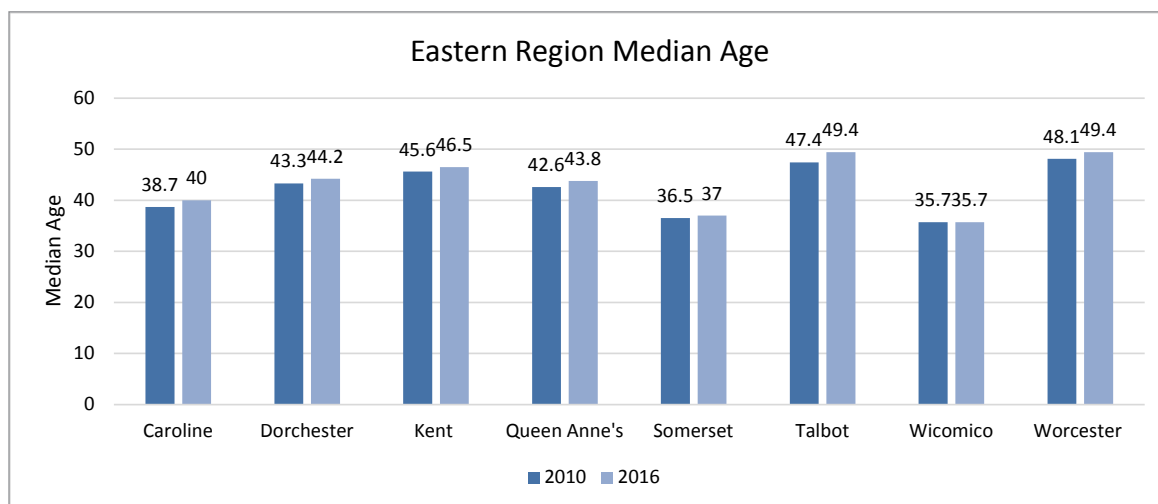
Source: U.S. Census Bureau American Community Survey 2016

Figure 12: Median Age Comparison – Southern Region



Source: U.S. Census Bureau American Community Survey 2016

Figure 13: Median Age Comparison – Eastern Region



Source: U.S. Census Bureau American Community Survey 2016

Population by Race

Residents of Maryland come from diverse racial and ethnic backgrounds. As reported by the Maryland Department of Planning, as of July 2017, Maryland's overall population is nearly evenly split between residents that identify as Caucasian (51%) and combination of residents who identify as African American, Asian, and/or other racial or ethnic heritage.

Maryland's Hispanic population grew 1.7% between 2010 and 2017. Over nine percent of the state's population identify as being of Hispanic origin.

III. RESEARCH AND TRENDS

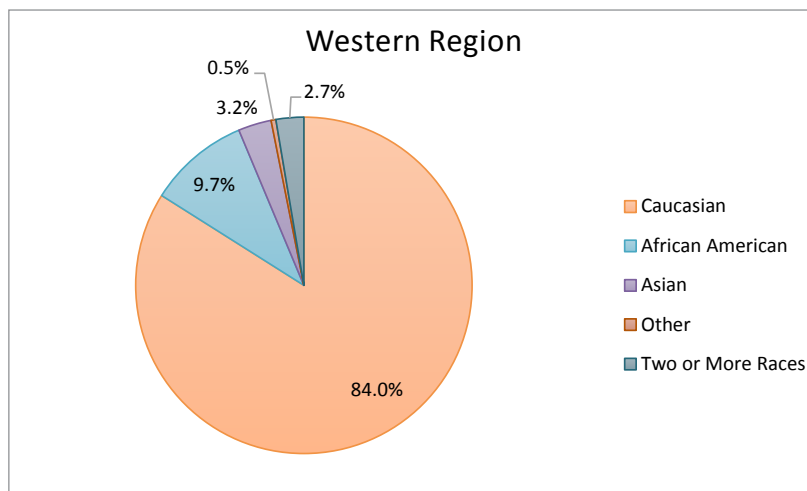
It should be noted that in reviewing population data, the U.S. Census Bureau does not consider Hispanic Origin as a category of race, but as a separate ethnic identifier counted separately from an individual's racial identification. For example, an individual may identify as Caucasian and Hispanic, or African American and Hispanic. The number of Marylanders who identify as being of Hispanic origin is increasing. In 2010, the U.S. Census Bureau's American Community Survey reported that 7.5% of residents identified as being of Hispanic origin, which increased to 9.2% of the population.

Figures 14 – 17 provide a breakdown of the racial character of the populations of each of the Department of Natural Resources service areas. The Central and Southern Regions are the most racially diverse statewide service regions.



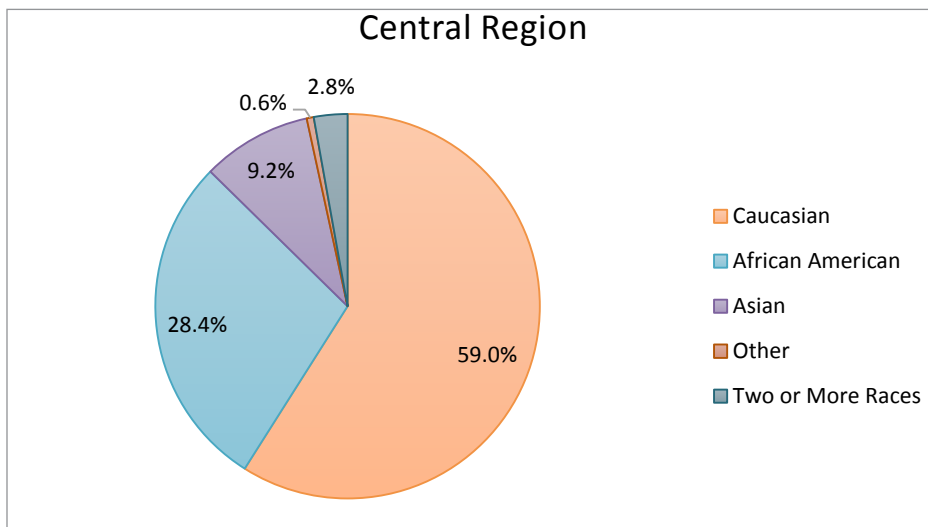
2018 Green Schools Summit
Image Credit: Joe Andrucyk
Maryland State House, Office of the Governor

Figure 14: Western Region Population Racial Character 2017



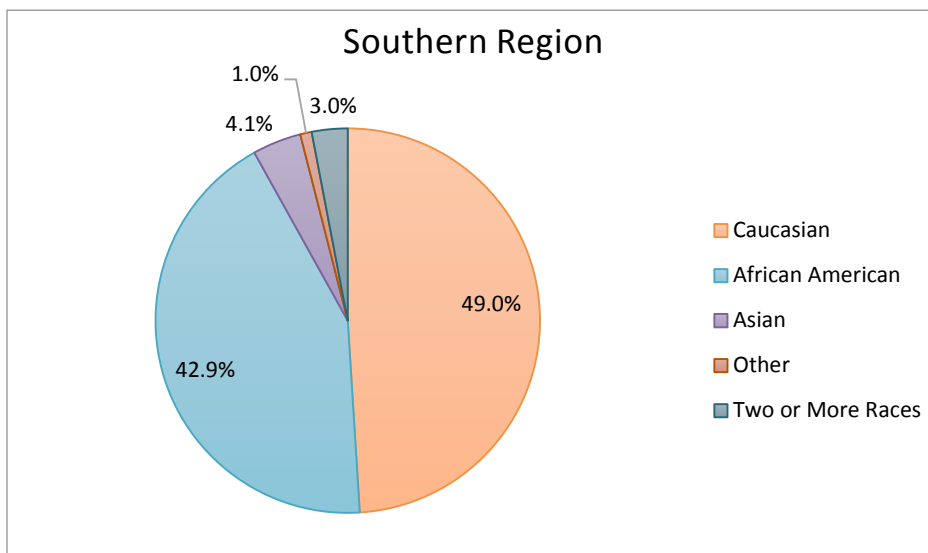
Source: Maryland Department of Planning

Figure 15: Central Region Population Racial Character 2017



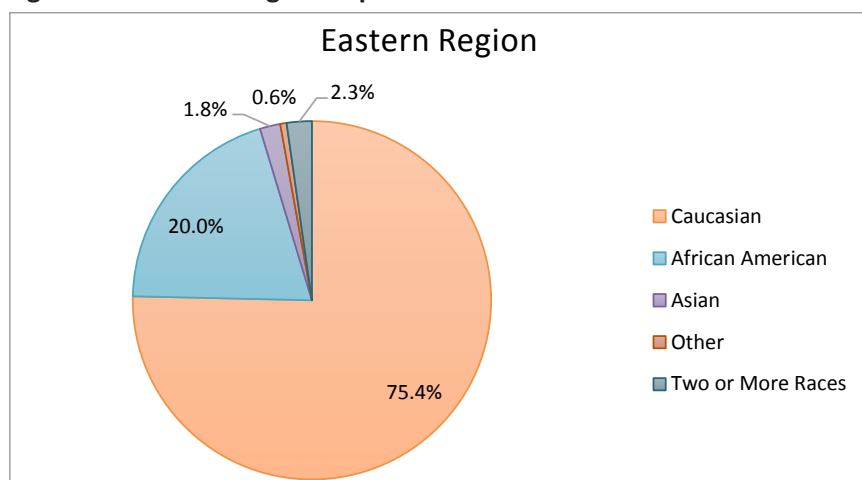
Source: Maryland Department of Planning

Figure 16: Southern Region Population Racial Character 2017



Source: Maryland Department of Planning

Figure 17: Eastern Region Population Racial Character 2017

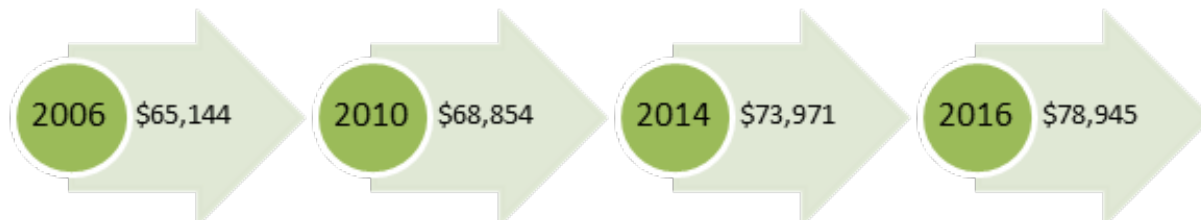


Source: Maryland Department of Planning

Median Household Income

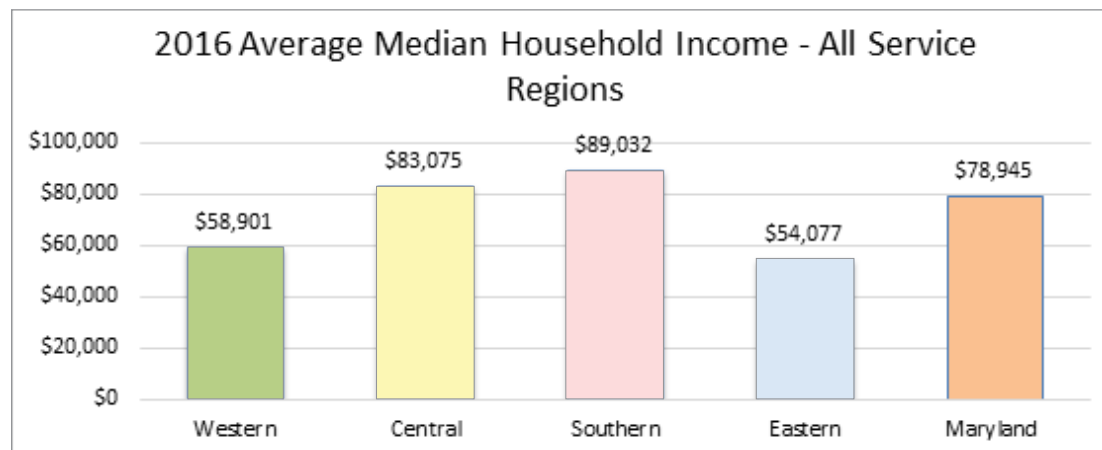
The median household income in Maryland has been steadily increasing over the past decade. While this is a positive trend overall, there are clear household income disparities between the populations of statewide service regions as well as between counties within each service region.

Figure 18: Maryland Median Household Income 2006 - 2016



Source: Maryland Department of Planning

Figure 19: Average Median Household Income by Service Region



Source: Maryland Department of Planning

As illustrated in **Figure 19**, households in the Western and Eastern regions have lower median household incomes than peers in the Central and Southern regions, as well as compared to households statewide. In addition to their higher levels of median household income, the Central and Southern regions are also the most populous of the statewide service regions. Howard County households had the highest median income in 2016 at \$119,386, and Somerset County had the lowest median household income at \$38,546.

Tourism and Visitation for Outdoor Recreation

The Maryland Department of Tourism is the primary agency that promotes Maryland's destinations and monitors key trends related to tourism and visitation. While the overall number of tourists visiting Maryland for recreation purposes is unclear, the Department of Tourism tracks various tax revenues and other data generally related to tourism and visitation. According to the 2017 Annual Report, Tourism in Maryland supports nearly 150,000 jobs and generates nearly \$17.3 billion in spending annually.⁵⁴

B. PUBLIC INPUT – SURVEYS AND FOCUS GROUPS

Getting outdoors for fun, fitness, and leisure is important for Marylanders. Public demand for diverse opportunities to recreate outdoors is high in the Old Line State. As core providers of outdoor recreation opportunities, the Department of Natural Resources, county governments, and the City of Baltimore employ a variety of tools and techniques to maintain a high-level of understanding regarding the evolving recreation needs of the public. For example, several counties frequently conduct surveys of park and program users, and nearly all agencies have front-line service staff that regularly receive direct feedback from patrons. In addition to such efforts, Maryland counties and the City of Baltimore update their Land Preservation, Parks, and Recreation Plans every five years. These local plans provide information on local recreation trends, including demand for outdoor recreation opportunities within their jurisdictions. They provide valuable data that inform this and other statewide planning initiatives.



Assateague | Summer 2017 by Brady Cooling, Maryland Park Service

⁵⁴ industry.visitmaryland.org/research/travel-facts-and-trends/; Accessed November 2018

III. RESEARCH AND TRENDS

The majority of local plans were most recently updated in 2017 and are available for review at the Department of Natural Resources Stewardship website.⁵⁵

Through various engagement tools including social media, the Department of Natural Resources maintains open dialog with the public regarding outdoor recreation and land conservation issues. In addition to these ongoing efforts, as part of the planning process to update the Land Preservation and Recreation Plan, the Department conducted:

- A. Regional Stakeholder Focus Group Meetings in-person across the state to provide the opportunity for direct engagement with Department staff and Land Preservation and Recreation Plan Update project team.
- B. A statewide outdoor recreation survey that sought targeted public input to gauge Marylanders' demand for facilities and services, satisfaction with existing opportunities, challenges to participation, and priorities for improvement.
- C. A 30-day public comment period on the draft update to the Land Preservation and Recreation Plan allowed for citizens to review the entire draft plan and provide feedback to the Department of Natural Resources.

Regional Stakeholder Focus Group Input

A series of interactive focus group meetings were hosted in March and April 2018 to collect feedback from members of the public regarding their perception of outdoor recreation opportunities in Maryland. Most participants in these meetings were "stakeholders" in outdoor recreation that have strong connections with certain activities, parks, or natural areas. Many represented different organizations and user groups already invested in land and natural resource conservation and/or outdoor recreation.

A series of two focus group sessions were hosted in each Department of Natural Resources service region. A total of 55 individuals signed-in as participants at the focus group meetings.

Regional Stakeholder Focus Group Workshop Schedule

March 26: Western Region – Ft. Frederick State Park, Big Pool

March 27: Eastern Region – Talbot County Recreation Center, Easton

April 18: Southern Region – Jefferson Patterson Park & Museum, St. Leonard

April 19: Central Region – Soldiers Delight NEA, Owings Mills

Two sessions hosted per location from 1-3pm and 6-8pm

Questions posed to attendees to spur discussions generally fit into following categories:

- **WHAT IS IMPORTANT TO YOU?**
- **STRENGTHS?**
- **CHALLENGES?**
- **OPPORTUNITIES?**
- **PRIORITIES IN THE NEXT 5 YEARS?**

Notes from each set of regional meetings were provided as staff resource documents.

Overarching themes of feedback and ideas presented by focus group participants included Connectivity, Communication, Access, Operations and Maintenance, and Open Space and Recreation.

Connectivity – people value a trail system that connects:

- People to the outdoors
- Outdoors and history
- Communities to the outdoors
- Land and water access
- Habitats and wildlife corridors
- People to the places where they live, work, shop, play, and learn

⁵⁵ dnr.maryland.gov/land/Pages/Stewardship/2017-Draft_County-LPRP.aspx

Communication – enhance it between:

- Agencies and citizens
- Agencies and visitors
- Government agencies (Federal, State, County, and Local)
- Government agencies and local organizations

Access – is needed for recreation opportunities:

- For land and water activities
- For different ages and ethnic groups
- For people with physical/mental limitations
- For urban and underserved populations

Operations and maintenance – need greater attention:

- Limited resources
- Volunteers help but are not replacements for staff
- Heavy public demand
- Management staff is stretched thin

Open space and recreation – is necessary infrastructure that:

- Improves quality of life
- Protects the environment
- Improves physical and mental health
- Enhances the economic well-being of communities

Statewide Outdoor Recreation Survey

For this and the last update of the Land Preservation and Recreation Plan, the Department of Natural Resources completed a statewide survey, asking residents for feedback regarding

their participation and preferences in outdoor recreation activities, usage of state lands, and concerns and ideas for improving outdoor recreation experiences for all Marylanders. The survey was conducted in two ways to allow for maximum participation, with the same questions posed in each.


Statistically Valid Phone Survey

A random telephone survey of 2,800 Marylanders was completed and gathered input from a sample of residents distributed across the state based on county population and attaining a 50:50 quota of male and female respondents. The majority (57%) of participants were reached by cell phone, whereas the 2013 survey was limited to landline-only participation.


The phone survey was conducted to yield results that are statistically valid, representative of Maryland's population at-large and included users and non-users of state outdoor recreation facilities.

Public Open Link Survey


The statewide outdoor recreation survey was also opened to public participation through the Department of Natural Resources website. A multi-media outreach campaign was employed to inform stakeholders and public about the survey and to encourage participation. Participation in the open link survey was self-selected, with most respondents identifying as current users of public outdoor recreation opportunities. A total of 2,407 Marylanders provided feedback through the open link survey.



"I like to boat a lot, and there aren't a lot of places in my county to launch my boat."



"I would like to see more walking trails."



"We hope that they maintain and enhance what we do have in Maryland."

Key Survey Findings

Results of the statewide outdoor recreation surveys completed in 2013 and 2018 were similar and indicate that Marylanders continue to place a very high importance on public outdoor recreation opportunities, love the diversity of outdoor activities available in the state, and desire basic improvements to improve the user experience. Key findings reviewed in this section highlight the significance of outdoor recreation to Maryland's residents identified in the statistically valid survey. The full report of findings from the 2018 outdoor recreation survey is included in [Appendix B](#) and includes responses by Department of Natural Resources service regions and comparisons to 2013 survey data.

Public input in the development of Maryland's Land Preservation and Recreation Plan included hosting stakeholder focus group meetings with outdoor recreation enthusiasts, representatives of local and regional conservation groups, interested citizens, and staff from local and state agencies, and conducting a statewide outdoor recreation survey of residents through a statistically-valid phone survey and a publicly accessible online survey. Survey and focus group feedback helped identify current public outdoor recreation use and challenges/needs.

Maryland's 23 counties and the City of Baltimore reported their most popular recreational activities during completion of their own Land Preservation, Parks, and Recreation planning efforts. For the State's Land Preservation and Recreation Plan, DNR staff tabulated the top three activities from each of the 24 jurisdictions to find out which activities are most popular in the state overall (**Figure 20**). These are listed below, according to the percentage of the 24 jurisdictions that reported it as among their top three favorite activities:

- Walking (Tied for 1st)
75%
- Hiking (Tied for 1st)
75%
- Biking (Tied for 2nd)
41.7%
- Playgrounds/Public Parks (Tied for 2nd)
41.7%
- Sports Fields/Team Sports (Tied for 2nd)
41.7%
- Running/Jogging (Tied for 2nd)
41.7%

The top recreational needs for the future were computed in the same way. These are listed below, according to the percentage of the 24 jurisdictions that reported it as among their top three future needs (**Figure 21**):

- Trails (75%)
- Indoor Facilities, incl. Pools (50%)
- Outdoor Water Recreation Development/Repair (Tied for 3rd) (33.3%)
- Track/Field Development/Repair (Tied for 3rd) (33.3%)
- Open-Natural-Wildlife Areas/Public Garden (16.7%)



Figure 20: Survey Comparison - Outdoor Activities by Popularity

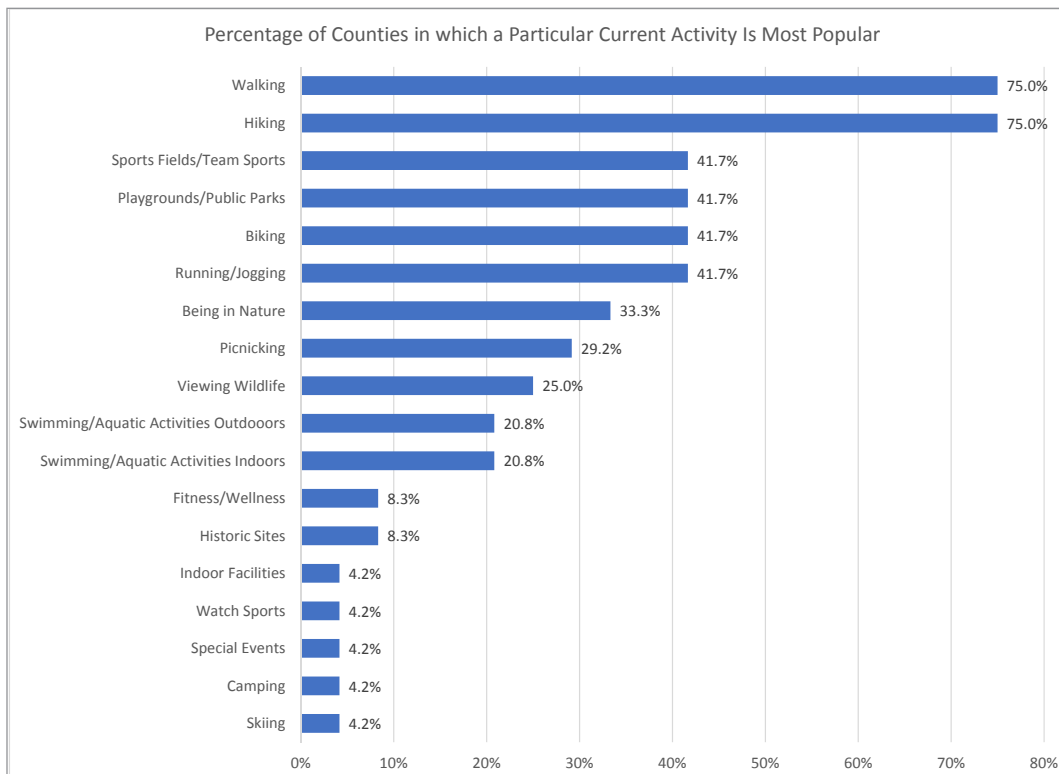
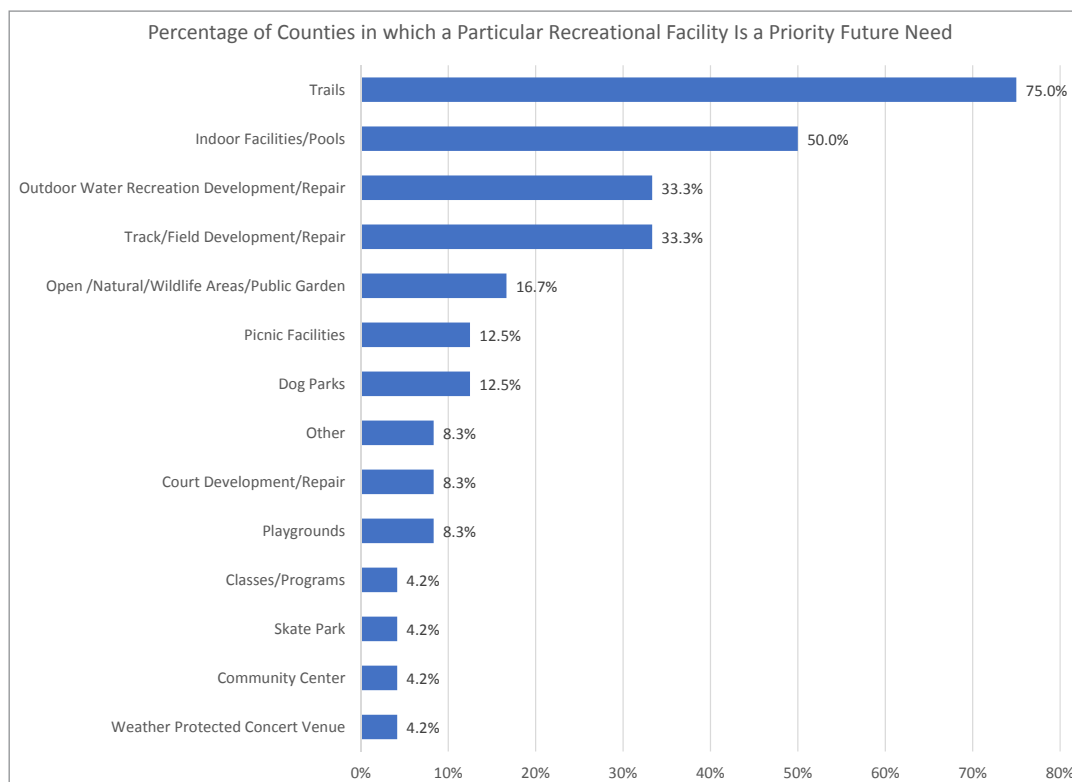


Figure 21: Survey Comparison - Outdoor Activities by Need



III. RESEARCH AND TRENDS

Outdoor Recreation Participation

Annually, nine in 10 Marylanders get outside at Department of Natural Resources parks, forests, and natural resource management and wildlife areas, with 38% visiting at least once a month. Over half of survey respondents indicated that the availability of parks, trails, outdoor recreation facilities, and outdoor education programs is “extremely important” to their household. The benefits of conservation and outdoor recreation received high importance ratings in all regions, but particularly among residents of the Western Region. Issues identified as “extremely important” by respondents included:

- Protecting the environment
- Promoting healthy active lifestyles
- Improving your quality of life
- Preserving cultural and historic resources
- Connecting people with nature
- Providing economic benefit to the state

87% visited a state park, forest, or wildlife area in the past year.

93% access outdoor recreation activities by automobile. 79% typically travel an hour or less to visit an outdoor recreation area.

"No Time" is the greatest barrier to participating in outdoor recreation

Regardless of where they lived, most residents accessed public lands by automobile and traveled less than an hour from home to do so. The availability of close-to-home recreation opportunities is important to Marylanders. This sentiment is also captured in many current local Land Preservation, Parks, and Recreation Plans.

TOP FIVE ACTIVITY PREFERENCES

1 Walking



2 Hiking/Backpacking



3 Running/Jogging



4 Swimming Outdoors

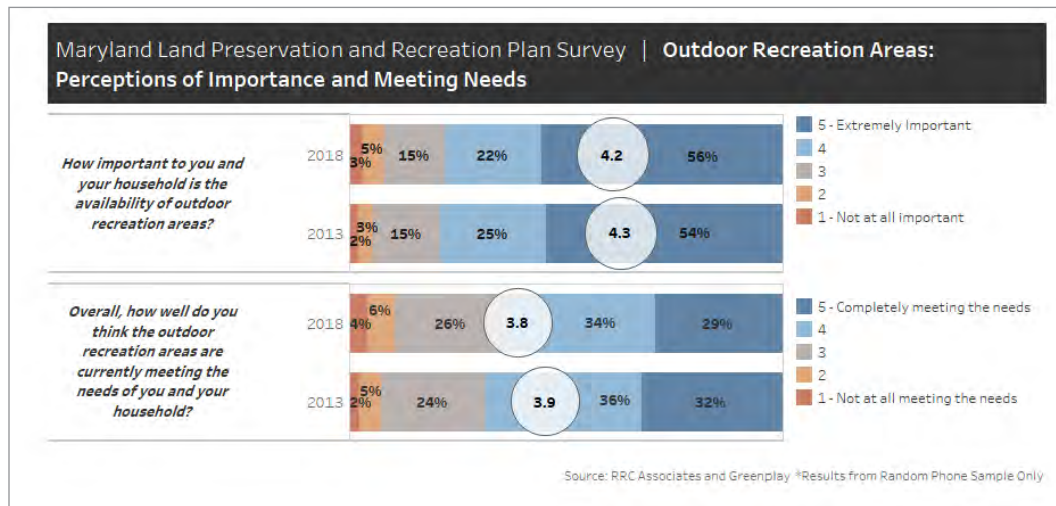


5 Visiting Playgrounds/
Nature Play Spaces



Many factors influence residents’ participation in outdoor activities, but as was the case in 2013, not having enough time to get outdoors remains the greatest single barrier to participation. While participation in outdoor activities and visitation to state lands is strong, less than one third of respondents indicated that existing state parks, trails, outdoor recreation facilities, and outdoor recreation programs are “completely” meeting the needs of their households. **Figure 22** illustrates this point. Another key barrier to participation included a lack of awareness about public outdoor recreation opportunities.

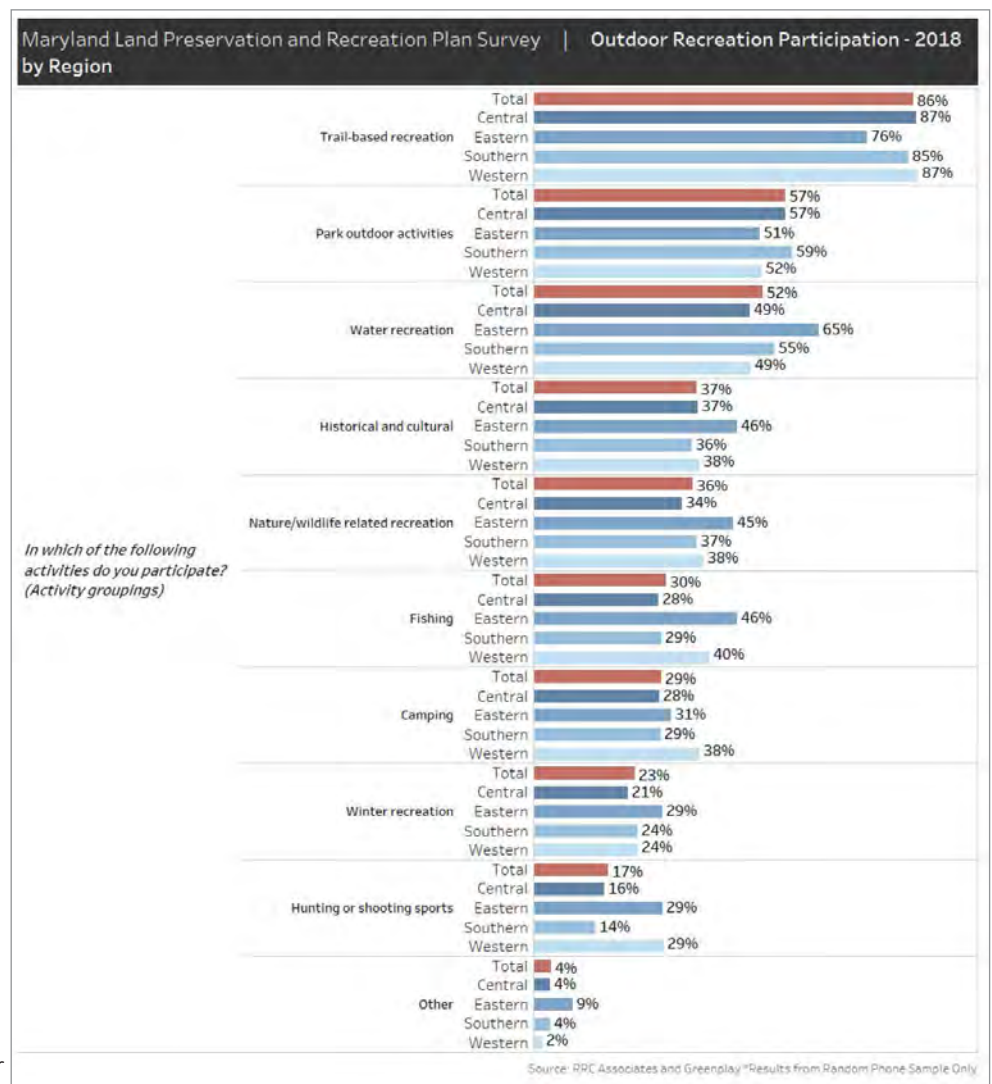
Figure 22: Importance of Outdoor Recreation and Needs Met



Top Activity Preferences

Marylanders participate in a wide array of outdoor activities. Survey respondents were polled on their participation in 32 activities and regardless of age, race, or location, walking and trail-based activities were the most popular. The average respondent participated in 6.7 different outdoor activities, with Eastern Region respondents participating in the most activities on average (8). Activity preferences varied by service region, but as illustrated in **Figure 23**, trail-based recreation, park outdoor activities (such as picnicking, visiting nature place spaces, etc.), and water recreation received high participation rates overall. Variability in Maryland's landscape influences where some activities are available. For example, participation in hunting and shooting sports was higher in the Eastern Region and Western Region, where more public lands cater to these activities.

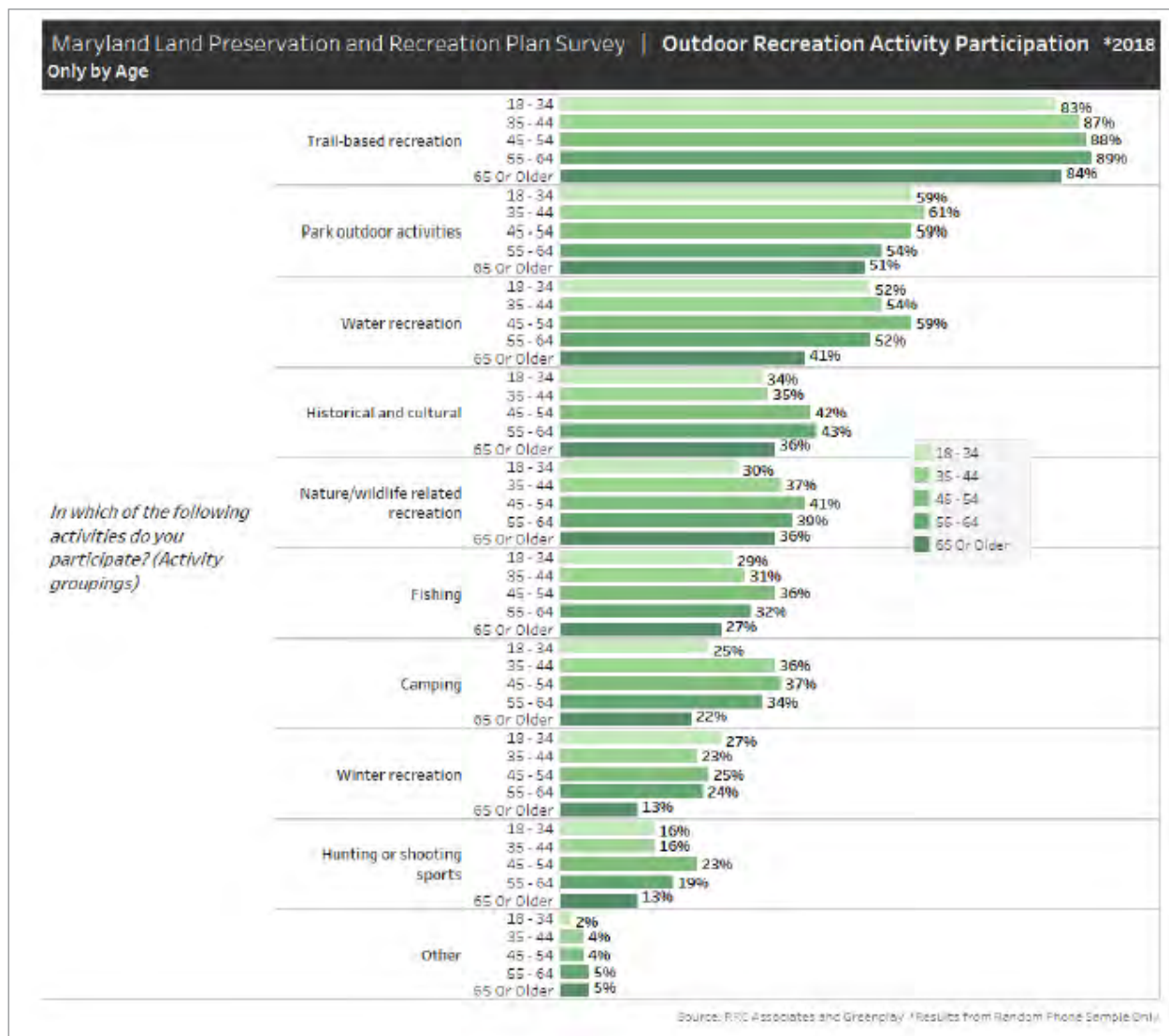
Figure 23: Outdoor Recreation Participation by Region



III. RESEARCH AND TRENDS

In addition to geography, age and race were influencing factors in survey respondents' participation choices. As illustrated in **Figure 24**, participation in activities such as running/jogging and playing outdoor athletic team sports tended to decline with age, but trail-activity participation generally increased with respondents' ages until the age of 65 where participation declined (park outdoor activities refers to playgrounds, picnicking, athletic team sports, and other activities that may be undertaken in an outdoor park). African American respondents tended to go out for a walk slightly more frequently than respondents of other races, and also participated in outdoor team sports more frequently. However, this group tended to fish, camp, hunt, or participate in winter recreation activities less when compared to respondents of other races. Caucasians tended to participate in water recreation, historical and cultural activities, and nature/wildlife related recreation at higher rates than non-Caucasians.

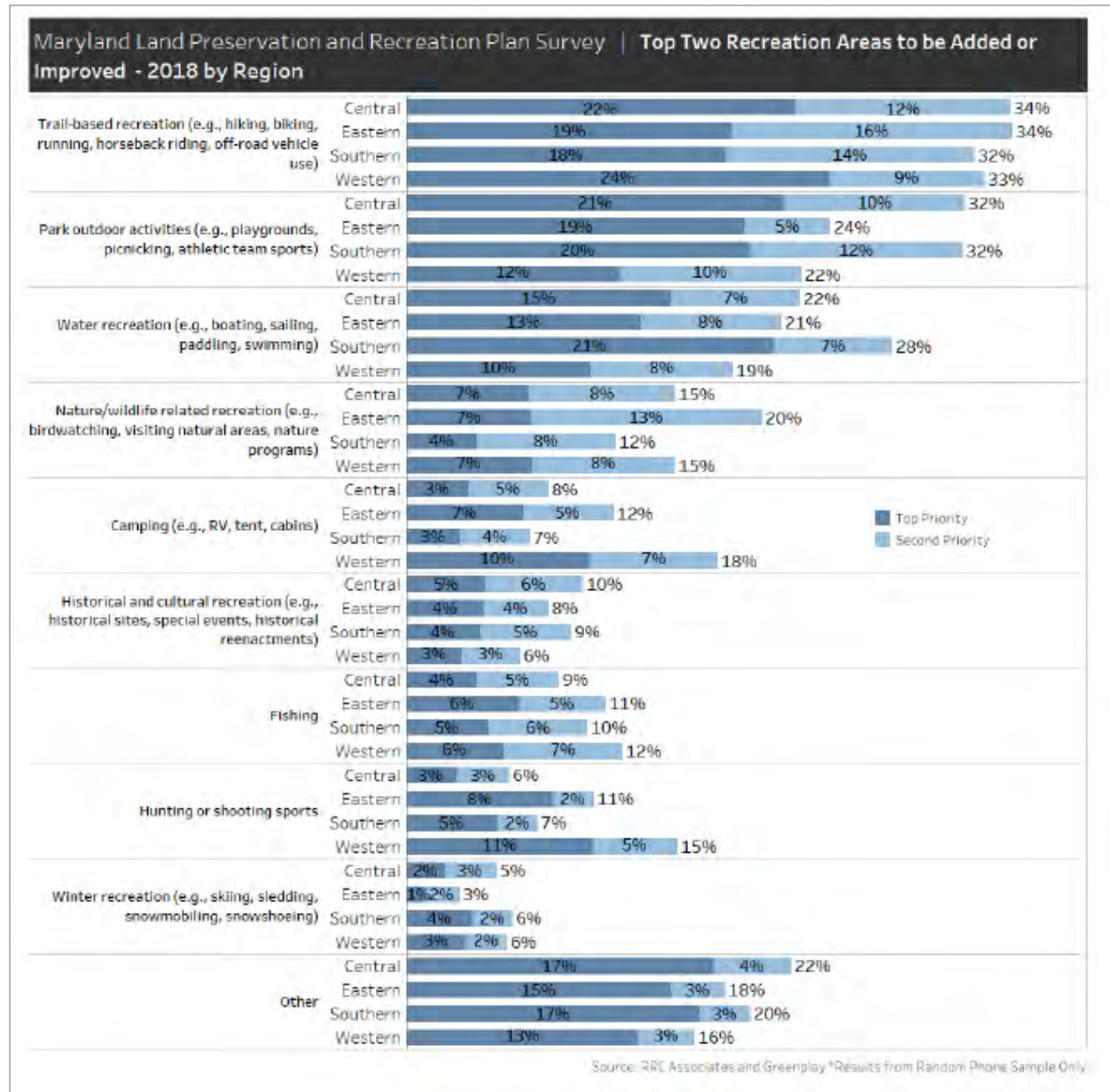
Figure 24: Outdoor Recreation Participation by Age



Priorities for Improvement

Survey respondents indicated several priority areas to focus on for improving public outdoor recreation opportunities across the state. Illustrated in **Figure 25**, with some geographic variabilities, generally one in three respondents viewed improvements to trails as the key priority for enhancement. This was followed in importance by improving opportunities for park outdoor activities and water recreation.

Figure 25: Top Recreation Opportunities to Improve by Regional Respondents



Trail-based activities are the most highly participated in of all outdoor activities polled in the survey, and trails are the highest rated priority for improvement by survey respondents. This further illustrates the importance of opportunities for walking, hiking, and biking to Marylanders.

C. LEVEL OF SERVICE ANALYSIS

This update to the statewide Level of Service analysis builds on the same type of proximity-based GIS analysis completed as part of the 2014 Maryland Land Preservation and Recreation Plan, with some detailed additions. The current Level of Service analysis presents a snapshot of recreation amenities available on public lands in the state managed by federal agencies, the Department of Natural Resources, and by all Maryland counties and the City of Baltimore. Analysis completed in 2014 included only state and National Park Service resources. The addition of County and City of Baltimore data was the result of a collaborative effort that expanded the inventory of public outdoor recreation sites included in the analysis by over ten-fold, from less than 200 sites to 2,200 sites. Public outdoor recreation sites included in the inventory included one or more of the following amenities:

- 1) The site is publicly accessible
- 2) The site provides natural resource-based recreation
- 3) The site offers at least one of the following amenities:
 - A. Natural Area: An undeveloped area with natural resource value
 - B. Water Recreation: Includes swimming, paddling, motor boating, sailing, and/or fishing
 - C. Picnicking: At least one picnic table in a natural resource-based environment
 - D. Trail: Any path or trail that may be used for walking or hiking, cycling, mountain biking, or by equestrians
 - E. Hunting: Designated areas for hunting
 - F. Fishing: Designated areas for fishing

Recreation data was gathered in a GIS database, processed in a 5-mile proximity analysis, and mapped side-by-side with user participation results from the statistically valid surveys for comparison. All locations with a particular type of amenity, such as picnicking, were isolated and analyzed as a batch using specialized GIS tools developed to assess recreation. This toolkit is part of a methodology known as GRASP® (Geo-Referenced Amenities Standards Program). For all analyses only data from Maryland was considered, and as such, gaps along the border may not be a reflection of true access as people can cross the border to use facilities in other states.

Methodology

All analyses utilized a single point, called a centroid, to represent each site included. Property boundaries were only referenced in the creation of each of these center points. Each centroid was attributed with any amenity types available at that site to be utilized in specific analyses. [Appendix D](#) includes additional information regarding methods used to conduct these analyses.

All analyses conducted were proximity analyses, which measured the extent to which recreation amenities were available within a specific distance from the source, called a catchment. A catchment of five miles, essentially a circle of 10 miles, was applied to each location being analyzed then overlapped with catchments from other sites. This type of analysis reveals how many instances of an amenity are available within that specified five-mile distance statewide. A 5-mile catchment was used for all analyses, a distance that corresponds to a 10-15-minute drive. It is intended to capture the casual visitor using a recreation amenity after work or for just a couple of hours. Statewide outdoor recreation survey results indicated residents opt to access outdoor recreation opportunities close to home, most within an hour drive or less.

The results were then quantified and mapped to indicate greater or lesser proximity to a specific type of amenity across the state. It should be noted that these analyses show proximity to the

centroid, or center point, of a site that offers an amenity and do not indicate proximity to that actual amenity.

Proximity vs. Access

A distinction must be made between proximity and access. The analyses conducted solely indicate areas of greater or lesser proximity to outdoor recreation amenities within the state. These maps should not be read to suggest better or worse access, as that implies a host of other considerations beyond the scope of this study. Further, any indication of proximity to more or fewer amenities is relative to other areas of the State of Maryland.

Proximity Maps

The series of proximity analysis maps provides a unique viewpoint on where existing public outdoor recreation sites are available and where people are participating in corresponding activities. Map keys list state and federal sites in bold that are applicable to that analysis. The large number of local properties factoring into each analysis made it prohibitive to list these facilities.

Each map layout includes two maps. One displays the results of the proximity analysis, such as proximity to fishing. The smaller inset map shows participation rates for that activity by county based on the statistically valid survey responses. Taken together, these two maps are intended

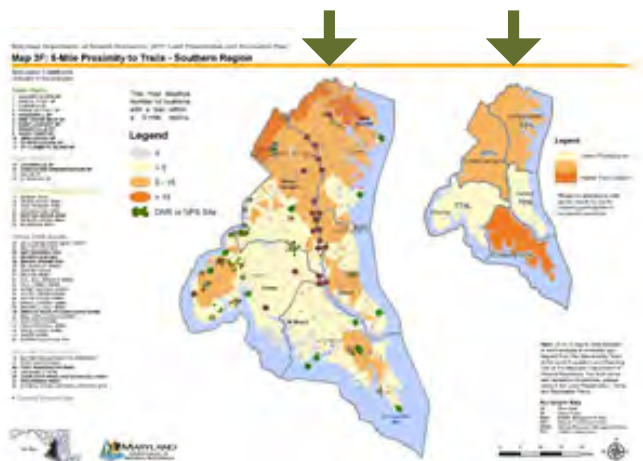
to provide a view of the current supply and demand for key outdoor recreation amenities and activities in Maryland. The resulting comparisons provide a basis to explore the dynamic between where outdoor amenities are located and where survey respondents indicated they participate in corresponding activities.

Analyses were completed for each of the Department of Natural Resources Service Regions (Central, Eastern, Southern, and Western) for a total of 24 individual analysis maps. Proximity analyses completed five years ago were measured on a statewide level. This regional review provides a more detailed look at where people have easy driving access to one of six types of outdoor amenities and where residents tend to participate in corresponding activities. Proximity to public outdoor recreation sites with the following amenities was analyzed:

- Analysis A: 5-Mile Proximity to Natural Areas
- Analysis B: 5-Mile Proximity to Water Recreation
- Analysis C: 5-Mile Proximity to Picnicking
- Analysis D: 5-Mile Proximity to Hunting
- Analysis E: 5-Mile Proximity to Fishing
- Analysis F: 5-Mile Proximity to Trails

A list of all local sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources.

Proximity Map Participation Map



III. RESEARCH AND TRENDS

On the proximity maps, areas shaded in dark orange indicate the presence of a high density of recreation sites containing the amenity being studied (natural areas, water recreation, etc.). Areas with lighter shades of orange contain fewer amenities. Gray shading indicates that there may not be a public recreation site with the subject amenity present within five miles of that area. For all analyses only data from Maryland was considered, and as such, gaps along the border may not be a reflection of true access as people can cross the border to use facilities in other states.

Analysis A: 5-Mile Proximity to Natural Areas

All locations included in the inventory were assumed to offer public natural areas. Based on this assumption this proximity map also served to display 5-mile proximity to all inventory locations. Participation rates were based on survey responses that indicate participation in “nature/wildlife related recreation.”

Central: The majority of this region was well served by public recreation sites with natural areas. The largest high-concentration area was in Montgomery County, where participation rates are the highest. The City of Baltimore had the second highest participation rate, but within the City’s urban core, access to natural areas was more limited.

Eastern: There were few dense concentrations of public outdoor recreation sites and areas in multiple counties without any public natural areas within five miles. Given the higher levels of participation in natural area recreation by residents in Talbot, Worcester, Wicomico, and Dorchester counties, additional investigation may be warranted to determine if local needs were being met.

Southern: Over half (55%) of St. Mary’s County residents were likely to participate in natural area recreation, but access appeared more limited in the northwest portion of the county. The highest concentration of public outdoor recreation sites with natural areas were found within sections of Prince George’s, Anne Arundel, and Calvert counties. A number of these sites follow the Patuxent River corridor.

Western: The area between Hagerstown and Frederick, including the stretch of state lands along South Mountain, had the highest concentration of public sites with access to natural areas. Participation was also highest in Washington and Frederick counties in the Western Region. While there are large tracts of state lands in Allegany and Garrett counties, there are fewer county sites, which decreased the density of public natural areas in these counties.



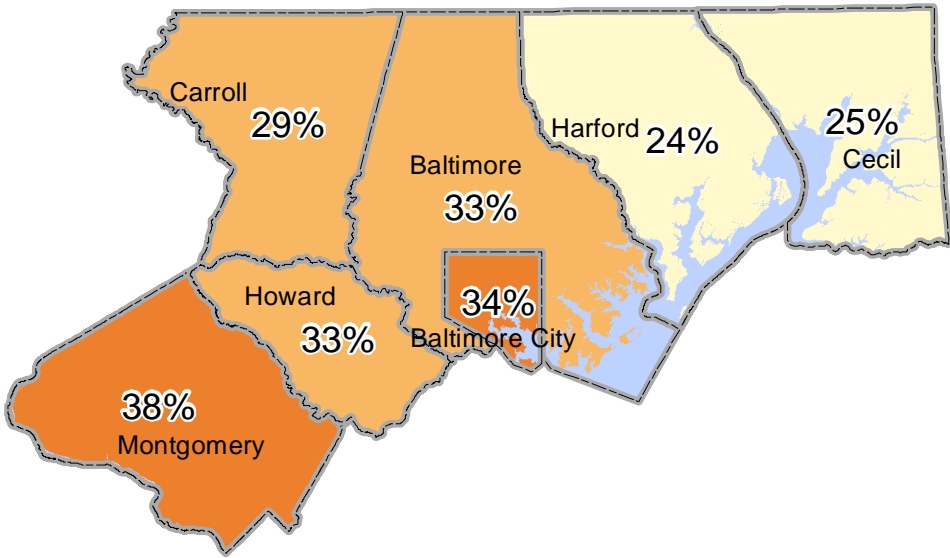
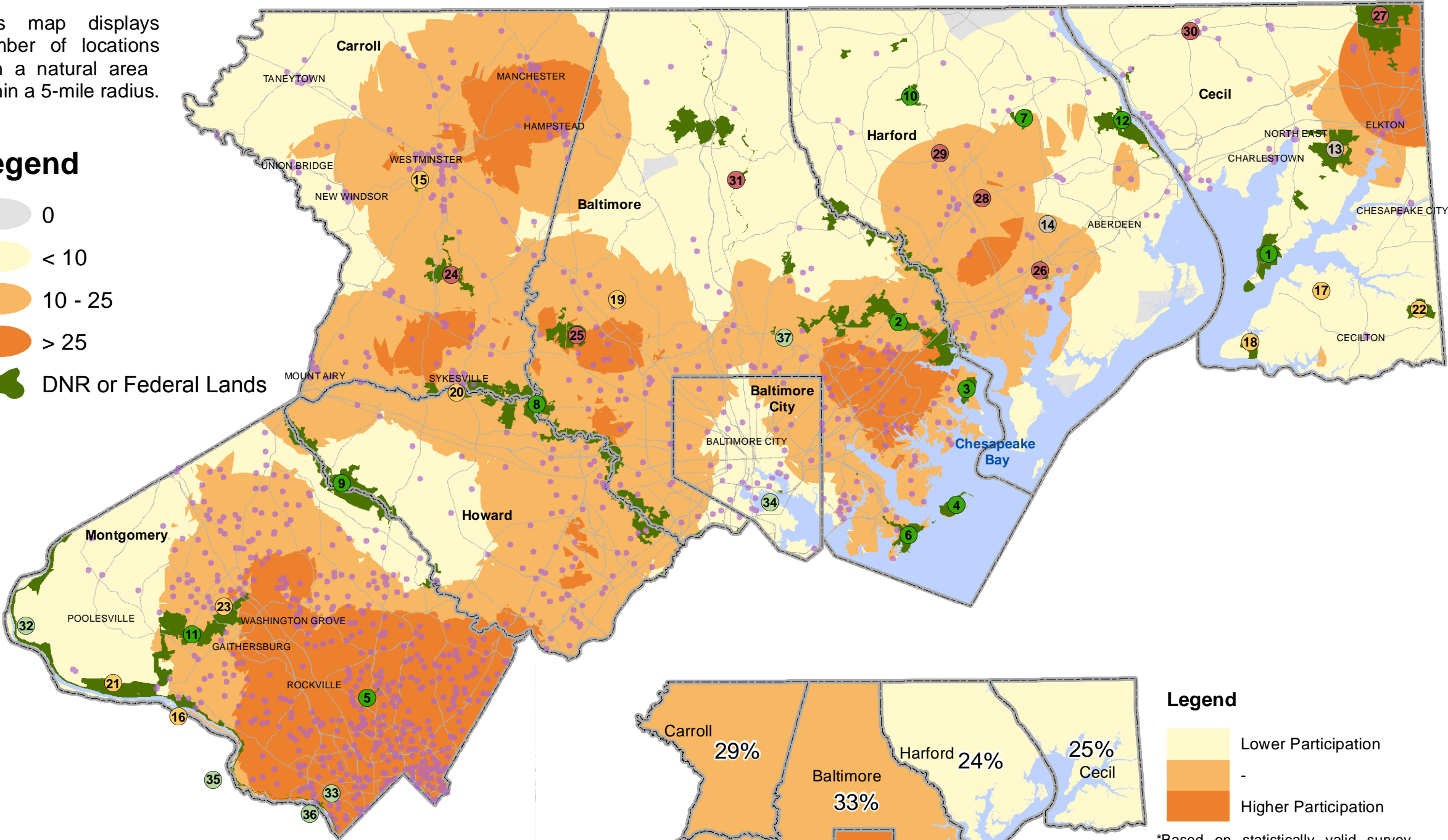
2015 First Day Hike | Cedarville State Forest Photo by Stephen Badger

Map 1A: 5-Mile Proximity to Natural Areas - Central Region

This map displays number of locations with a natural area within a 5-mile radius.

Legend

- 0
- < 10
- 10 - 25
- > 25
- DNR or Federal Lands



Legend

- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in nature/wildlife related recreation.

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ELK NECK SP
- 2 GUNPOWDER FALLS SP
- 3 HAMMERMAN AREA
- 4 HART, MILLER AND PLEASURE ISLANDS SP
- 5 MATTHEW HENSON SP
- 6 NORTH POINT SP
- 7 PALMER SP
- 8 PATAPSCO VALLEY SP
- 9 PATUXENT RIVER SP
- 10 ROCKS SP
- 11 SENECA CREEK SP
- 12 SUSQUEHANNA SP

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

- 15 AVONDALE WMA
- 16 DIERSEN WMA
- 17 EARLEVILLE WMA
- 18 GROVE FARM WMA
- 19 GWYNNBROOK WMA
- 20 HUGG-THOMAS WMA
- 21 MCKEE BESHES WMA
- 22 OLD BOHEMIA WMA
- 23 STRIDER WMA

Other DNR Assets

- 24 MORGAN RUN NEA
- 25 SOLDIERS DELIGHT NEA
- 26 BUSH DECLARATION NRMA
- 27 FAIR HILL NRMA
- 28 BYNUM RUN POND PFA
- 29 FOREST HILL LAKE PFA
- 30 RISING SUN POND PFA
- 31 TORREY C BROWN RAIL TRAIL

Federal Lands

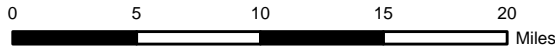
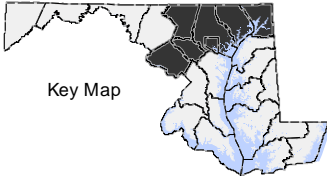
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 2A: 5-Mile Proximity to Natural Areas - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JANES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLWILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with a natural area within a 5-mile radius.

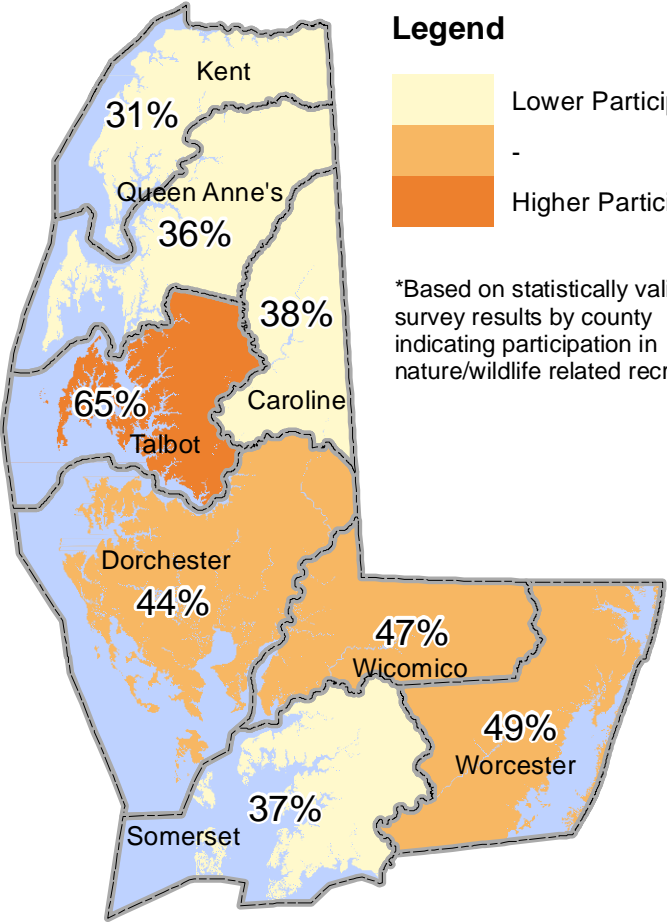
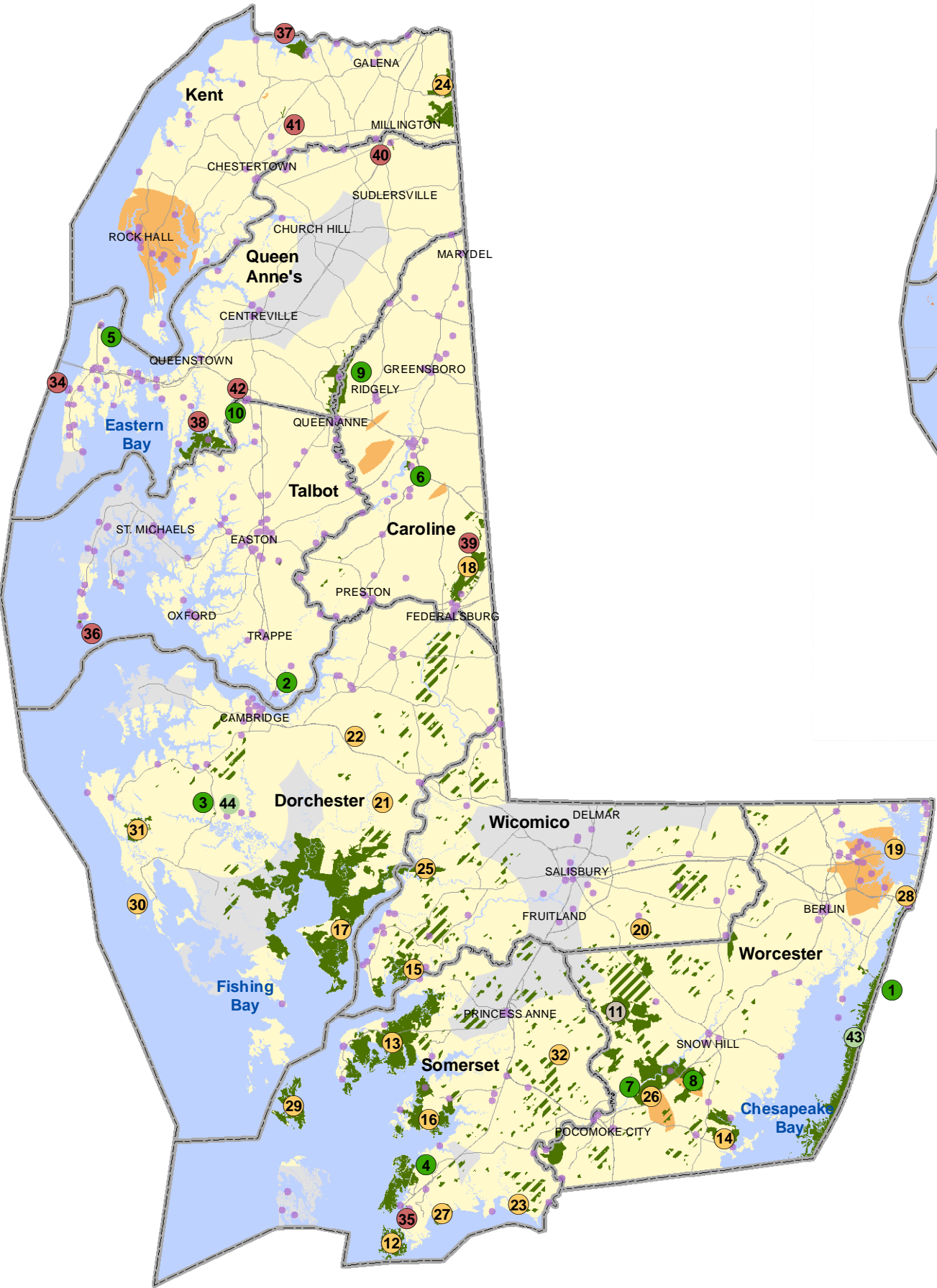
Legend

- 0
- < 10
- 10 - 25
- > 25
- DNR or Federal Lands

Legend

- Lower Participation
-
- Higher Participation

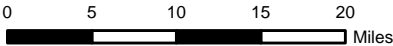
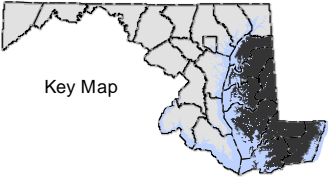
*Based on statistically valid survey results by county indicating participation in nature/wildlife related recreation.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3A: 5-Mile Proximity to Natural Areas - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

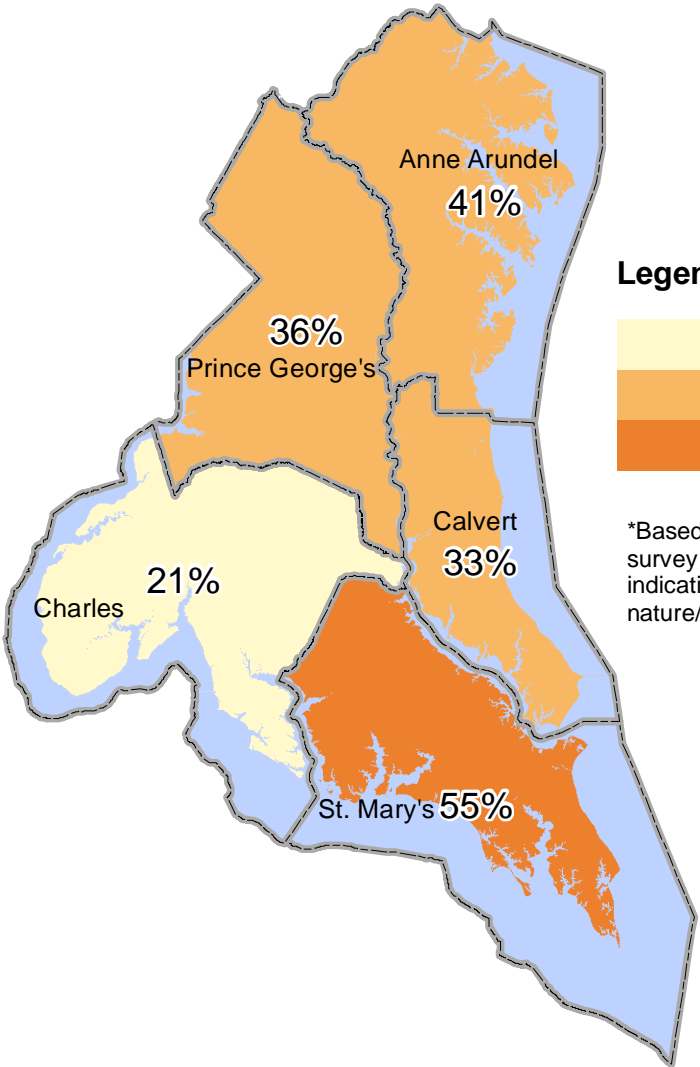
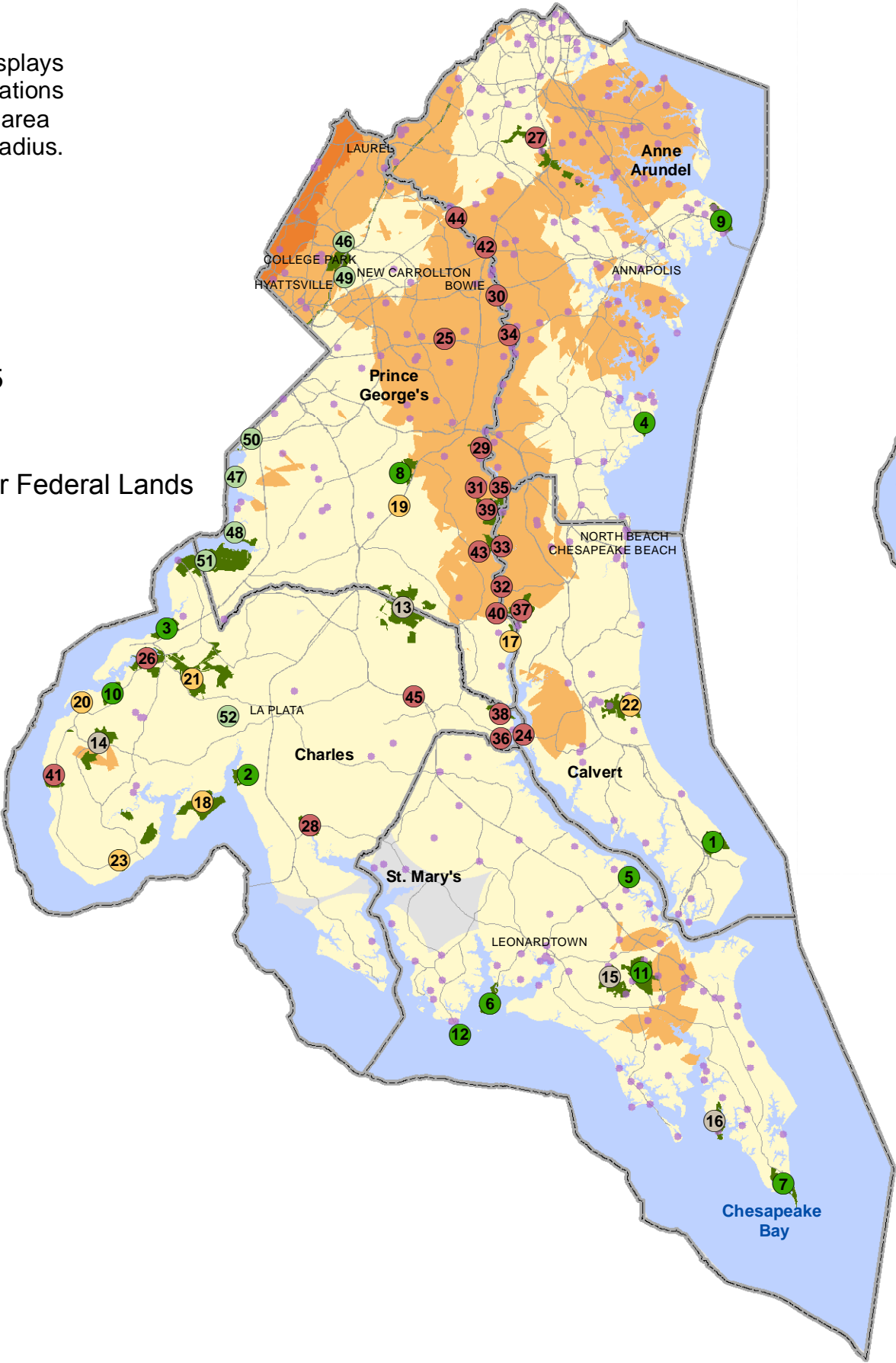
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with a natural area within a 5-mile radius.

Legend

- 0
- < 10
- 10 - 25
- > 25
- DNR or Federal Lands



Legend

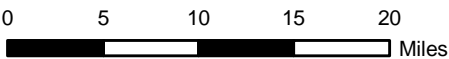
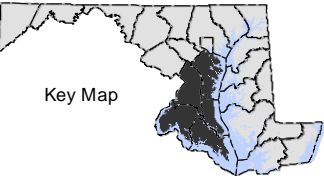
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in nature/wildlife related recreation.

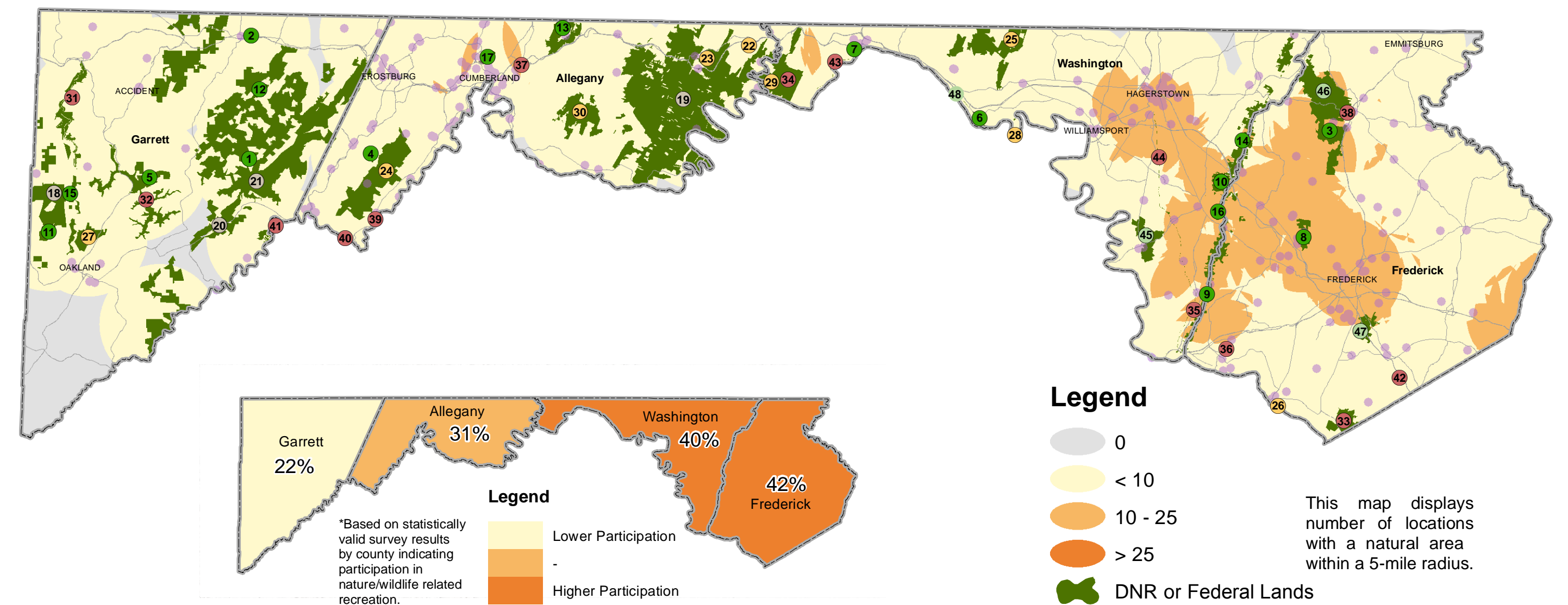
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4A: 5-Mile Proximity to Natural Areas - Western Region



This map displays number of locations within a 5-mile radius.

Sites listed in **bold** were included in this analysis:

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 GREEN RIDGE SF
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 MONOCACY NRMA
- 34 WOODMONT NRMA
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

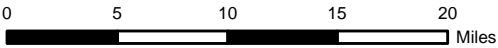
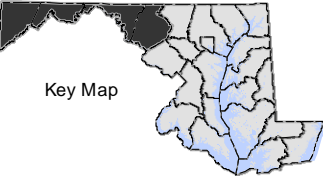
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Analysis B: 5-Mile Proximity to Water Recreation

Central: Participation was spread relatively even throughout the Central Region; highest participation rates were found in Montgomery and Prince George’s counties. Although slightly lower participation rates were found in the northeast counties, these areas have more opportunities to access water recreation along the Chesapeake Bay. There were some gaps to water recreation access in Baltimore and Carroll counties, but these areas physically have fewer bodies of water to access, therefore justifying the analysis results.

Eastern: The Eastern Region had the highest levels of participation in water recreation activities, which makes sense given the nature of the Eastern Shore and the physical area of water surrounding these counties. Areas of the greatest concentration of water recreation access sites were those bordering the Chesapeake Bay. Northern Worcester County also had a high concentration of water access sites near Ocean City and Assateague Island, which face east to the Atlantic Ocean.

Southern: Participation was highest in Anne Arundel, Calvert, and St. Mary’s counties; these counties border the Chesapeake Bay and parts of the Potomac and Patuxent Rivers. Anne Arundel and northern Calvert County had the highest concentrations of water access sites in the region. There seems to be more opportunities in Charles County to provide water recreation sites on the Potomac River.

Western: Participation rates for water recreation did not reach over 54% in the Western Region. The Western Region is the only region of the state that does not border the Chesapeake Bay. Participation rates may be lower in this region for water recreation but participation rates for outdoor recreation related to natural areas and trails are highest. There are water recreation sites in Western Maryland along the Chesapeake and Ohio Canal National Historical Park (C&O Canal). Areas of concentration fall on Deep Creek Lake, Savage River State Forest, and Swallow Falls State Park.



Big Spray by Paula Neumann

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5-Mile Proximity to Water Recreation - Central Region



This map displays number of locations with water recreation* within a 5-mile radius.

LEGEND

0 Sites

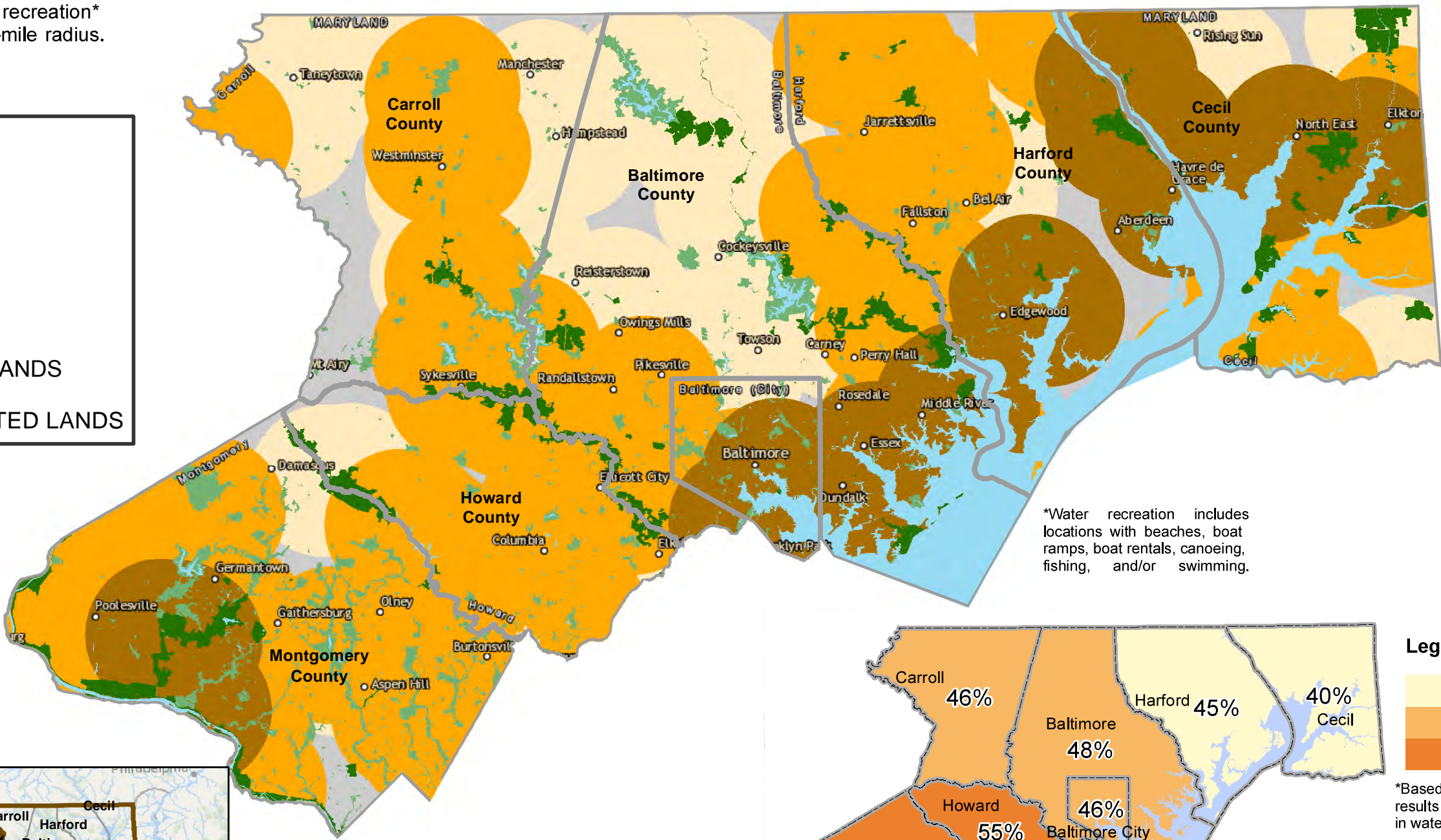
< 5 Sites

5-15 Sites

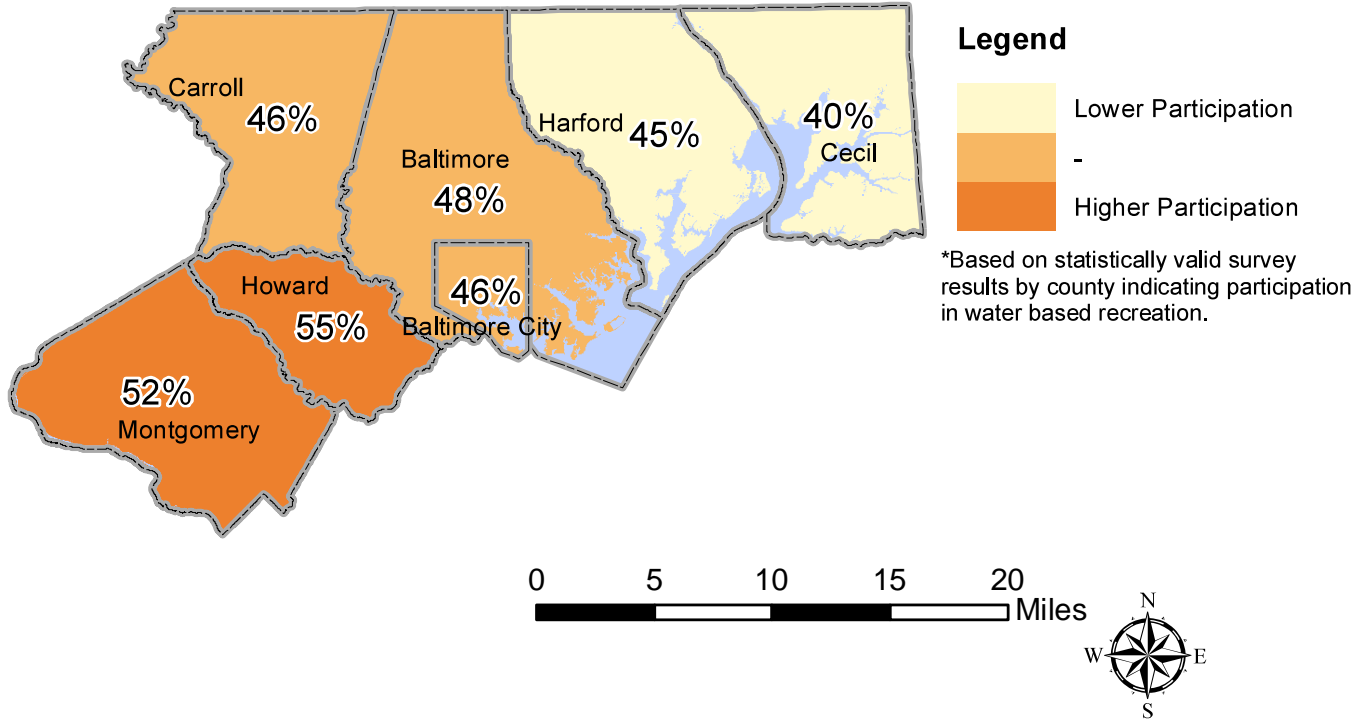
> 15 Sites

DNR or FEDERAL LANDS

COUNTY PROTECTED LANDS



*Water recreation includes locations with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming.

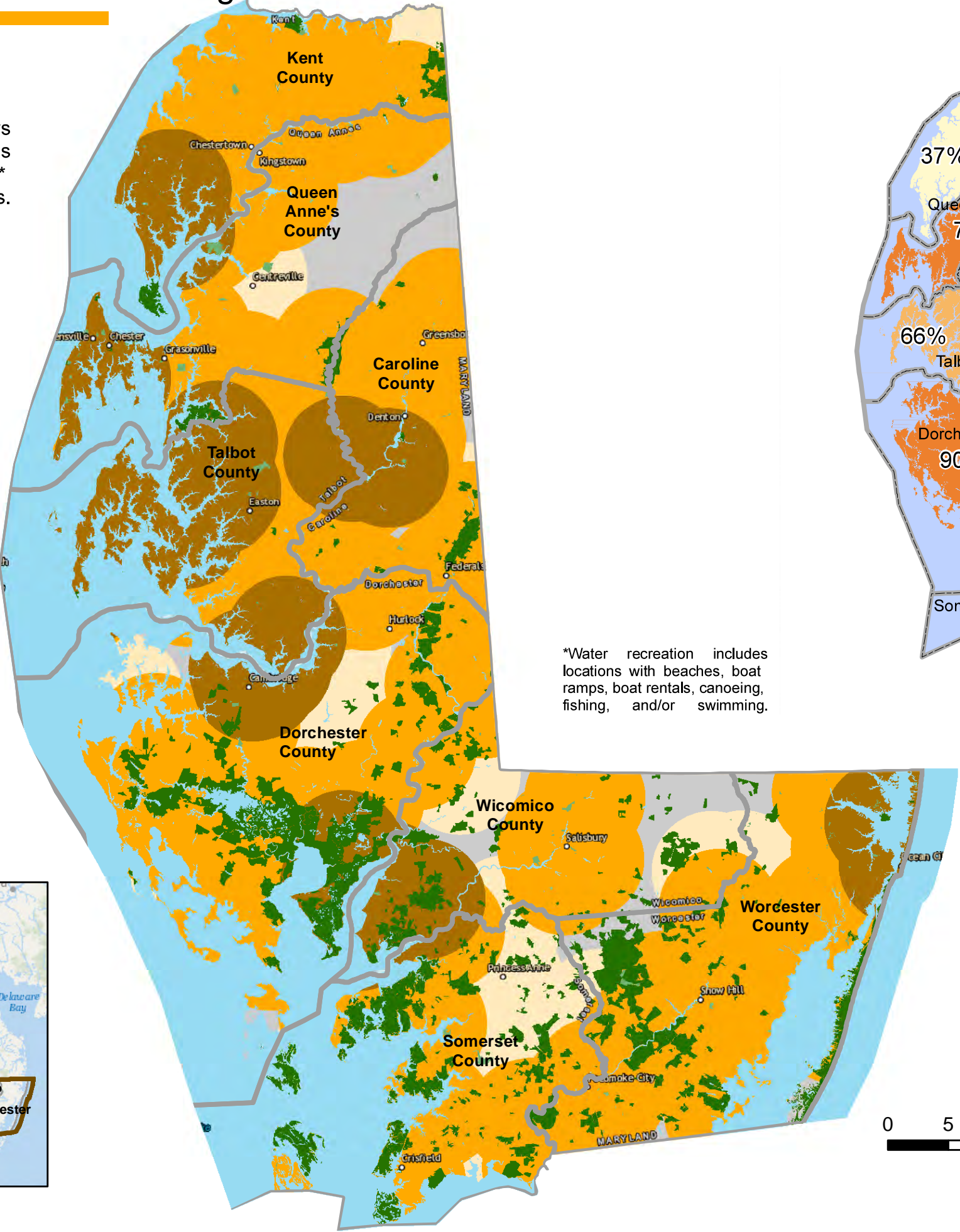
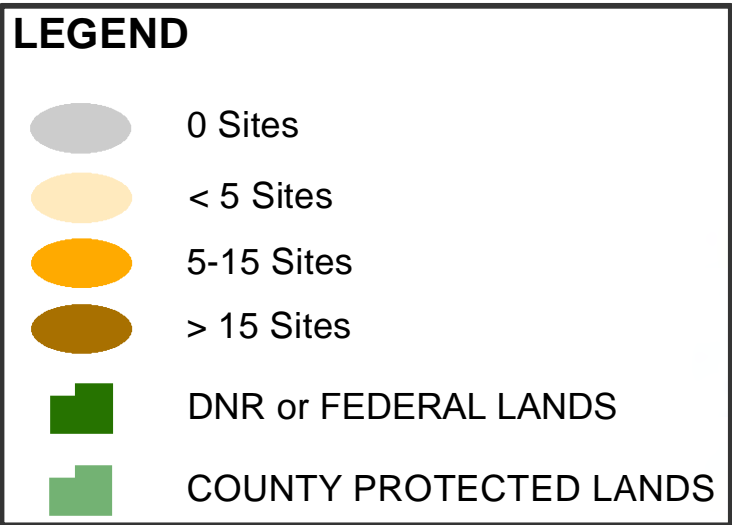


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

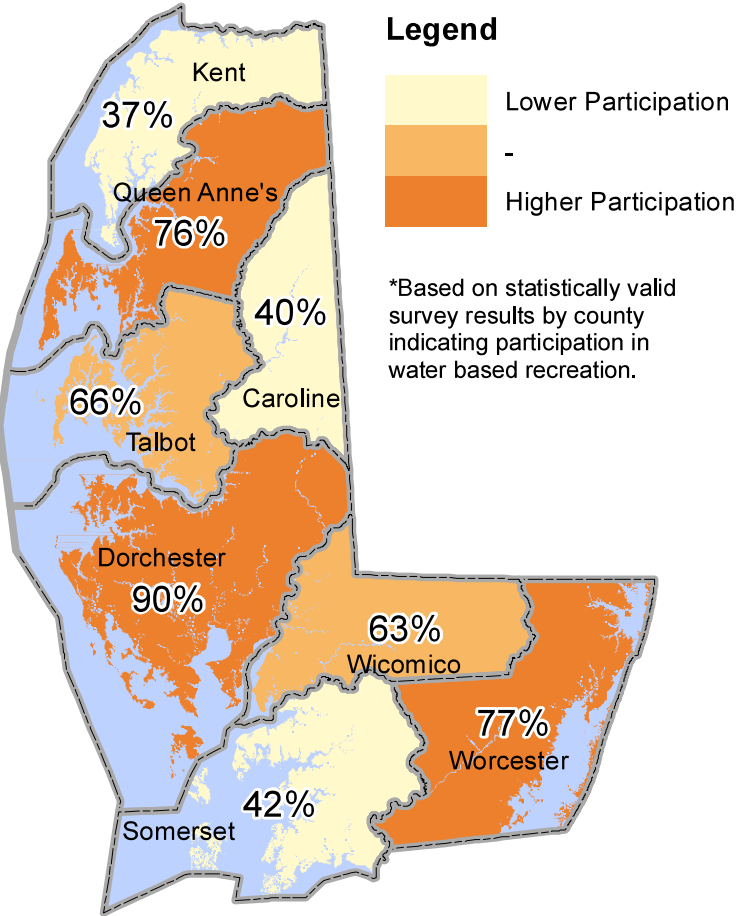
5-Mile Proximity to Water Recreation - Eastern Region



This map displays number of locations with water recreation* within a 5-mile radius.



*Water recreation includes locations with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming.



*Based on statistically valid survey results by county indicating participation in water based recreation.

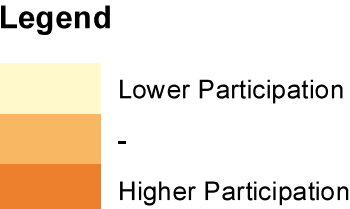
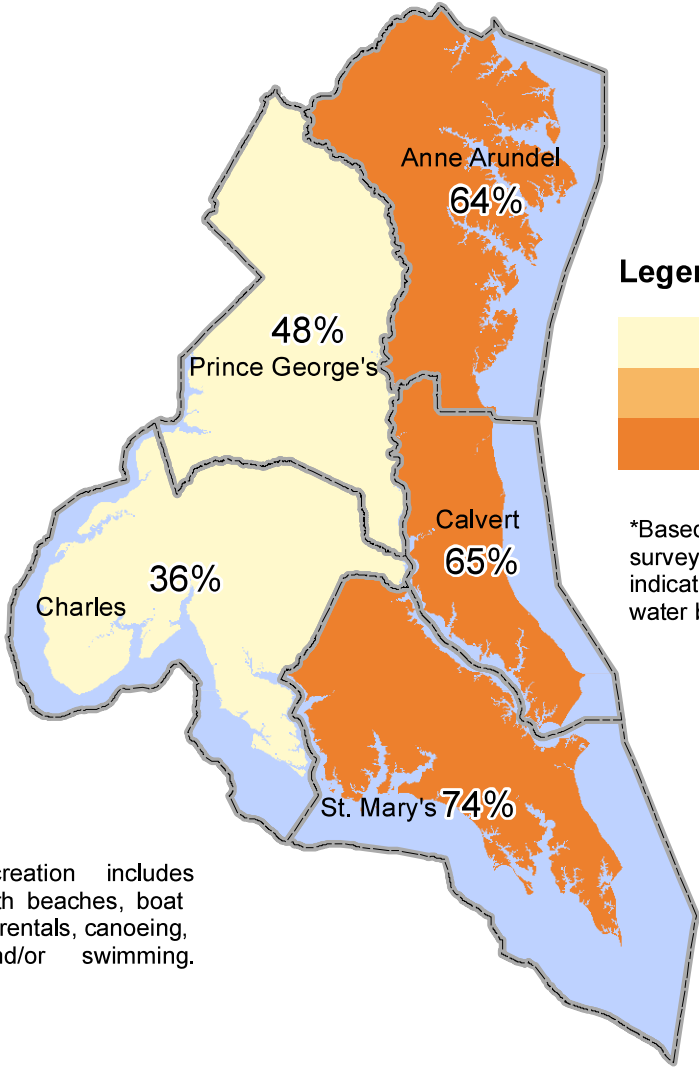
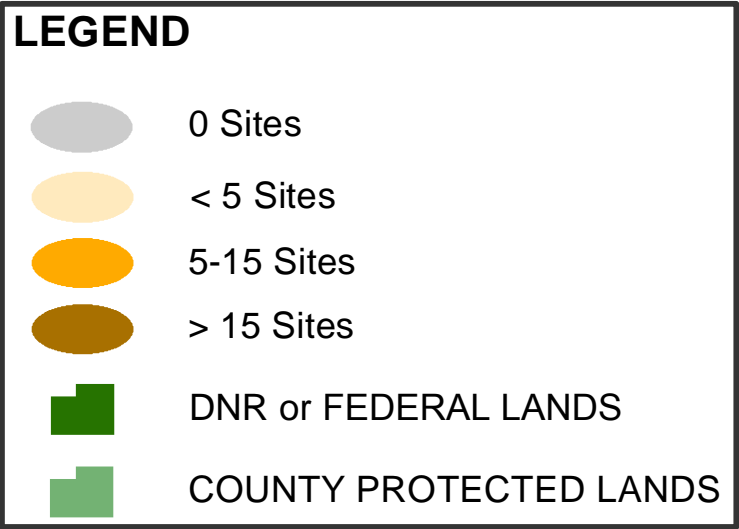
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.



5-Mile Proximity to Water Recreation - Southern Region

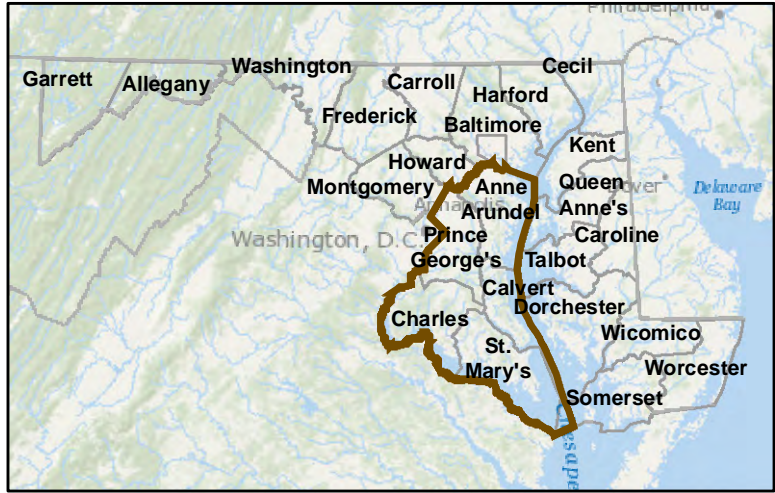


This map displays number of locations with water recreation* within a 5-mile radius.



*Based on statistically valid survey results by county indicating participation in water based recreation.

*Water recreation includes locations with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming.



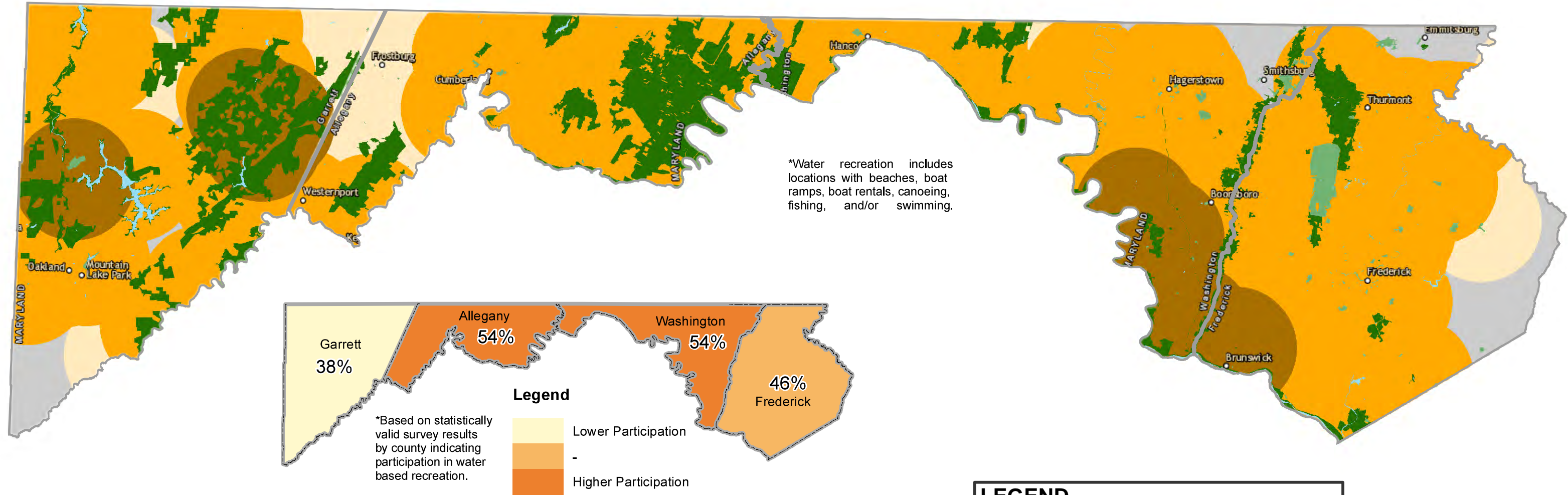
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.



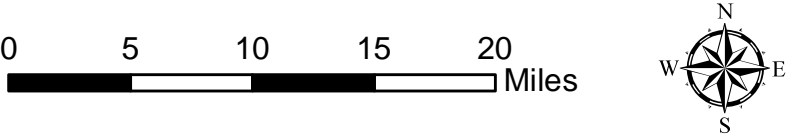
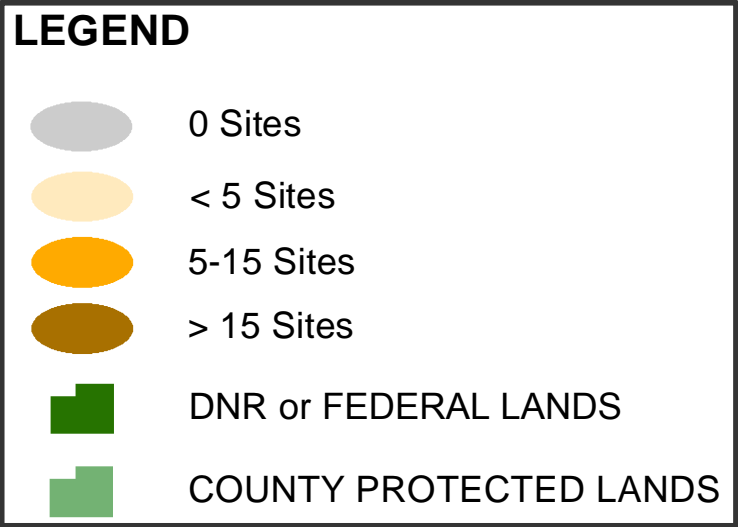
5-Mile Proximity to Water Recreation - Western Region



This map displays number of locations with water recreation* within a 5-mile radius.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.



Analysis C: 5-Mile Proximity to Picnicking

This analysis focused on all inventory locations with at least one picnic table. Participation rates are based on respondent participation in “picnicking” as an activity.

Central: There was a strong density of public outdoor recreation sites with picnic amenities through most of the region. Harford and Carroll counties had the lowest rates of participation in picnicking, but had good opportunities for participation. The City of Baltimore had the highest rate of participation, and the entire city appeared to have a strong density of outdoor recreation sites that provide opportunities to picnic.

Eastern: Kent and Queen Anne’s counties had the lowest levels of participation in picnicking and fewest public lands offering opportunities to participate. Most of Caroline, Talbot, and Worcester counties had between five and 15 sites with public picnicking opportunities within five miles of one another.

Southern: The majority of Anne Arundel County and southern St. Mary’s County had a strong density of public outdoor recreation sites with opportunities for picnicking. Few areas in the Southern Region were further than five miles away from such a site.

Western: Few areas in the Western Region were further than five miles from a public outdoor recreation site with picnicking facilities. Areas with the highest concentration of sites with these amenities were in the areas west of Hagerstown and west of Cumberland.



Photo by Stephen Badger, DNR Office of Communications

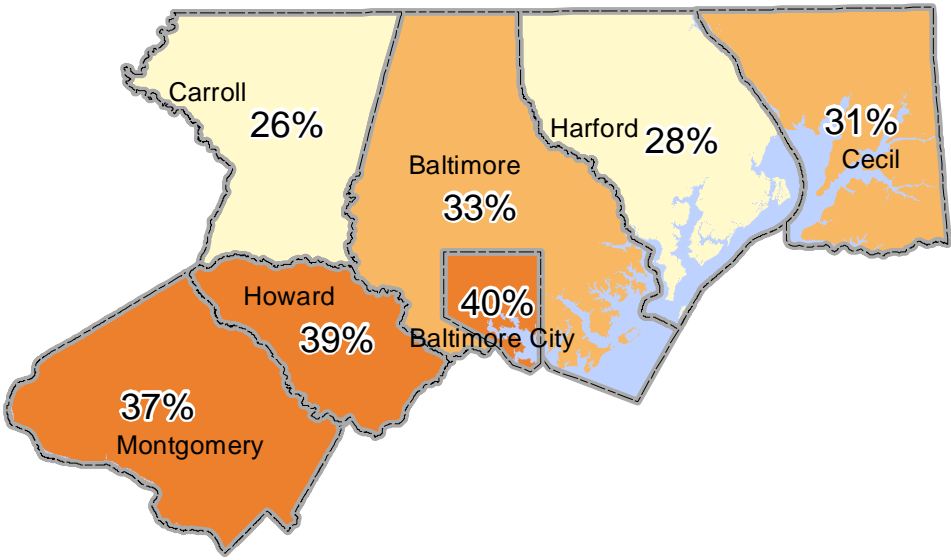
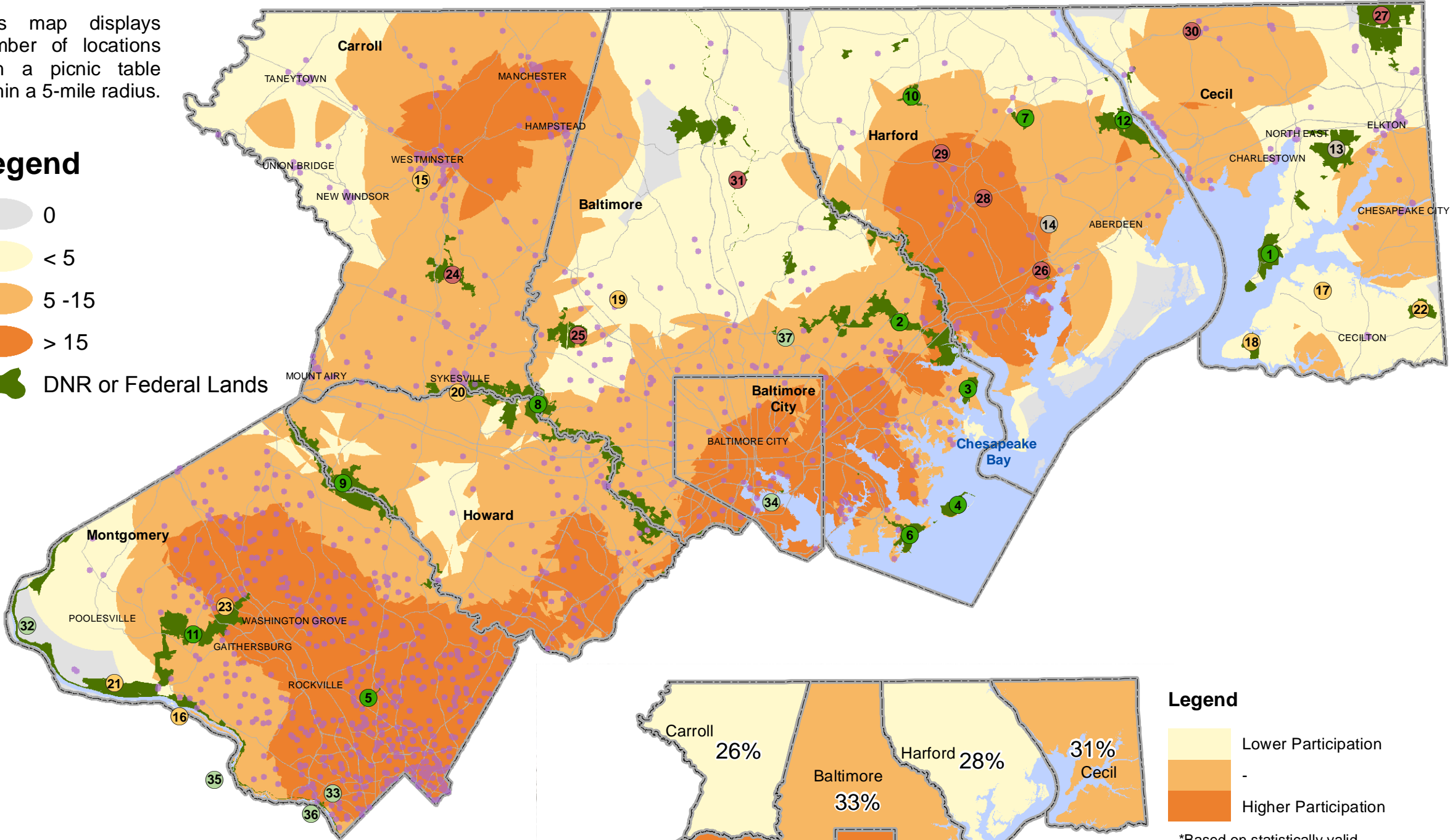
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Map 1C: 5-Mile Proximity to Picnicking - Central Region

This map displays number of locations with a picnic table within a 5-mile radius.

Legend

- 0
- < 5
- 5 -15
- > 15
- DNR or Federal Lands



Legend

- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in picnicking.

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ELK NECK SP
- 2 GUNPOWDER FALLS SP
- 3 HAMMERMAN AREA
- 4 HART, MILLER AND PLEASURE ISLANDS SP
- 5 MATTHEW HENSON SP
- 6 NORTH POINT SP
- 7 PALMER SP
- 8 PATAPSCO VALLEY SP
- 9 PATUXENT RIVER SP
- 10 ROCKS SP
- 11 SENECA CREEK SP
- 12 SUSQUEHANNA SP

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

- 15 AVONDALE WMA
- 16 DIERSEN WMA
- 17 EARLEVILLE WMA
- 18 GROVE FARM WMA
- 19 GWYNNBROOK WMA
- 20 HUGG-THOMAS WMA
- 21 MCKEE BESHES WMA
- 22 OLD BOHEMIA WMA
- 23 STRIDER WMA

Other DNR Assets

- 24 MORGAN RUN NEA
- 25 SOLDIERS DELIGHT NEA
- 26 BUSH DECLARATION NRMA
- 27 FAIR HILL NRMA
- 28 BYNUM RUN POND PFA
- 29 FOREST HILL LAKE PFA
- 30 RISING SUN POND PFA
- 31 TORREY C BROWN RAIL TRAIL

Federal Lands

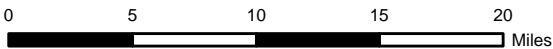
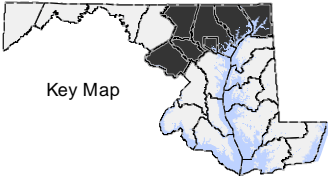
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 2C: 5-Mile Proximity to Picnicking - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JAMES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLVILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

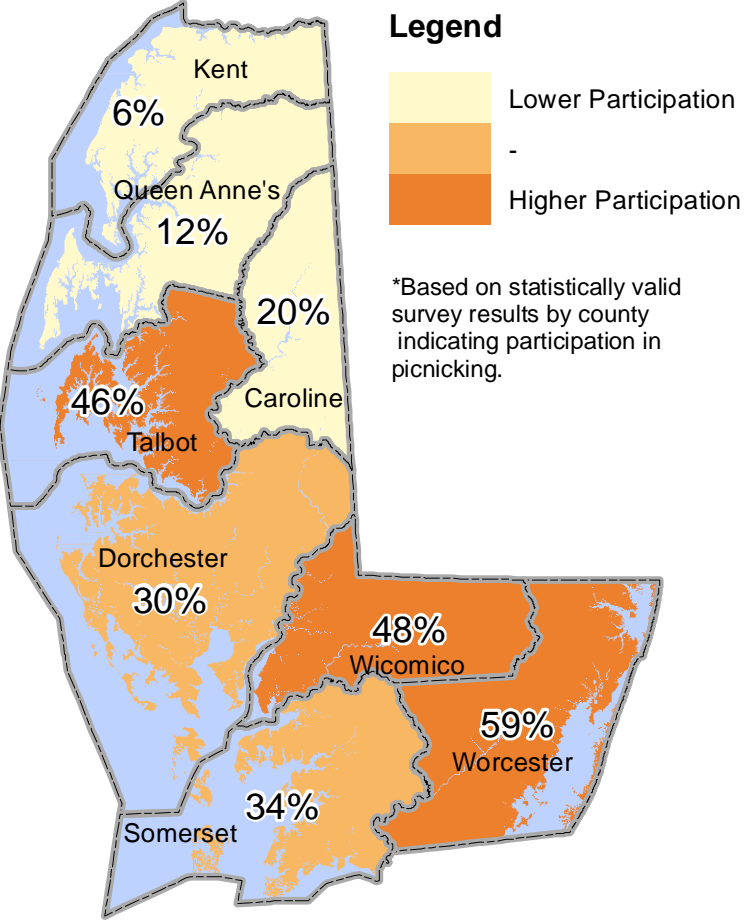
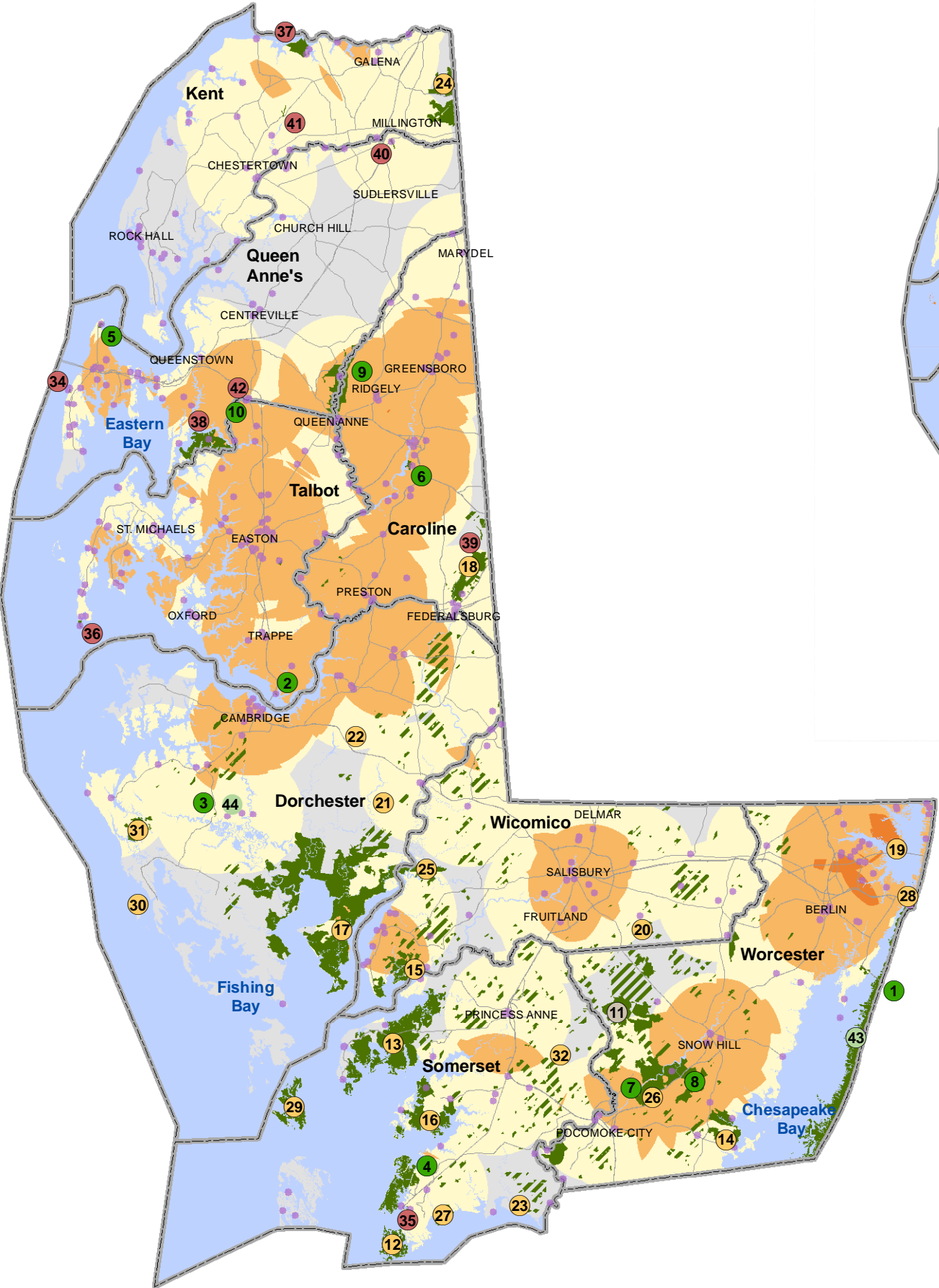
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with a picnic table within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Lands

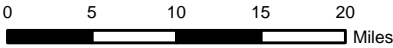
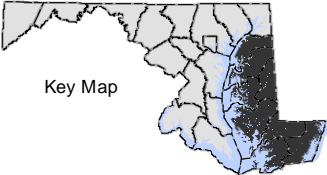


*Based on statistically valid survey results by county indicating participation in picnicking.

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3C: 5-Mile Proximity to Picnicking - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

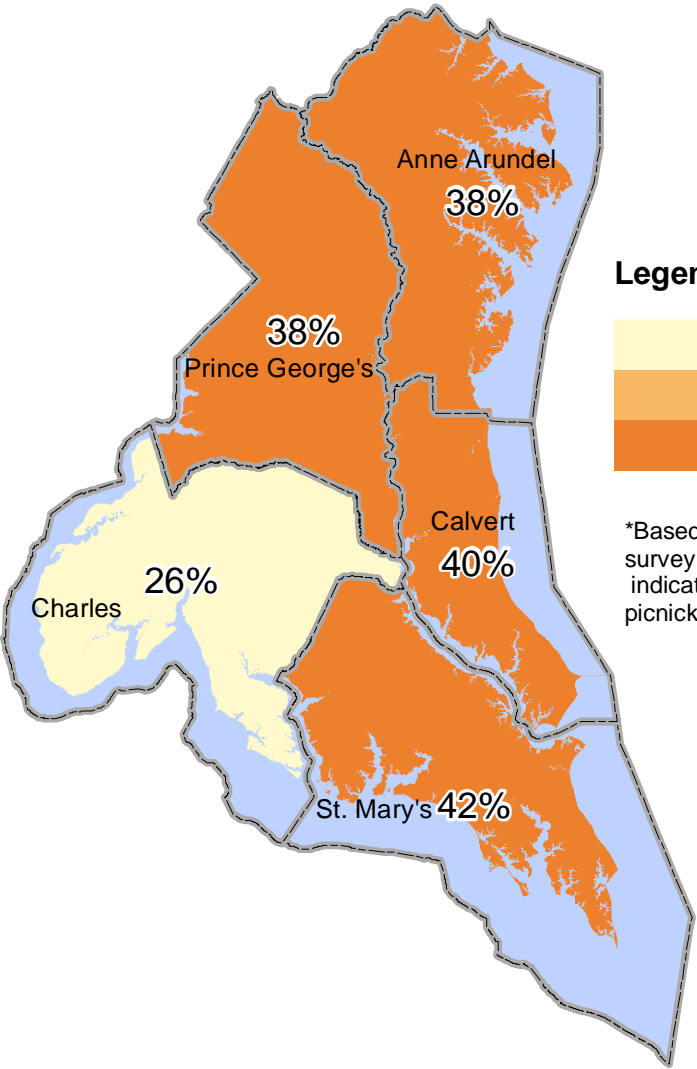
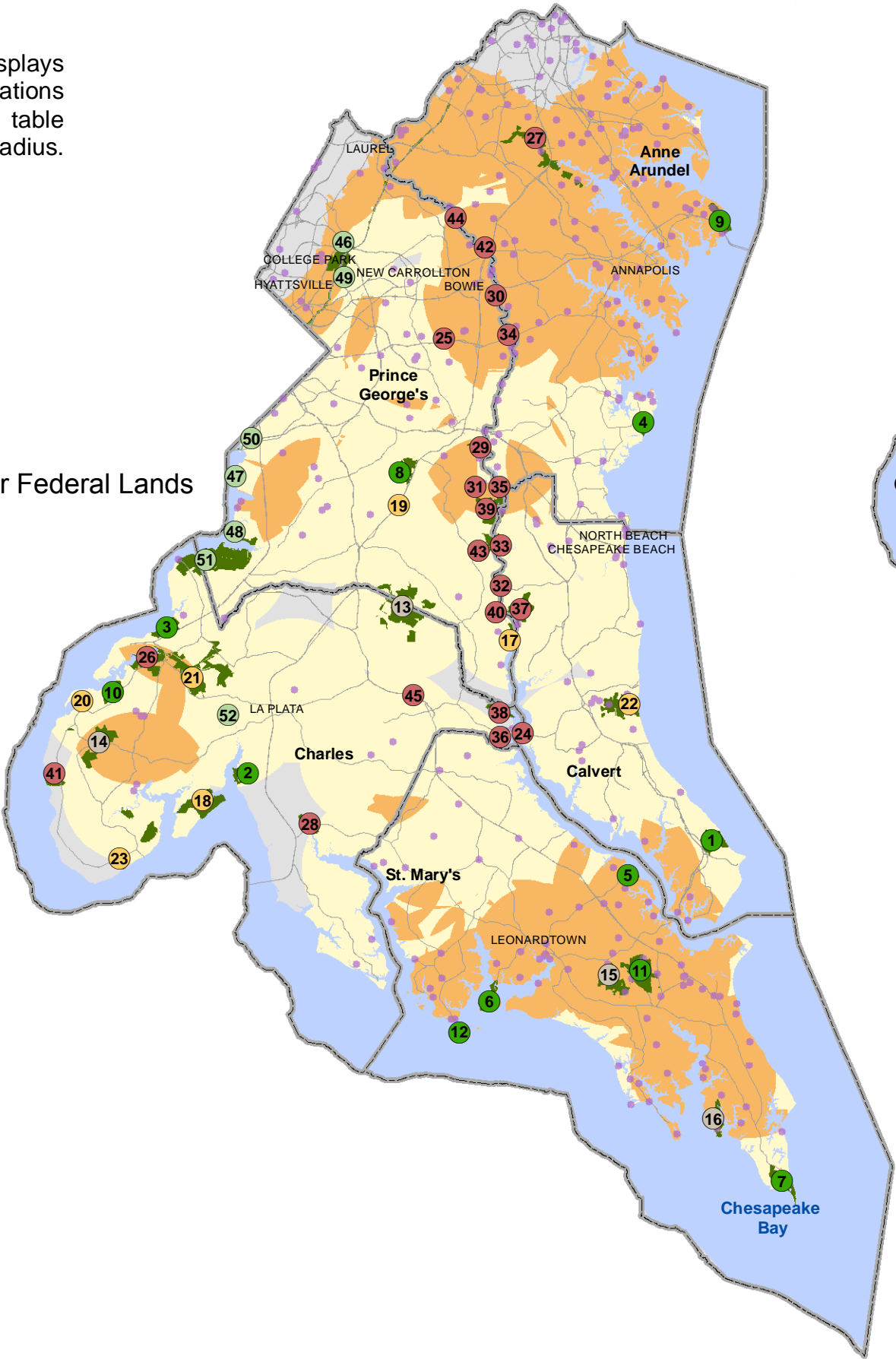
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with a picnic table within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Lands



Legend

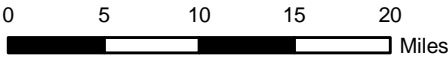
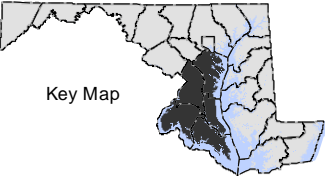
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in picnicking.

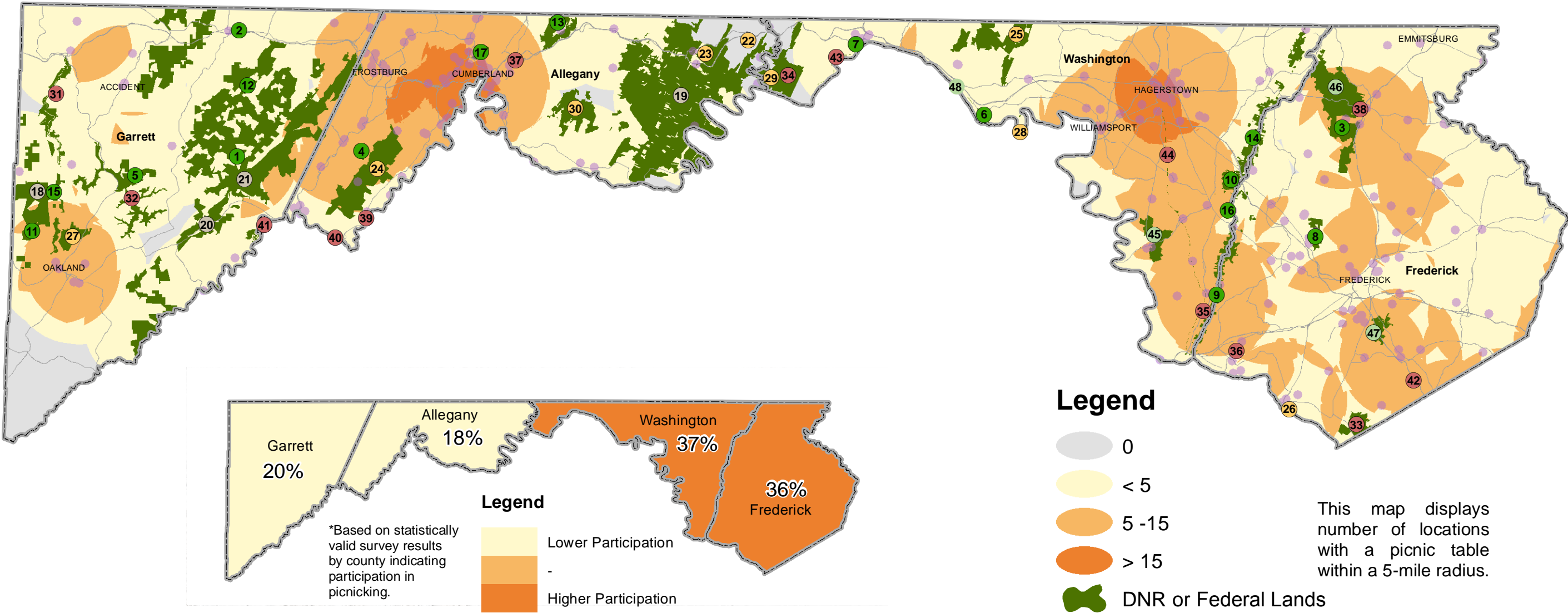
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4C: 5-Mile Proximity to Picnicking - Western Region



Sites listed in **bold** were included in this analysis:

State Parks

- 1 **BIG RUN SP**
- 2 **CASSELMAN BRIDGE SP**
- 3 **CUNNINGHAM FALLS SP**
- 4 **DANS MOUNTAIN SP**
- 5 **DEEP CREEK LAKE SP**
- 6 **FORT FREDERICK SP**
- 7 **FORT TONOLOWAY SP**
- 8 **GAMBRILL SP**
- 9 **GATHLAND SP**
- 10 **GREENBRIER SP**
- 11 **HERRINGTON MANOR SP**
- 12 **NEW GERMANY SP**
- 13 **ROCKY GAP SP**
- 14 **SOUTH MOUNTAIN SP**
- 15 **SWALLOW FALLS SP**
- 16 **WASHINGTON MONUMENT SP**
- 17 **WILLS MOUNTAIN SP**

State Forests

- 18 **GARRETT SF**
- 19 **GREEN RIDGE SF**
- 20 **POTOMAC SF**
- 21 **SAVAGE RIVER SF**

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 **YOUGHIOGHENY RIVER NEA**
- 32 **DEEP CREEK LAKE NRMA**
- 33 **MONOCACY NRMA**
- 34 **WOODMONT NRMA**
- 35 **BROWNSVILLE POND PFA**
- 36 **BRUNSWICK POND PFA**
- 37 **EVITTS CREEK POND PFA**
- 38 **FRANK BENTZ POND PFA**
- 39 **GARY A YODER PFA**
- 40 **MCCOOLE PFA**
- 41 **NORTH BRANCH POTOMAC PFA**
- 42 **URBANA LAKE PFA**
- 43 **WESTERN MARYLAND RAIL TRAIL**
- 44 **WEVERTON ROXBURY CORRIDOR RAIL TRAIL**

Federal Lands

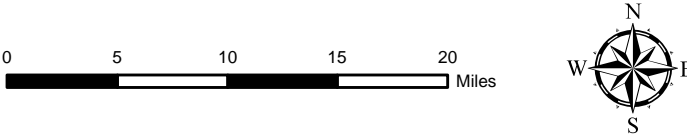
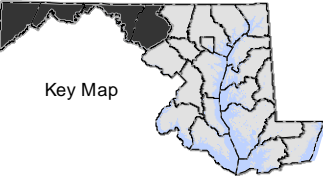
- 45 **ANTIETAM NATIONAL BATTLEFIELD**
- 46 **CATOCTIN MOUNTAIN PARK**
- 47 **MONOCACY NATIONAL BATTLEFIELD**
- 48 **CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK**

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Analysis D: 5-Mile Proximity to Hunting

Central: The Central Region had the least coverage for public hunting opportunities of all four regions in Maryland. This region is the most populated and has the lowest levels of participation rates for hunting compared to any other region. This region is home to the Department's largest state parks, such as Patapsco Valley, Patuxent River, and Gunpowder Falls, which provide natural resource related recreation to thousands of visitors from all over the state, and particularly from nearby Baltimore City and the District of Columbia.

Eastern: The Eastern Region had the highest levels of participation in hunting compared to any other region in Maryland. The Eastern Region currently has more wildlife management areas available for hunting than any other region in the state. Caroline County had the highest levels of participation rates (59%) for hunting, and Kent County came in a close second (50%). Kent County currently has the highest concentration of public hunting sites in the Eastern Region.

Southern: Hunting participation rates in the Southern Region did not reach over 27%. Hunting site concentrations were lowest in Anne Arundel County, which has a high population but an average participation rate in hunting compared to the rest of the region.

Western: Hunting participation rates in the Western Region reached up to 48% (Allegany County) and not fall below 14% (Frederick County). Hiking and natural area rates of participation were highest in the Western Region, and many of the sites for these activities overlap with public hunting sites. Frederick County has the least participation rates for hunting and has the least amount of public hunting site coverage in the Western Region.



*2015 National Hunting and Fishing Day
Wildlife and Heritage Service*

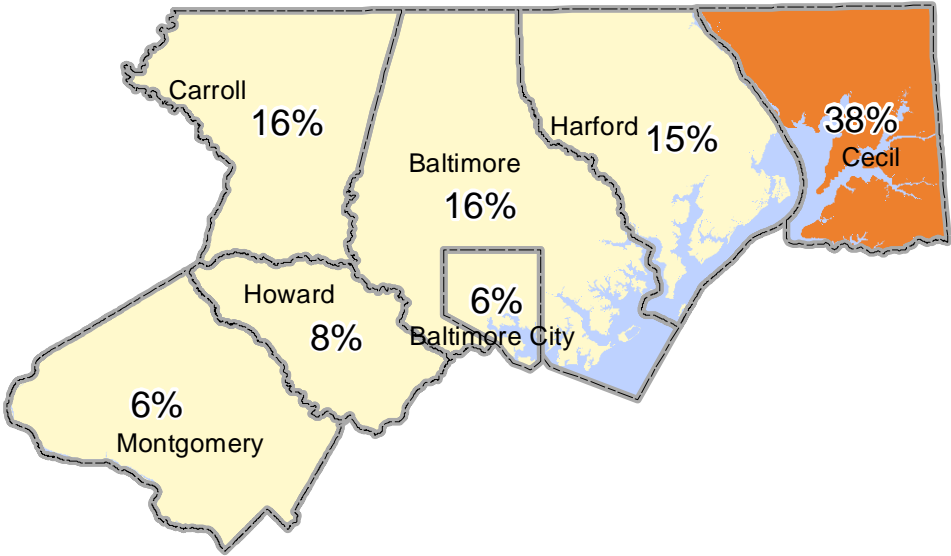
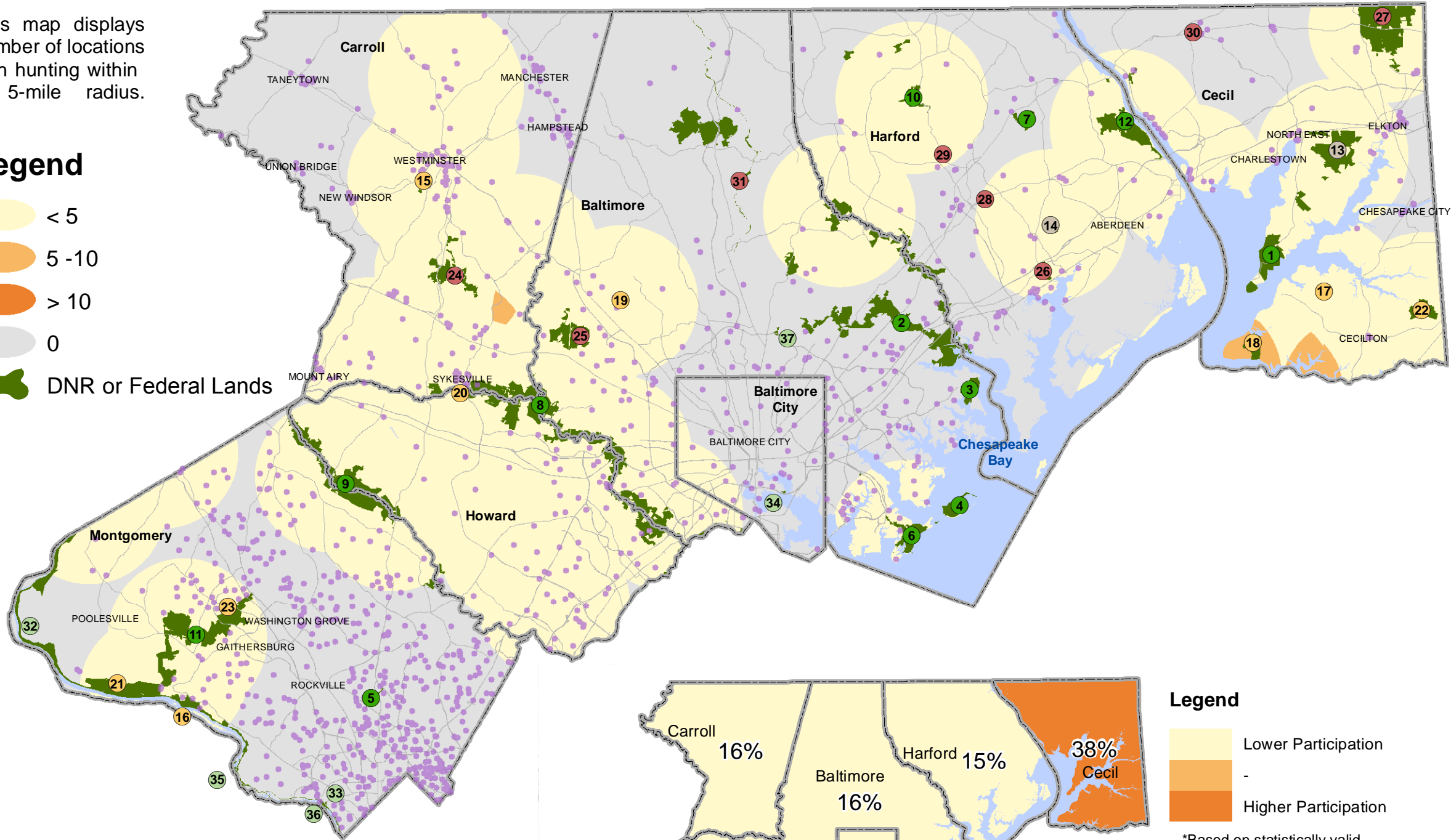
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Map 1D: 5-Mile Proximity to Hunting - Central Region

This map displays number of locations with hunting within a 5-mile radius.

Legend

- < 5
- 5 -10
- > 10
- 0
- DNR or Federal Lands



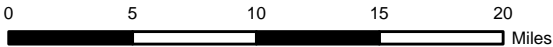
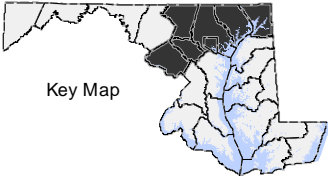
- Legend
- Lower Participation
 -
 - Higher Participation
- *Based on statistically valid survey results by county indicating participation in hunting.

- Sites listed in **bold** were included in this analysis:
- State Parks**
- 1 ELK NECK SP
 - 2 GUNPOWDER FALLS SP
 - 3 HAMMERMAN AREA
 - 4 HART, MILLER AND PLEASURE ISLANDS SP
 - 5 MATTHEW HENSON SP
 - 6 NORTH POINT SP
 - 7 PALMER SP
 - 8 PATAPSCO VALLEY SP
 - 9 PATUXENT RIVER SP
 - 10 ROCKS SP
 - 11 SENECA CREEK SP
 - 12 SUSQUEHANNA SP
- State Forests**
- 13 ELK NECK SF
 - 14 STONEY DEMONSTRATION SF
- Wildlife Management Areas**
- 15 AVONDALE WMA
 - 16 DIERSEN WMA
 - 17 EARLEVILLE WMA
 - 18 GROVE FARM WMA
 - 19 GWYNNBROOK WMA
 - 20 HUGG-THOMAS WMA
 - 21 MCKEE BESHES WMA
 - 22 OLD BOHEMIA WMA
 - 23 STRIDER WMA
- Other DNR Assets**
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL
- Federal Lands**
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
 - 33 CLARA BARTON NATIONAL HISTORIC SITE
 - 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
 - 35 GEORGE WASHINGTON MEMORIAL PARKWAY
 - 36 GLEN ECHO PARK
 - 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

- Acronym Key**
- SP State Park
 - SF State Forest
 - WMA Wildlife Management Area
 - NEA Natural Environment Area
 - NRMA Natural Resource Management Area
 - PFA Public Fishing Area



Map 2D: 5-Mile Proximity to Hunting - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 **ASSATEAGUE SP**
- 2 **BILL BURTON SP**
- 3 **HARRIET TUBMAN SP**
- 4 **JANES ISLAND SP**
- 5 **LOVE POINT SP**
- 6 **MARTINAK SP**
- 7 **MILBURN LANDING AREA**
- 8 **SHAD LANDING AREA**
- 9 **TUCKAHOE SP**
- 10 **WYE OAK SP**

State Forests

- 11 **POCOMOKE RIVER SF**

Wildlife Management Areas

- 12 **CEDAR ISLAND WMA**
- 13 **DEAL ISLAND WMA**
- 14 **E.A. VAUGHN WMA**
- 15 **ELLIS BAY WMA**
- 16 **FAIRMOUNT WMA**
- 17 **FISHING BAY WMA**
- 18 **IDYLVILD WMA**
- 19 **ISLE OF WIGHT WMA**
- 20 **JOHNSON WMA**
- 21 **LECOMPTE WMA**
- 22 **LINKWOOD WMA**
- 23 **MARYLAND MARINE PROPERTIES WMA**
- 24 **MILLINGTON WMA**
- 25 **NANTICOKE RIVER WMA**
- 26 **POCOMOKE RIVER WMA**
- 27 **POCOMOKE SOUND WMA**
- 28 **SINEPUXENT BAY WMA**
- 29 **SOUTH MARSH ISLAND WMA**
- 30 **TAR BAY WMA**
- 31 **TAYLORS ISLAND WMA**
- 32 **WELLINGTON WMA**

Other DNR Assets

- 33 **CHESAPEAKE FOREST LANDS***
- 34 **MATAPEAKE**
- 35 **SOMERS COVE MARINA**
- 36 **BLACK WALNUT POINT NRMA**
- 37 **SASSAFRASS NRMA**
- 38 **WYE ISLAND NRMA**
- 39 **SMITHVILLE LAKE PFA**
- 40 **UNICORN LAKE PFA**
- 41 **URIEVILLE LAKE PFA**
- 42 **WYE MILLS PFA**

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 **ASSATEAGUE ISLAND NATIONAL SEASHORE**
- 44 **BLACKWATER NATIONAL WILDLIFE REFUGE**

County Properties

This map displays number of locations with hunting within a 5-mile radius.

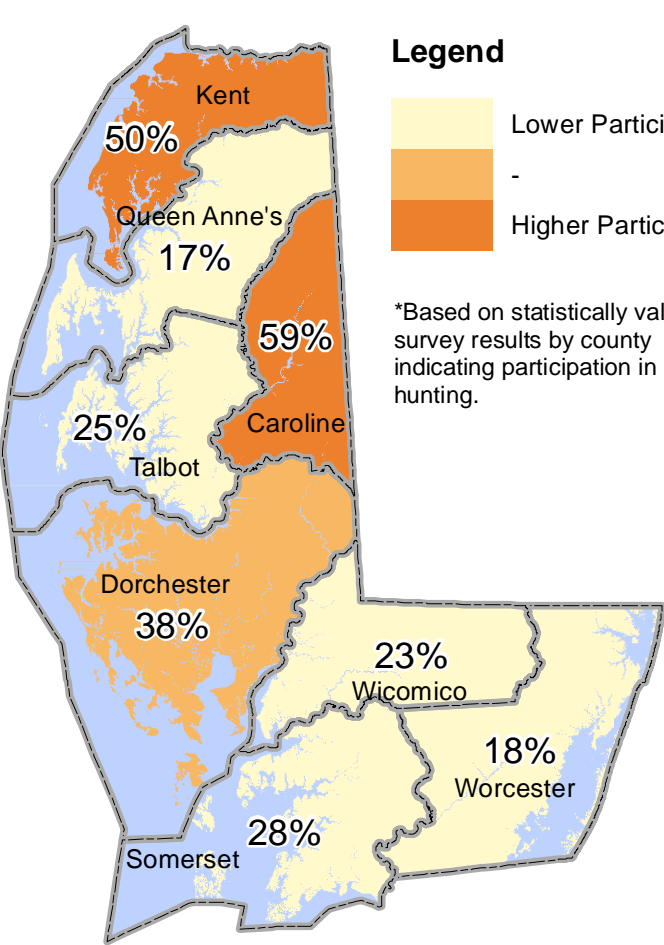
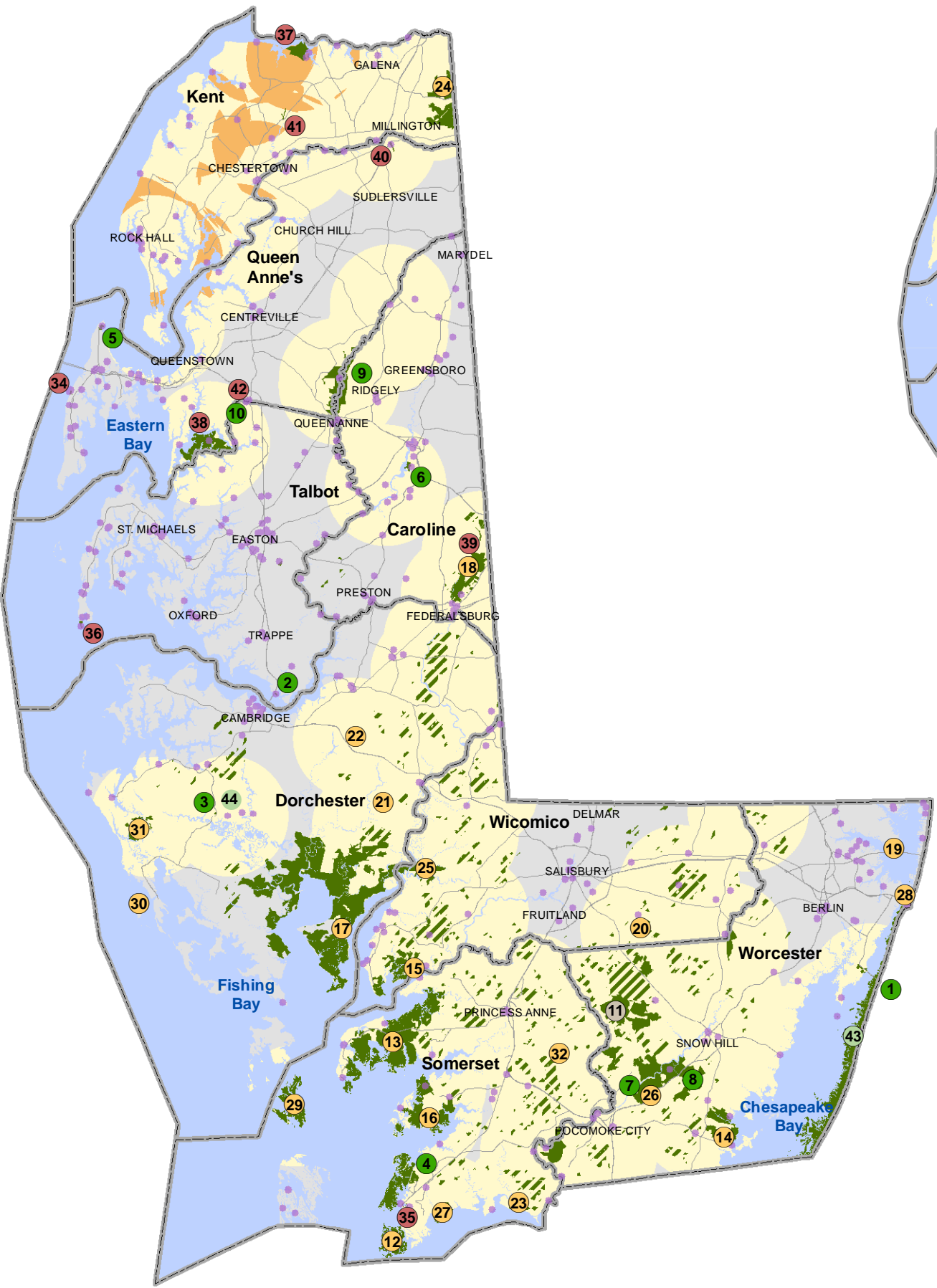
Legend

- < 5
- 5 - 10
- > 10
- 0
- DNR or Federal Lands

Legend

- Lower Participation
-
- Higher Participation

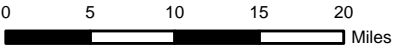
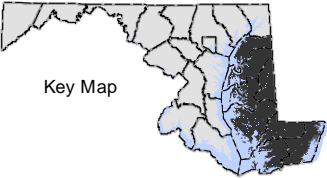
*Based on statistically valid survey results by county indicating participation in hunting.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3D: 5-Mile Proximity to Hunting - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 **BELT WOODS NEA**
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 **ZEKIAH SWAMP NEA**
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 **INDIAN CREEK NRMA**
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 **NANJEMOY NRMA**
- 42 PRIDE FINANCE NRMA
- 43 **SPICE CREEK NRMA**
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

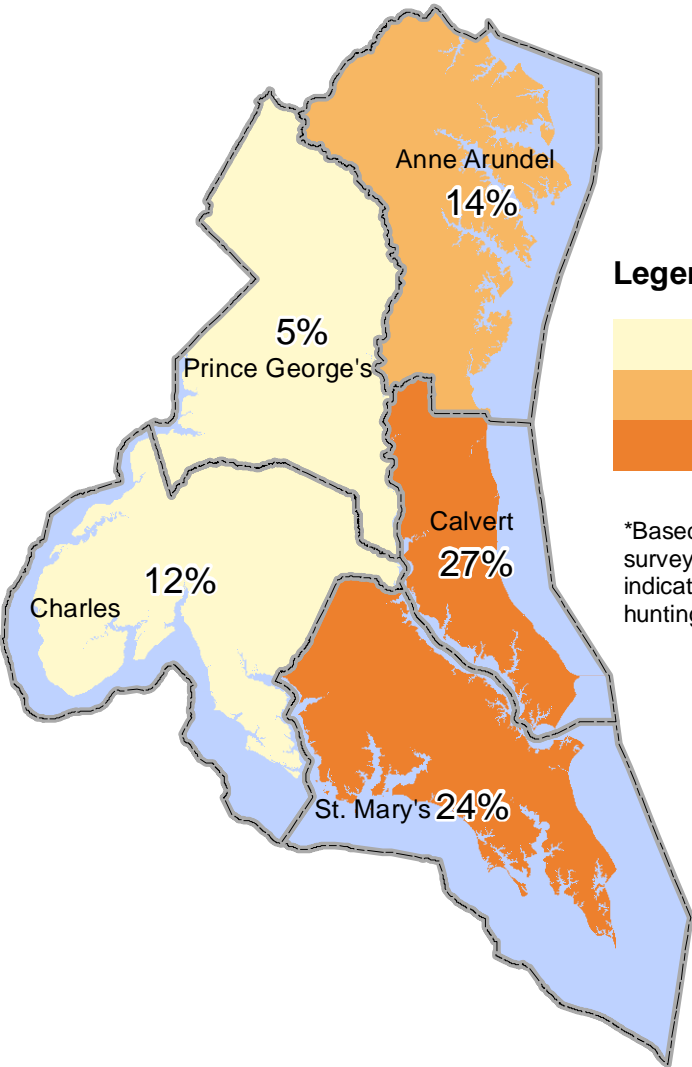
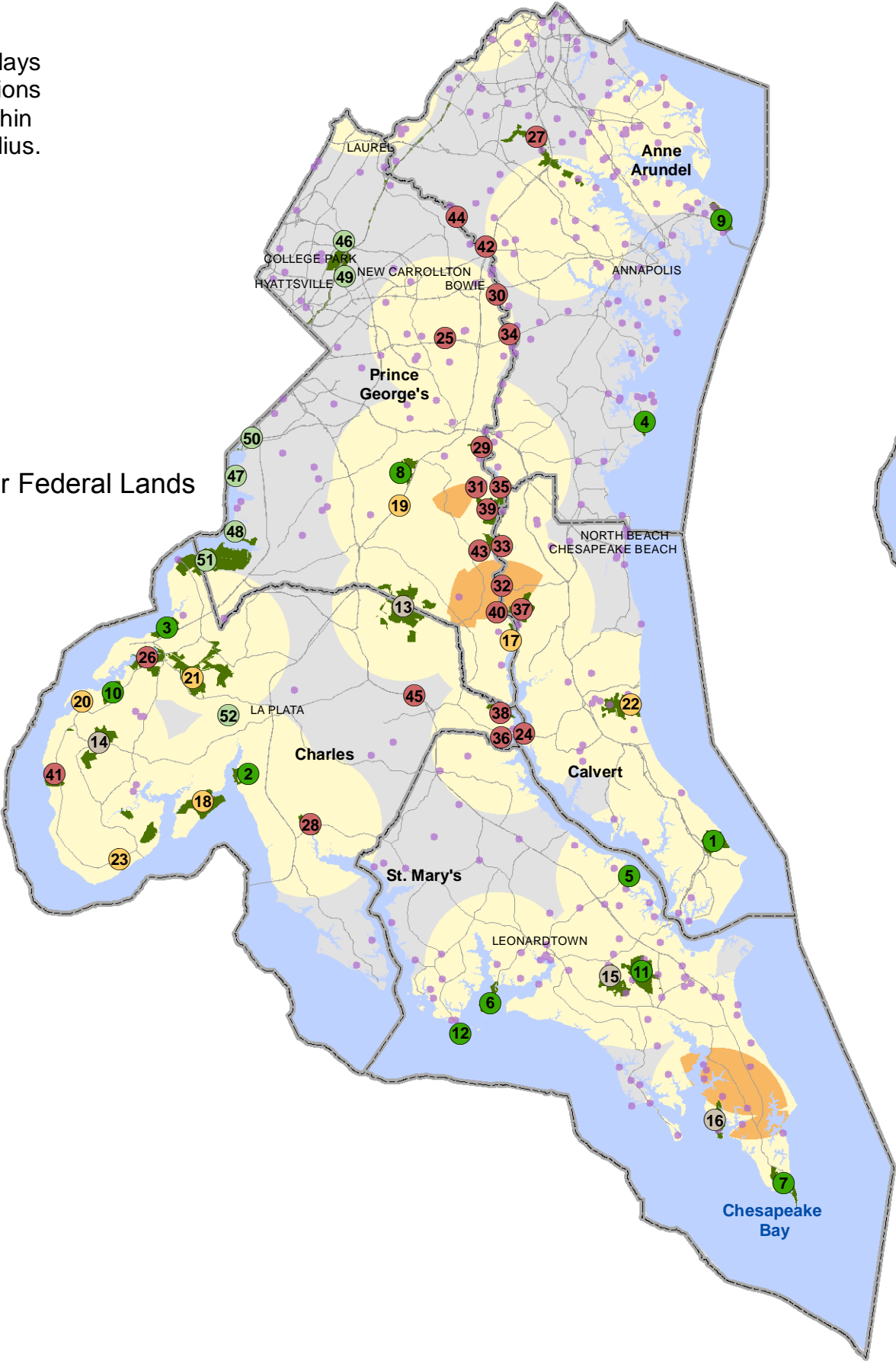
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with hunting within a 5-mile radius.

Legend

- 0
- < 5
- 5 -10
- > 10
- DNR or Federal Lands



Legend

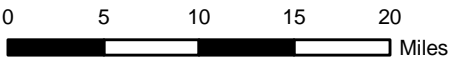
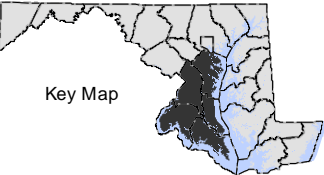
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in hunting.

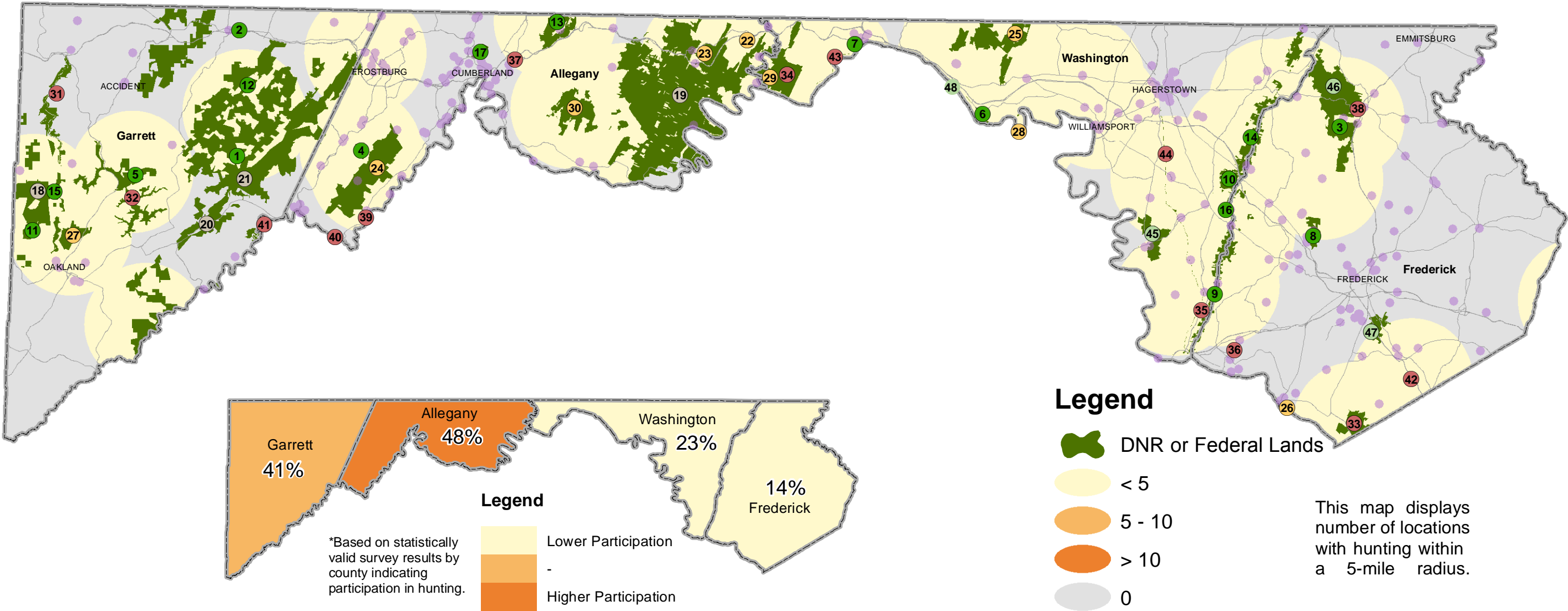
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4D: 5-Mile Proximity to Hunting - Western Region



Sites listed in **bold** were included in this analysis:

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 **DANS MOUNTAIN SP**
- 5 **DEEP CREEK LAKE SP**
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 **GREENBRIER SP**
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 **ROCKY GAP SP**
- 14 **SOUTH MOUNTAIN SP**
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 **GARRETT SF**
- 19 **GREEN RIDGE SF**
- 20 **POTOMAC SF**
- 21 **SAVAGE RIVER SF**

Wildlife Management Areas

- 22 **BELLE GROVE WMA**
- 23 **BILLMEYER WMA**
- 24 **DANS MOUNTAIN WMA**
- 25 **INDIAN SPRINGS WMA**
- 26 ISLANDS OF THE POTOMAC WMA
- 27 **MT. NEBO WMA**
- 28 PRATHERS NECK WMA
- 29 **SIDELING HILL WMA**
- 30 **WARRIOR MOUNTAIN WMA**

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 **MONOCACY NRMA**
- 34 **WOODMONT NRMA**
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 **URBANA LAKE PFA**
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

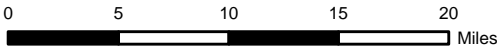
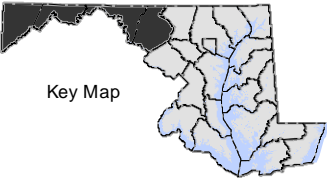
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Analysis E: 5-Mile Proximity to Fishing

Fishing is a fee-based activity requiring a license in Maryland. The fishing analysis is based on all locations with designated fishing areas and survey respondent participation in “fishing.”

Central: Sites providing fishing opportunities for the public were more scattered than those with other amenities. Areas with the greatest concentration of fishing sites were in the City of Baltimore, Gunpowder Falls, and west of Elkton, near Elk Neck State Park. Participation rates were highest in Harford County.

Eastern: Over two thirds of survey respondents from Dorchester County participated in fishing, but the proximity analysis indicated that most of the county was further than five miles away from a public recreation fishing site.

Southern: Similar to the water recreation analysis, the densest areas with opportunities to access public fishing sites were found in Anne Arundel County and in northern Calvert County. St. Mary’s County had the highest rate of participation.

Western: Most of the Western Region had a public outdoor recreation site with fishing opportunities within five miles. The densest concentrations of these sites in around Frederick and Thurmont, Cumberland and north of Oakland, in the vicinity of Swallow Falls State Park.

It can be noted that in some of the gap areas mentioned, these gaps are due to a lack of water access to physically fish.



The Sun’s Reflection on Life by Dan Shannon

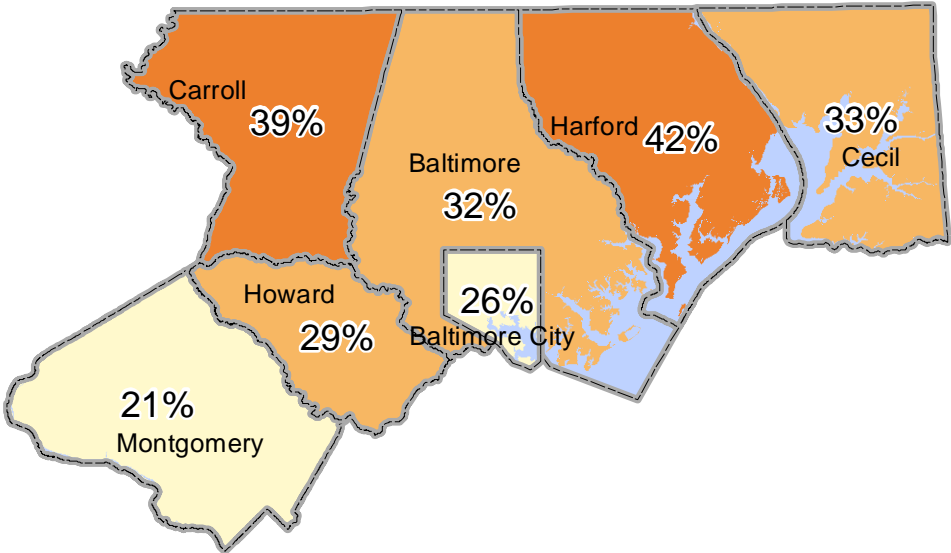
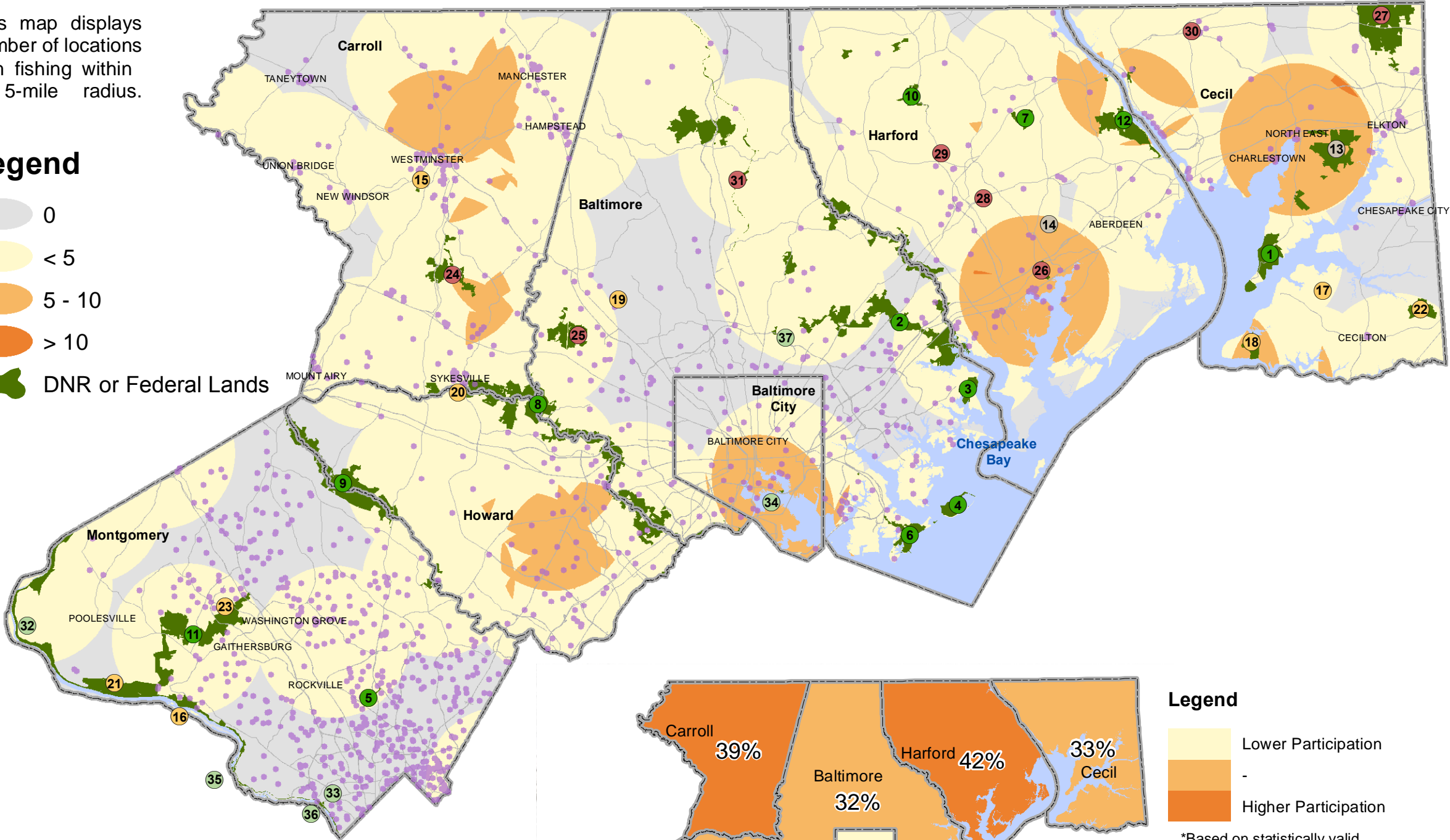
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Map 1E: 5-Mile Proximity to Fishing - Central Region

This map displays number of locations with fishing within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



Legend

- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in fishing.

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ELK NECK SP**
- 2 GUNPOWDER FALLS SP**
- 3 HAMMERMAN AREA
- 4 HART, MILLER AND PLEASURE ISLANDS SP**
- 5 MATTHEW HENSON SP
- 6 NORTH POINT SP**
- 7 PALMER SP**
- 8 PATAPSCO VALLEY SP**
- 9 PATUXENT RIVER SP
- 10 ROCKS SP**
- 11 SENECA CREEK SP**
- 12 SUSQUEHANNA SP**

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

- 15 AVONDALE WMA
- 16 DIERSEN WMA
- 17 EARLEVILLE WMA
- 18 GROVE FARM WMA
- 19 GWYNNBROOK WMA
- 20 HUGG-THOMAS WMA
- 21 MCKEE BESHES WMA
- 22 OLD BOHEMIA WMA
- 23 STRIDER WMA

Other DNR Assets

- 24 MORGAN RUN NEA**
- 25 SOLDIERS DELIGHT NEA**
- 26 BUSH DECLARATION NRMA**
- 27 FAIR HILL NRMA**
- 28 BYNUM RUN POND PFA**
- 29 FOREST HILL LAKE PFA**
- 30 RISING SUN POND PFA**
- 31 TORREY C BROWN RAIL TRAIL**

Federal Lands

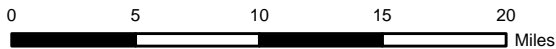
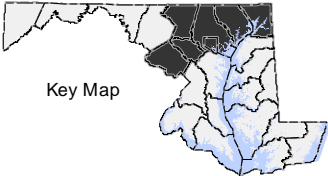
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 2E: 5-Mile Proximity to Fishing - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JAMES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLWILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

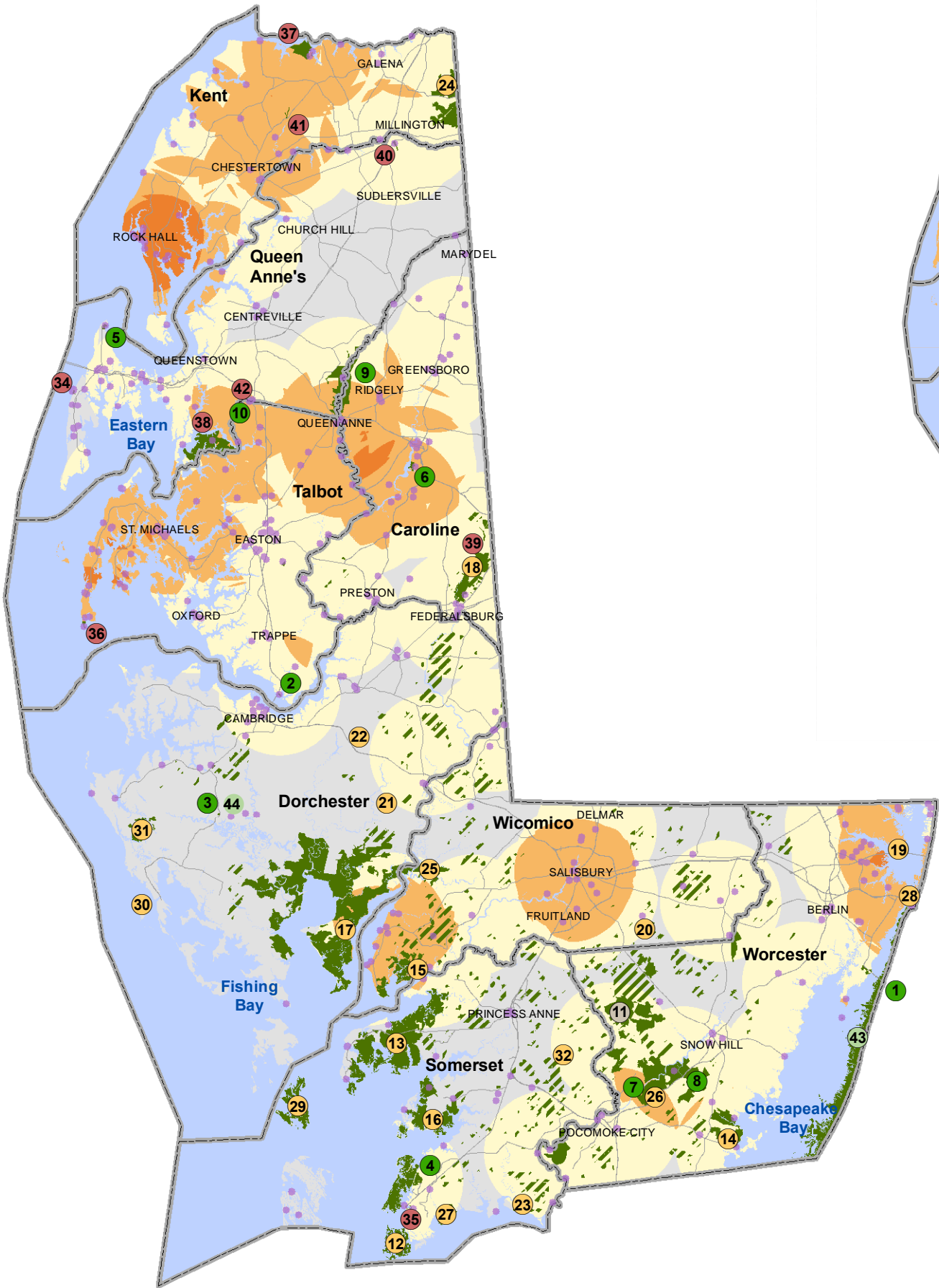
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with fishing within a 5-mile radius.

Legend

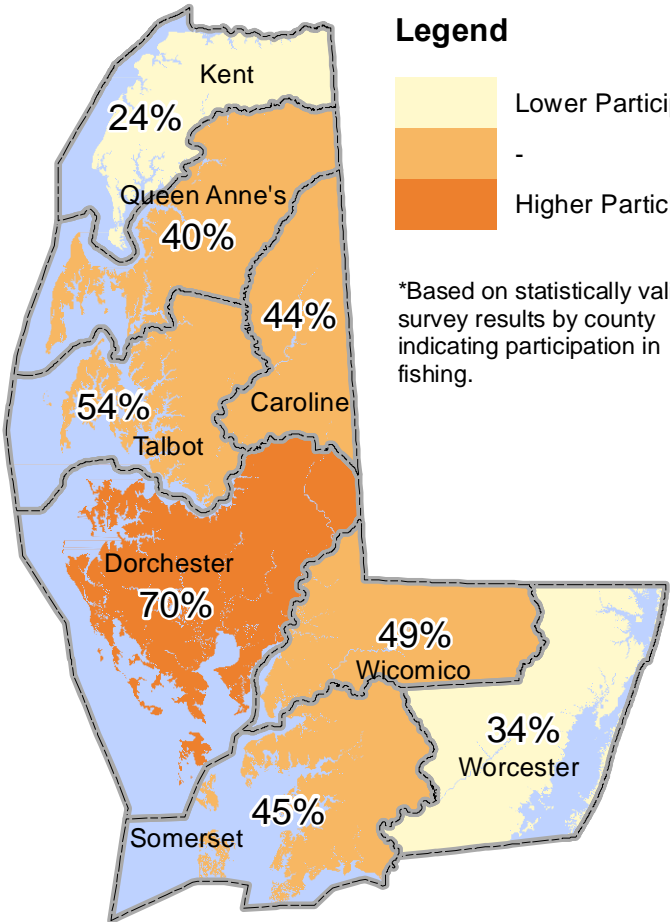
- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



Legend

- Lower Participation
-
- Higher Participation

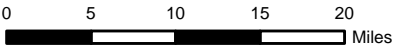
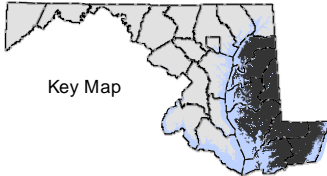
*Based on statistically valid survey results by county indicating participation in fishing.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3E: 5-Mile Proximity to Fishing - Southern Region

Sites listed in **bold** were included in this analysis:

- State Parks**
- 1 CALVERT CLIFFS SP
 - 2 CHAPEL POINT SP
 - 3 CHAPMAN SP
 - 4 FRANKLIN POINT SP
 - 5 GREENWELL SP
 - 6 NEW TOWNE NECK SP
 - 7 POINT LOOKOUT SP
 - 8 ROSARYVILLE SP
 - 9 SANDY POINT SP
 - 10 SMALLWOOD SP
 - 11 ST MARYS RIVER SP
 - 12 ST. CLEMENTS ISLAND SP

- State Forests**
- 13 CEDARVILLE SF
 - 14 DONCASTER DEMONSTRATION SF
 - 15 SALEM SF
 - 16 ST INGOES SF

- Wildlife Management Areas**
- 17 BOWEN WMA
 - 18 CEDAR POINT WMA
 - 19 CHELTENHAM WMA
 - 20 CHICAMUXEN WMA
 - 21 MYRTLE GROVE WMA
 - 22 PARKER CREEK WMA
 - 23 RIVERSIDE WMA

- Other DNR Assets**
- 24 HALLOWING POINT BOAT RAMP
 - 25 BELT WOODS NEA
 - 26 MATTAWOMAN NEA
 - 27 SEVERN RUN NEA
 - 28 ZEKIAH SWAMP NEA
 - 29 BILLINGSLEY NRMA
 - 30 CHANEY NRMA
 - 31 CROOM NRMA
 - 32 FULL MILL BRANCH NRMA
 - 33 HALL CREEK NRMA
 - 34 HONEY BRANCH NRMA
 - 35 HOUSE CREEK NRMA
 - 36 INDIAN CREEK NRMA
 - 37 KINGS LANDING NRMA
 - 38 MAXWELL HALL NRMA
 - 39 MERKLE WILDLIFE SANCTUARY NRMA
 - 40 MILLTOWN LANDING NRMA
 - 41 NANJEMOY NRMA
 - 42 PRIDE FINANCE NRMA
 - 43 SPICE CREEK NRMA
 - 44 UHLER NRMA
 - 45 HUGHSVILLE POND PFA

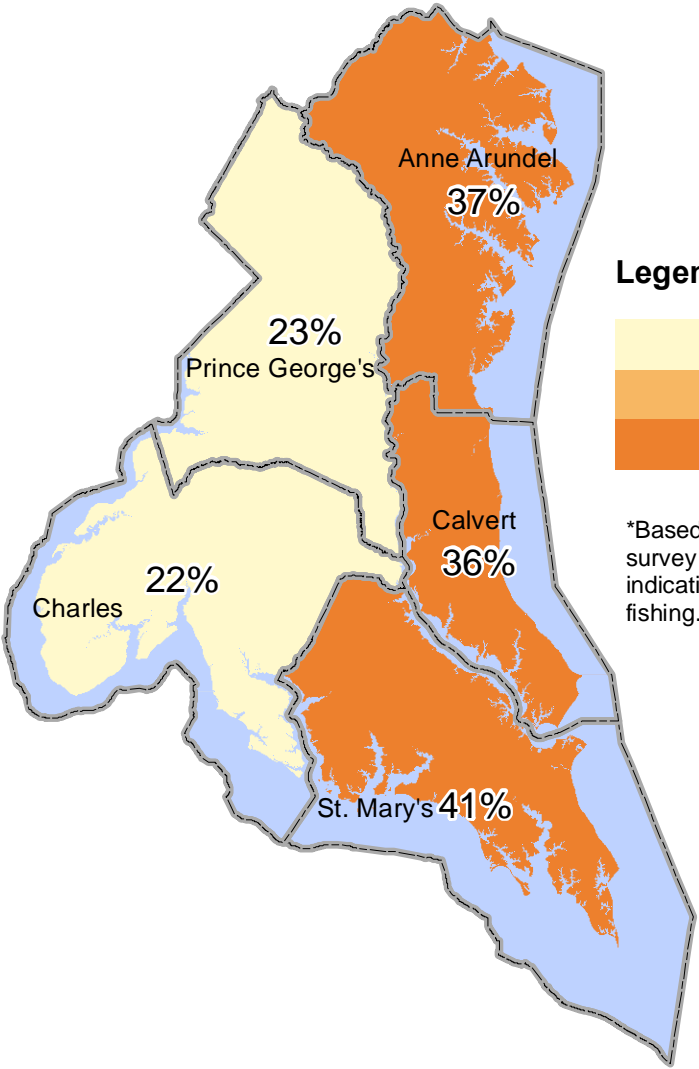
- Federal Lands**
- 46 BALTIMORE-WASHINGTON PARKWAY
 - 47 FORT FOOTE PARK
 - 48 FORT WASHINGTON PARK
 - 49 GREENBELT PARK
 - 50 OXON COVE PARK AND OXON HILL FARM
 - 51 PISCATAWAY PARK
 - 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with fishing within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



Legend

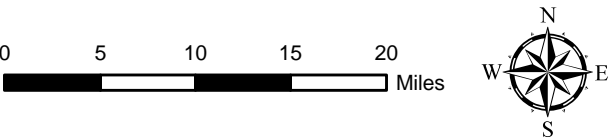
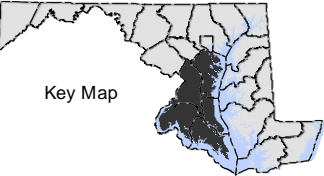
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in fishing.

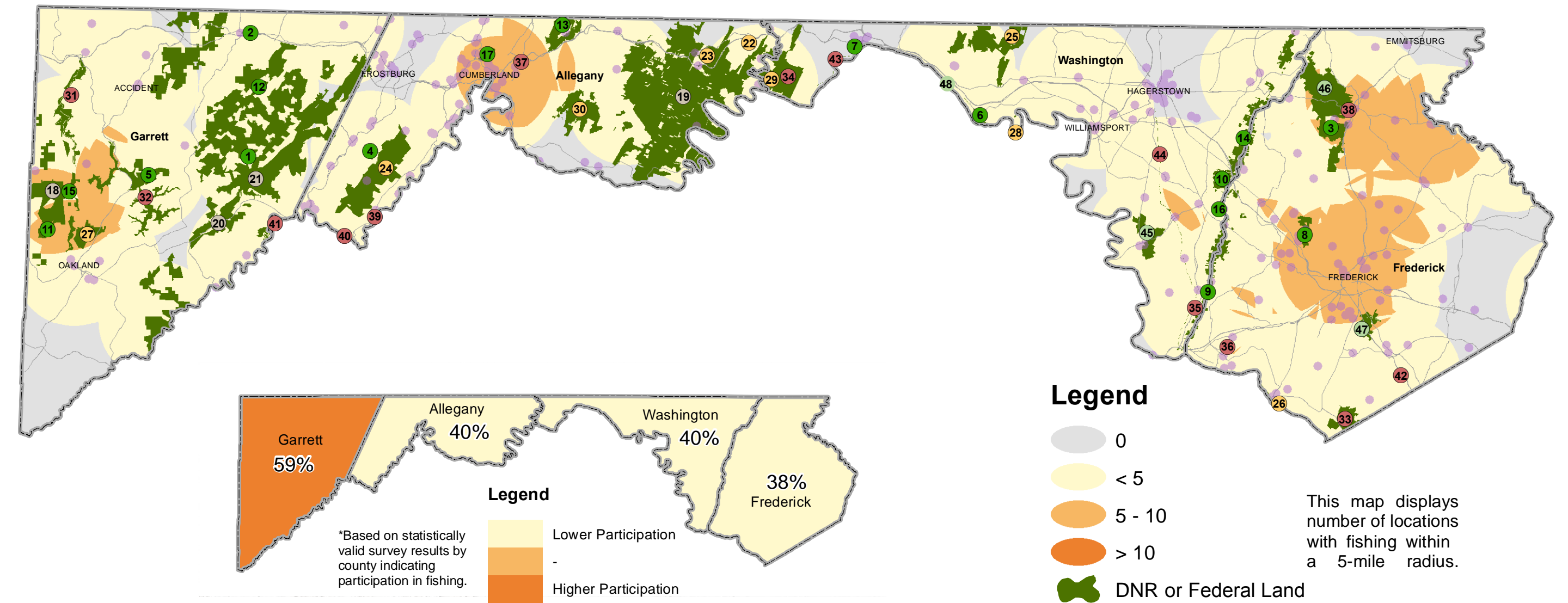
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

SP	State Park
SF	State Forest
WMA	Wildlife Management Area
NEA	Natural Environment Area
NRMA	Natural Resource Management Area
PFA	Public Fishing Area



Map 4E: 5-Mile Proximity to Fishing - Western Region



Sites listed in **bold** were included in this analysis:

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 **NEW GERMANY SP**
- 13 **ROCKY GAP SP**
- 14 SOUTH MOUNTAIN SP
- 15 **SWALLOW FALLS SP**
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 GREEN RIDGE SF
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 MONOCACY NRMA
- 34 WOODMONT NRMA
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

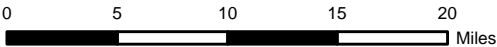
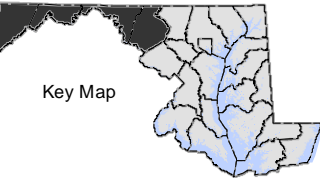
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Analysis F: 5-Mile Proximity to Trails

Any sites with a path or trail that may be used for walking or hiking, cycling, mountain biking, by equestrians, or for off-highway vehicle (OHV) use were included in this analysis.

Participation in Trail-Based Recreation Activities

Central: Participation was high in trail recreation throughout the region, and access to public outdoor recreation areas with trails is strong through most of the region. Most areas of the region were within five miles of multiple public sites with trails.

Eastern: With the exception of Kent County, participation in all other Eastern Region counties was over 50%. Concentrations of public outdoor recreation sites with trails were located in Caroline, Talbot, and Worcester counties. Another area of concentration was located near Salisbury.

Southern: The highest concentration of sites with trails was located in the northern part of the region in Prince George's and Anne Arundel counties. Participation in each county was over 70%, with St. Mary's County having the highest rate of participation at 92%.

Western: At least three in four survey respondents from each Western Region county indicated that they participate in trail-based recreation. The highest concentration of sites was in the Hagerstown area of Washington County. Few areas in the Western Region were further than five miles from a public outdoor recreation site with trails.

It can be noted that trails were within the bolded park assets listed, not stand alone.

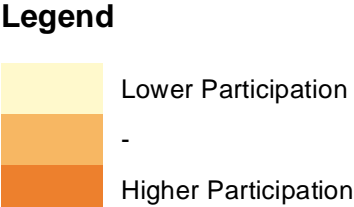
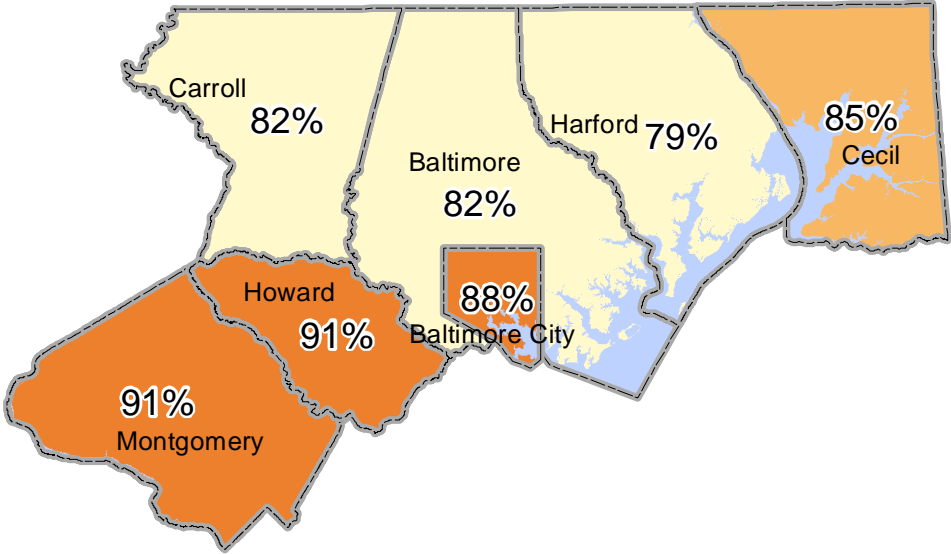
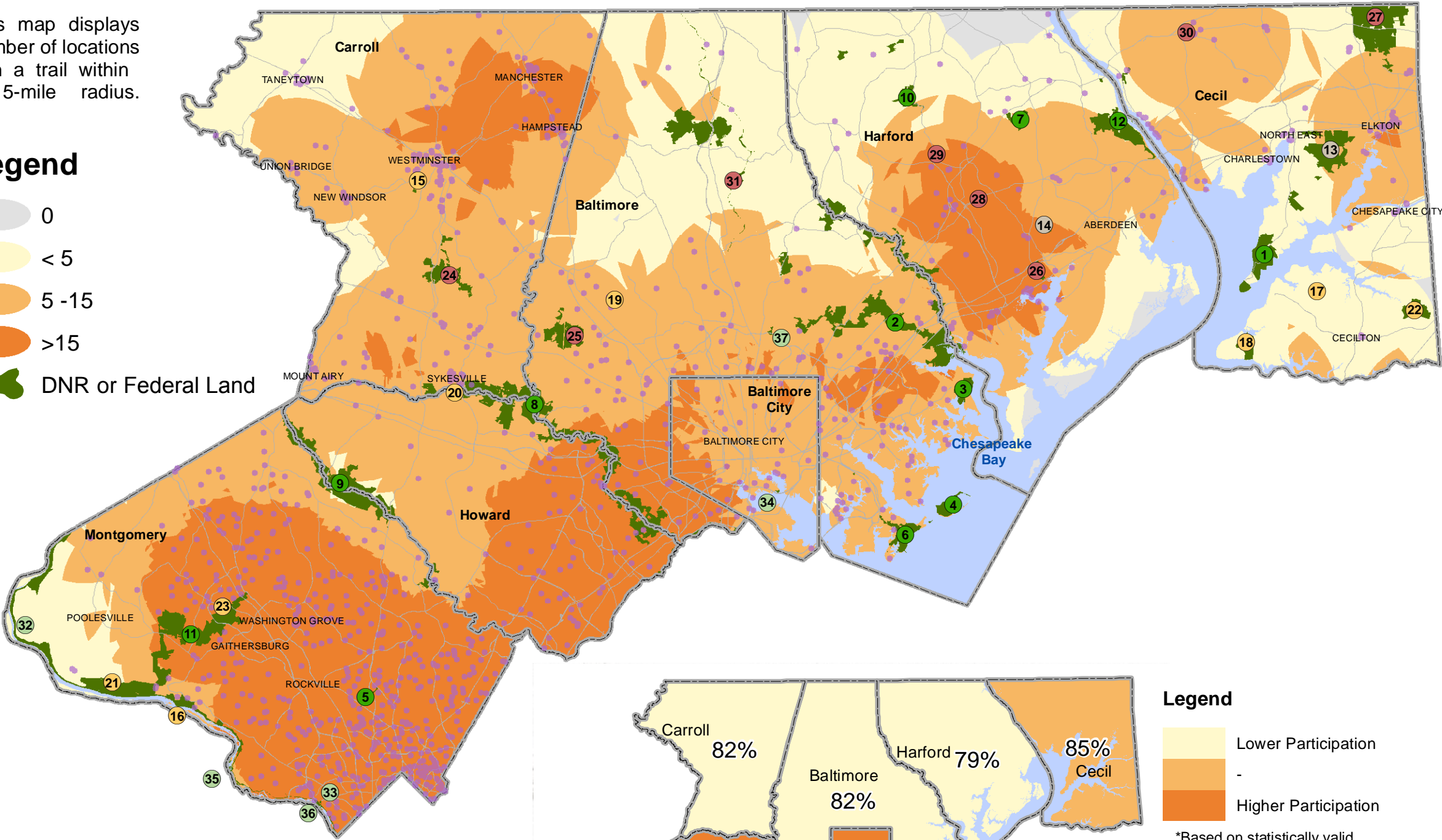
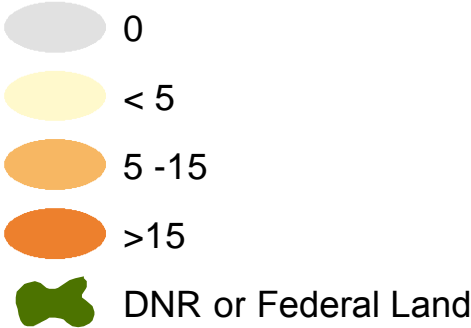


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Map 1F: 5-Mile Proximity to Trails - Central Region

This map displays number of locations with a trail within a 5-mile radius.

Legend



*Based on statistically valid survey results by county indicating participation in trail-based recreation.

Sites listed in **bold** were included in this analysis:

- State Parks**
- 1 ELK NECK SP
 - 2 GUNPOWDER FALLS SP
 - 3 HAMMERMAN AREA
 - 4 HART, MILLER AND PLEASURE ISLANDS SP
 - 5 MATTHEW HENSON SP
 - 6 NORTH POINT SP
 - 7 PALMER SP
 - 8 PATAPSCO VALLEY SP
 - 9 PATUXENT RIVER SP
 - 10 ROCKS SP
 - 11 SENECA CREEK SP
 - 12 SUSQUEHANNA SP

- State Forests**
- 13 ELK NECK SF
 - 14 STONEY DEMONSTRATION SF

- Wildlife Management Areas**
- 15 AVONDALE WMA
 - 16 DIERRSEN WMA
 - 17 EARLEVILLE WMA
 - 18 GROVE FARM WMA
 - 19 GWYNNBROOK WMA
 - 20 HUGG-THOMAS WMA
 - 21 MCKEE BESHES WMA
 - 22 OLD BOHEMIA WMA
 - 23 STRIDER WMA

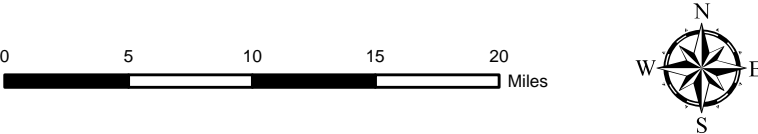
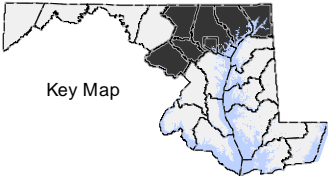
- Other DNR Assets**
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL

- Federal Lands**
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORIC PARK
 - 33 CLARA BARTON NATIONAL HISTORIC SITE
 - 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
 - 35 GEORGE WASHINGTON MEMORIAL PARKWAY
 - 36 GLEN ECHO PARK
 - 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

- Acronym Key**
- SP State Park
 - SF State Forest
 - WMA Wildlife Management Area
 - NEA Natural Environment Area
 - NRMA Natural Resource Management Area
 - PFA Public Fishing Area



Map 2F: 5-Mile Proximity to Trails - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 **HARRIET TUBMAN SP**
- 4 JANES ISLAND SP
- 5 LOVE POINT SP
- 6 **MARTINAK SP**
- 7 **MILBURN LANDING AREA**
- 8 **SHAD LANDING AREA**
- 9 **TUCKAHOE SP**
- 10 WYE OAK SP

State Forests

- 11 **POCOMOKE RIVER SF**

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 **DEAL ISLAND WMA**
- 14 E.A. VAUGHN WMA
- 15 **ELLIS BAY WMA**
- 16 FAIRMOUNT WMA
- 17 **FISHING BAY WMA**
- 18 IDYLWILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 **CHESAPEAKE FOREST LANDS***
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 **SASSAFRASS NRMA**
- 38 **WYE ISLAND NRMA**
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

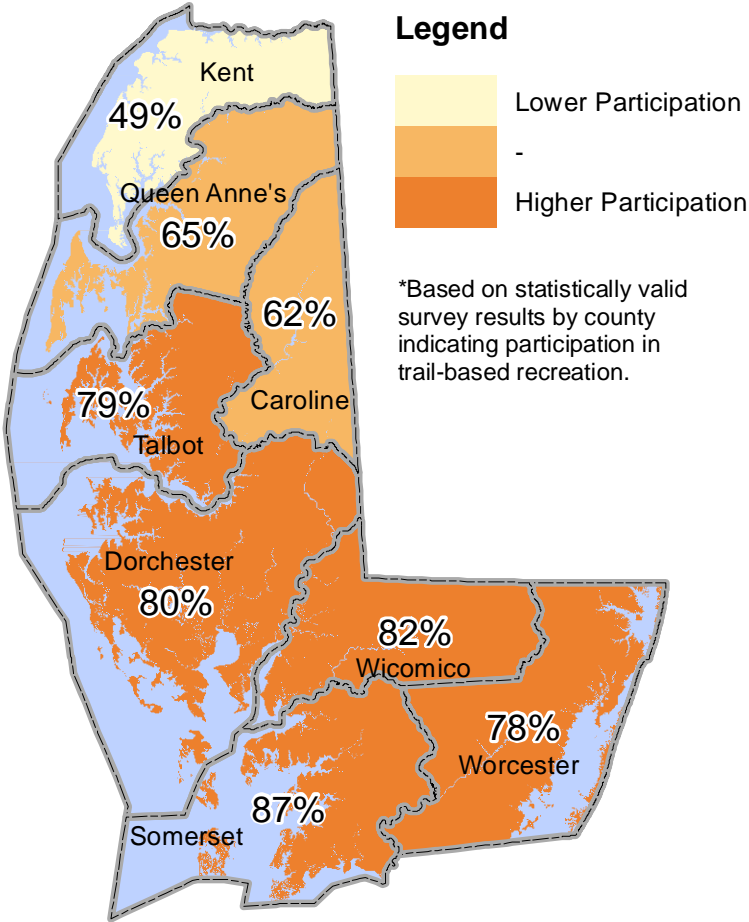
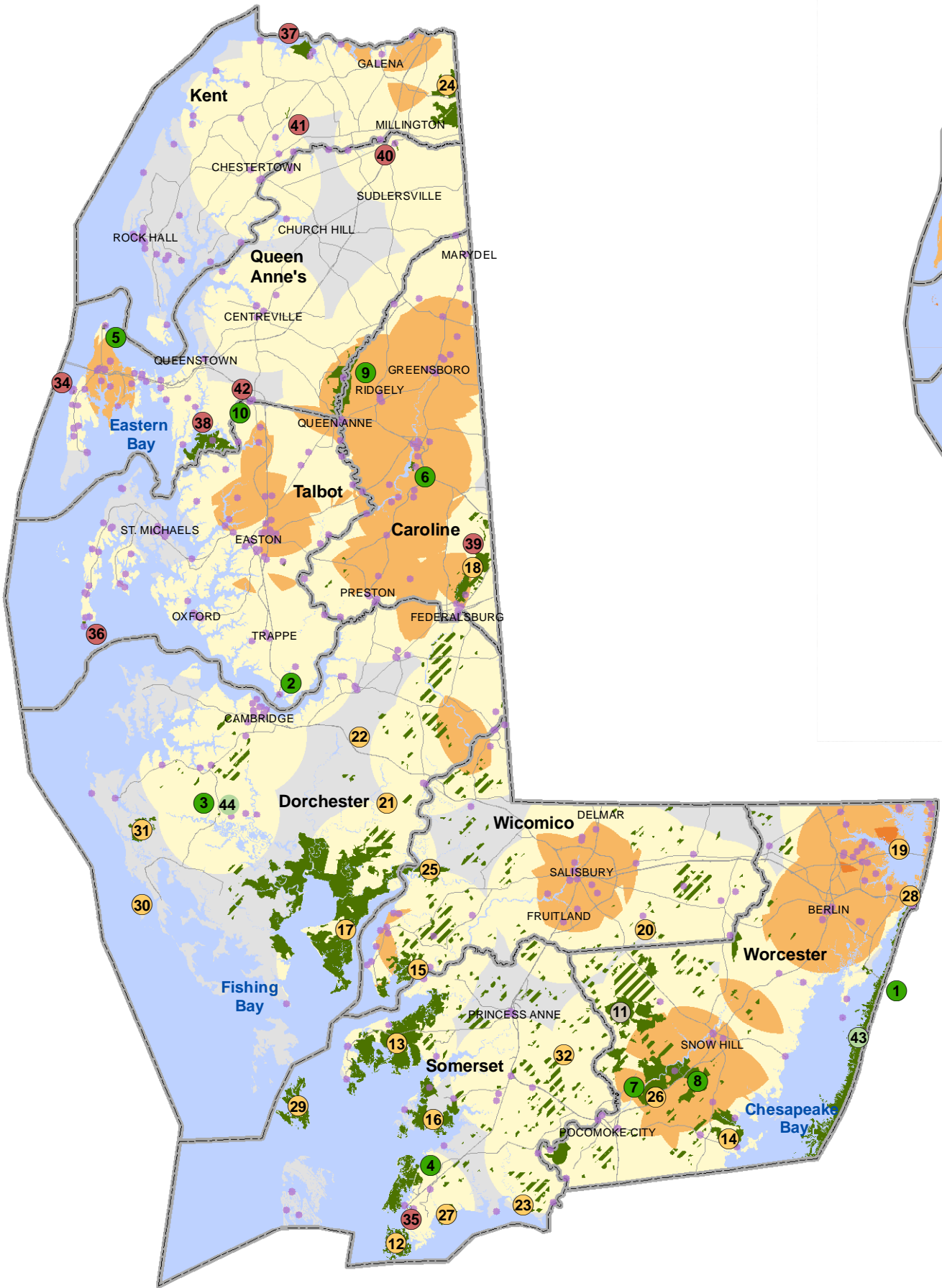
- 43 **ASSATEAGUE ISLAND NATIONAL SEASHORE**
- 44 **BLACKWATER NATIONAL WILDLIFE REFUGE**

County Properties

This map displays number of locations with a trail within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Land

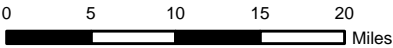
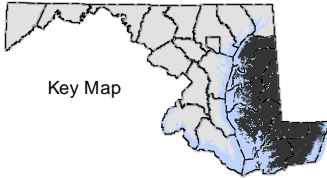


*Based on statistically valid survey results by county indicating participation in trail-based recreation.

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3F: 5-Mile Proximity to Trails - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

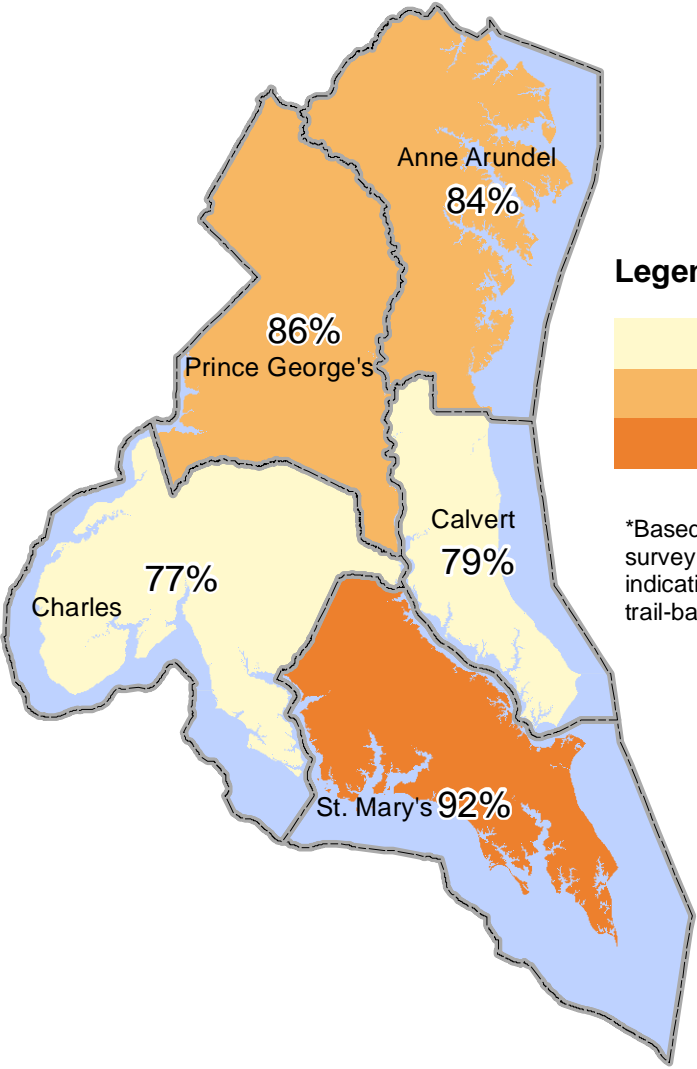
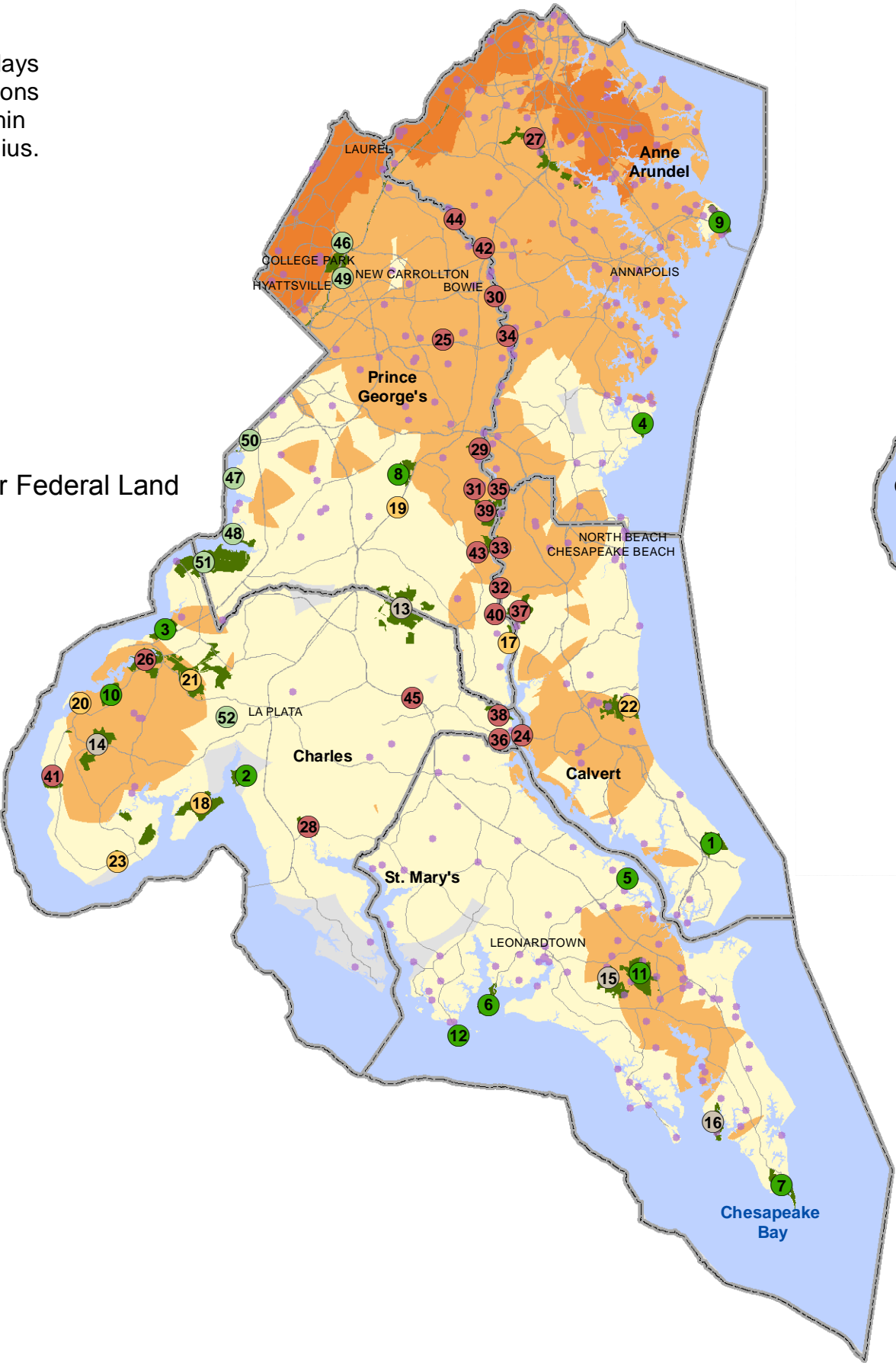
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with a trail within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Land



Legend

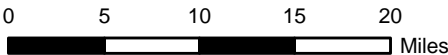
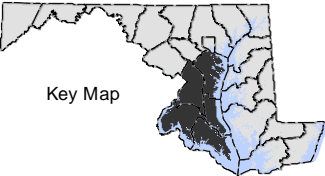
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in trail-based recreation.

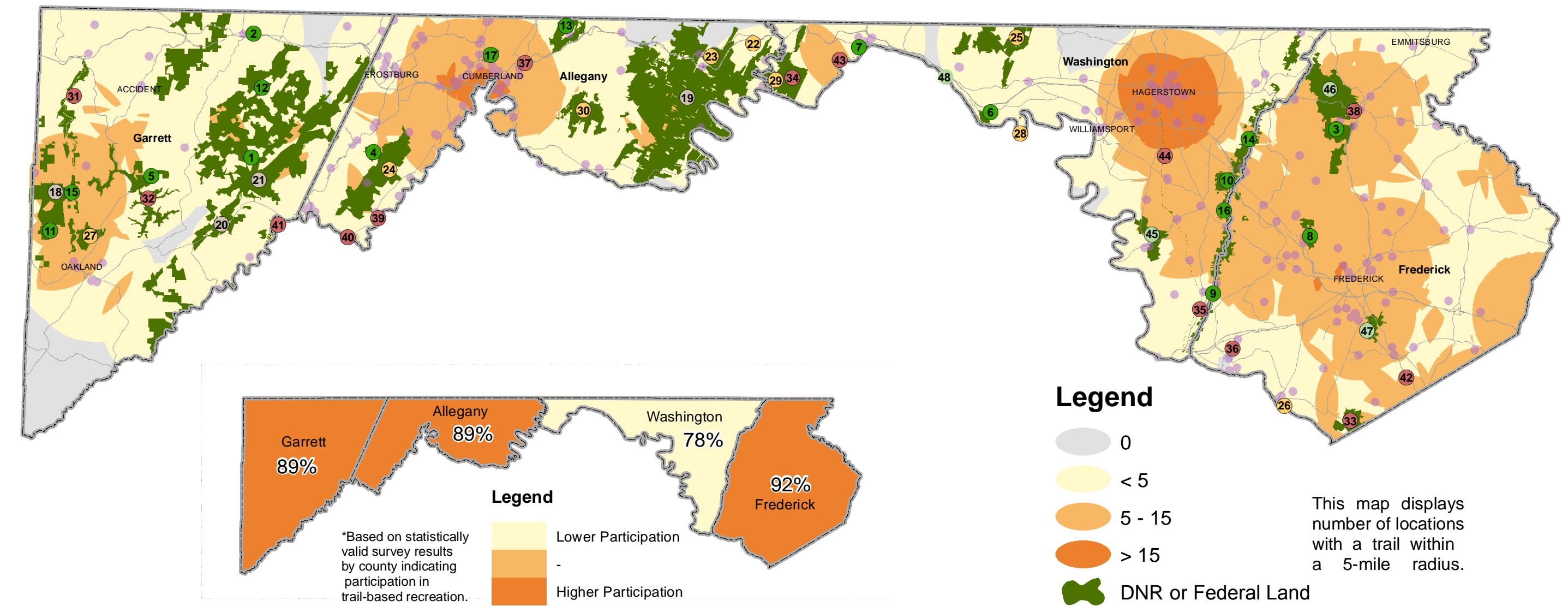
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4F: 5-Mile Proximity to Trails - Western Region



Sites listed in **bold** were included in this analysis:

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 GREEN RIDGE SF
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 MONOCACY NRMA
- 34 WOODMONT NRMA
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

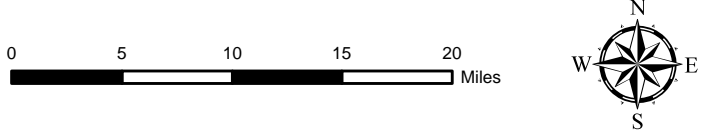
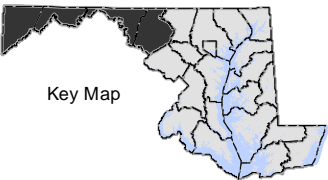
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
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Key Opportunities and Gaps – Level of Service Analysis

The findings of the proximity-based Level of Service analysis help identify gaps in service (where the nearest outdoor amenity may be more than five miles away) with the accuracy of mapping based on GIS data points from at least 26 public agencies. While great work was done to expand data resources for the analysis that yielded more detailed findings regarding potential gaps in service, the study also pointed to opportunities to continue to refine the analysis so that even more meaningful results can be achieved in the future. Opportunities for improving the statewide outdoor recreation site GIS-inventory and associated Level of Service analysis include:

- I. Work with county agencies to further vet their data included in the 2018 statewide GIS outdoor recreation database.
- II. Work with County and state agencies to define consistent key technical criteria and formatting needs for future outdoor recreation GIS data submission (shapefile needs, data formatting, etc.). All future outdoor recreation GIS related information should be submitted in accordance with the defined criteria. Inventory data from these and other providers would complete the statewide dataset. The dataset compiled for this plan may serve as the basis for future data gathering.
- III. State and County parks and recreation agencies should provide GIS data to define “points of access” (trailheads, parking areas, main entrance gate, etc.) to parks and sites with public outdoor recreation opportunities. This effort will allow for more accurate analysis based on access points to each site. If this is not possible due to technical constraints, another approach is to utilize multiple points in analysis for larger land units or those that include several distinct properties.

D. TRENDS IMPACTING OUTDOOR RECREATION IN MARYLAND

National trends in outdoor recreation, especially those focused on the health, environmental, and economic benefits directly align with participation trends and recreational desires of Marylanders. There is a significant and growing depth of published research into the health, environmental, and economic benefits of outdoor recreation. To highlight the significance of national trends in Marylanders’ participation in outdoor recreation, relevant findings of two annual reports on American’s participation in outdoor activities from the Physical Activity Council and Outdoor Industry Association are reviewed. Given the significance of trail and water-based recreation in the state, additional discussion on these topics is also presented.

Physical Activity Council’s 2018 Participation Report

This annual report presents research findings of Americans’ participation in 123 different sports, recreation, and leisure activities ranging from team and individual sports to outdoor activities including camping, hunting, fishing, action sports, fitness, and other outdoor exercise activities.

“The interest in activities has started moving toward outdoor recreation. The top aspirational activity for all age segments was outside, ranging from camping to biking to bird watching. While camping appears to be in the top three in most segments, solo adventures are becoming a lost art and most people who aspired to camp will do so if they have someone to do it with. People want to experience the outdoors, fitness classes, team sports, etc. with a partner.”

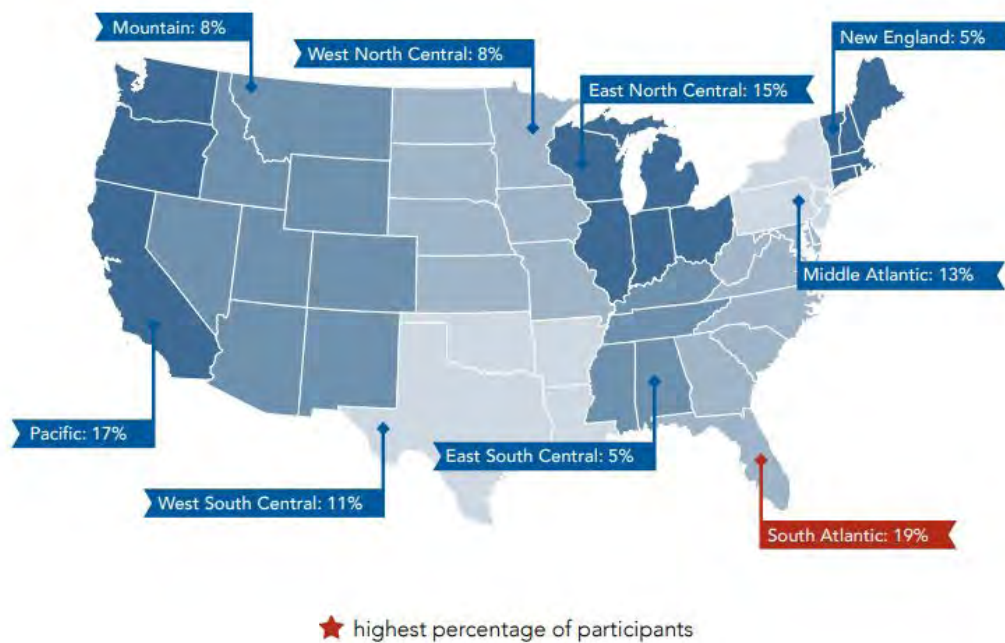
Physical Activity Council
2018 Participation Report

III. RESEARCH AND TRENDS

Figure 26: Activity Participation by Age

Interest Level	Ages 6~12	Ages 13~17	Ages 18~24	Ages 25~34
1	Camping	Camping	Camping	Camping
2	Fishing	Fishing	Bicycling	Swimming For Fitness
3	Soccer	Swimming For Fitness	Martial Arts	Bicycling
4	Basketball	Running/Jogging	Backpacking	Fishing
5	Bicycling	Working out with machines	Fishing	Canoeing
6	Martial Arts	Bicycling	Working out with weights	Hiking
7	Swimming for Fitness	Working out with weights	Working out with machines	Backpacking
8	Football	Basketball	Canoeing	Working out with weights
9	Swimming on a Team	Football	Kayaking	Running/Jogging
10	Volleyball	Volleyball	Swimming For Fitness	Working out with machines

Interest Level	Ages 35~44	Ages 45~54	Ages 55~64	Ages 65+
1	Camping	Camping	Bicycling	Birdwatching/Wildlife Viewing
2	Swimming For Fitness	Fishing	Camping	Fishing
3	Bicycling	Bicycling	Birdwatching/Wildlife Viewing	Working out with machines
4	Fishing	Swimming For Fitness	Swimming For Fitness	Swimming For Fitness
5	Working out with weights	Hiking	Fishing	Bicycling
6	Hiking	Working out with weights	Working out with machines	Hiking
7	Working out with machines	Canoeing	Hiking	Camping
8	Running/Jogging	Working out with machines	Working out with weights	Working out with weights
9	Canoeing	Birdwatching/Wildlife Viewing	Canoeing	Fitness classes
10	Basketball	Backpacking	Kayaking	Shooting



According to the 2018 “Participation Report”⁵⁶:

- Seventy-two percent of Americans over the age of six are active, but those who are active are generally active less frequently than found in previous years.
- In a grouping of seven different activity categories, participation in outdoor sports has consistently ranked as the second highest category for at least the past five years. Nearly half of all Americans who are physically active are participating in outdoor sports like hiking, paddle boarding, hunting, or climbing.
- Participation in outdoor activities generally declined with age, but remained strong even amongst Baby Boomers.
- Participating in outdoor activities was on most people’s to-do list for 2018.

Outdoor Industry Association 2017 Outdoor Participation Report

The Outdoor Industry Association’s annual reporting of American’s participation in outdoor activities are generally in-line with those of the Physical Activity Council. According to the Association’s 2017 “Participation Report,”⁵⁷ with 19% of the population participating in outdoor

TOP FIVE ACTIVITY PREFERENCES

1 Walking



2 Hiking/Backpacking



3 Running/Jogging



4 Swimming Outdoors



5 Visiting Playgrounds/
Nature Play Spaces



recreation, the South Atlantic region of the country, which includes Maryland, sees the highest regional rate of participants (age 6+).⁵⁸

Key findings of the Outdoor Industry Association’s 2017 “Participation Report” included:

- About ½ of Americans are moderately active outdoors, getting outside anywhere between 12 and 103 times annually.
- The most popular activities by rate and frequency of participation are primarily trail or water-based and consisted of:
 - Running, jogging, and trail running
 - Fishing
 - Road, mountain, and BMX biking
 - Hiking
 - Camping
- Sixty-four percent of outdoor participants traveled less than 10 miles to access outdoor recreation opportunities.
- Eighty percent of participants want to recreate outdoors more often.
- The top five motivators for being active outdoors included:
 - Get exercise (64%)
 - Be with family and friends (55%)
 - Keep physically fit (50%)
 - Observe scenic beauty (49%)
 - Be close to nature/Enjoy the sounds and smells of nature (tie, 47%)
- Top five reasons for NOT getting outside:
 - Too busy with family responsibilities
 - Outdoor recreation equipment is too expensive
 - Do not have anyone to participate with
 - Do not have the skills or abilities
 - Have a physical disability

⁵⁶physicalactivitycouncil.com/pdfs/current.pdf

⁵⁷outdoorindustry.org/resource/2018-outdoor-participation-report/

⁵⁸outdoorindustry.org/resource/2018-outdoor-participation-report/; Accessed October 2018

III. RESEARCH AND TRENDS

Both the Physical Activity Council and Outdoor Industry Association reports on Americans' habits and trends in outdoor recreation speak directly to trends noted in Maryland through the statewide outdoor recreation survey and reports of participation from local and state providers. Many trends noted in Maryland can be seen on the nationwide stage and vice versa, suggesting that the outdoor issues and activities that are important in Maryland are important overall to Americans. Results of the 2018 Maryland Statewide Outdoor Recreation Survey are reviewed in Section III B, and the full survey report is included as [Appendix B](#).

E. KEY RESEARCH FINDINGS

The sum of all research and analysis conducted to prepare this update of the Land Preservation and Recreation Plan yielded the following key findings:

- I. Opportunities should be leveraged to continue to foster productive, collaborative working relationships between outdoor recreation service providers. There are at least 26 key federal, state, and local public agency providers of outdoor opportunities in Maryland. Each have their own mission but share common goals.
- II. The economic, cultural, health, and environmental benefits of outdoor recreation and conservation of natural lands should be more widely recognized by Marylanders. One key method to increase the public's understanding of these benefits is to promote more use of outdoor recreation facilities. This is also important for increasing participation in healthy, beneficial outdoor activities across the state and strengthening the public benefits yielded through participation.
- III. Existing outdoor recreation opportunities in Maryland are having a positive impact on the lives of most people and households in the state. Some areas of the state have better access to recreation amenities versus others. Increasing close-to-home opportunities to get outdoors and continuing to improve equity in access to parks and nature remains important.



2015 National Trails Day Photo by Stephen Badger, Office of Communications

- IV. The public wants to be better informed about the outdoor recreation opportunities that do exist. Many reported in 2013 and in 2018 that they would like public agencies to provide better and more “user friendly” information online and physically at parks and recreation sites. People want to plan visits and know certain amenities exist and activities are possible at a park or open space before they get there, or where to access features while on-site.
- V. Maintenance of existing Department of Natural Resources outdoor recreation amenities needs improvement. Public input indicated a strong desire for agencies to improve the quality of existing parks and open space infrastructure. Basic infrastructure supporting outdoor recreation, such as trails, boat ramps, parking areas, and restrooms were all noted as needing improvement at many public outdoor recreation sites.
- VI. More than any other outdoor recreation amenity, trails are likely the most significant in terms of numbers of Marylanders using them for walking, hiking, biking, and other activities. Trail-based recreation is hugely important in Maryland. This importance is discussed as follows.

The Significance of Trails

Trails offer many diverse recreational opportunities, from strenuous hiking to leisurely strolling and places to ride bikes, horses, and off-road vehicles, as well as boating and paddle boarding. Currently, the Department of Natural Resources has 1,447 miles of land trails spread throughout the state.

There are many additional miles of land trails on federal, county, municipal, and private nonprofit lands, as well as opportunities for walking and biking that are part of the state’s transportation

⁵⁹atatrail.org/

system, such as on-road bike lanes. As a result, Maryland is a great place for trail use and safely connects people of all ages and abilities to the outdoors. Furthermore, citizen input identified walking as the most popular outdoor recreation activity, regardless of age, race, or geographic location five years ago and again through this planning effort. Trails are providing opportunities for citizens to get outside to walk, run, bike, or paddle and are of key importance in Maryland, especially for the health, environmental, and economic benefits these activities can provide. For more information visit: atatrail.org.⁵⁹

Trail benefits (Health, Environmental & Economic)

- Health: Many studies have documented the physical and mental health benefits of spending time outdoors. In addition, it has been shown that regular exercise reduces the risk of cardiovascular disease and type 2-diabetes, strengthens bones and muscles, improves mental health, and increases the chance of living longer, according to the Centers for Disease Control and Prevention, part of the U.S. Department of Health and Human Services.
- Environmental: Trails provide access to outdoor environments and ecosystems that are not available indoors or in an automobile. It has been shown that this access to nature helps the next generation acquire strong environmental knowledge and values that can foster a deep-rooted stewardship ethos and way of living.



III. RESEARCH AND TRENDS

- Economic: Recreational use of land and water trails can bring new visitors to communities and provide an economic opportunity through tourism and associated spending. However, it is helpful for “trail towns” to transform themselves into trail-friendly, memorable destinations that enhance the trail user’s experience. One key to success is understanding both the socio-economic and lifestyle preferences of the trail-customer and responding to their needs for goods and services. Some simple approaches might include:
 - Providing a physical trail feature that is a “gateway” to a trail town
 - Creating a unique sense of place
 - Developing a welcoming atmosphere
 - Establishing the right mix of services
 - Promoting trail – oriented events
- Built the St. John’s Rock Off-highway vehicle trail in Savage River State Forest.
- Assisted Garrett Trails in the development of the Meadow Mountain trail, which is a segment of the Eastern Continental Divide Loop Trail.
- Began construction of the Phase 4 extension of the Western Maryland Rail Trail.
- Continued to purchase land as a scenic viewshed buffer to the Maryland segment of the Appalachian Trail.
- Collaborated with the National Park Service to develop paddle-in campsites along the Captain John Smith Chesapeake National Historic Trail at Newtowne Neck and Point Lookout State Parks.
- Collaborated with the National Park Service to complete the Star-Spangled Banner Historic Trail exhibits at North Point State Park and the Battle of North Point State Battlefield.
- Assisted both Prince George’s and Anne Arundel counties in the development of a bridge across the Patuxent River, which will complete a priority trail connection.
- Participated in a partnership between PEPCO and Montgomery Parks and Recreation to develop a utility corridor trail that connects Cabin John Regional Park to Seneca Creek State Park.
- Participated in the Technical Advisory Group that helped Maryland Department of Transportation develop the update Bicycle and Pedestrian Master Plan, which is update every five years and presents a 20-year vision to support walking and bicycling in Maryland. It will also provide guidance to support strategic investments toward a safer and more integrated transportation network.

Public input received during the planning process to update the Land Preservation and Recreation Plan indicated that people value a statewide trail network that connects them to the outdoors, especially in close-to-home locations. Walking still remains the most popular outdoor activity in Maryland, and people want to see improvements made to trail infrastructure. Public input is further reviewed in Section III B.

Regional Trail Priorities

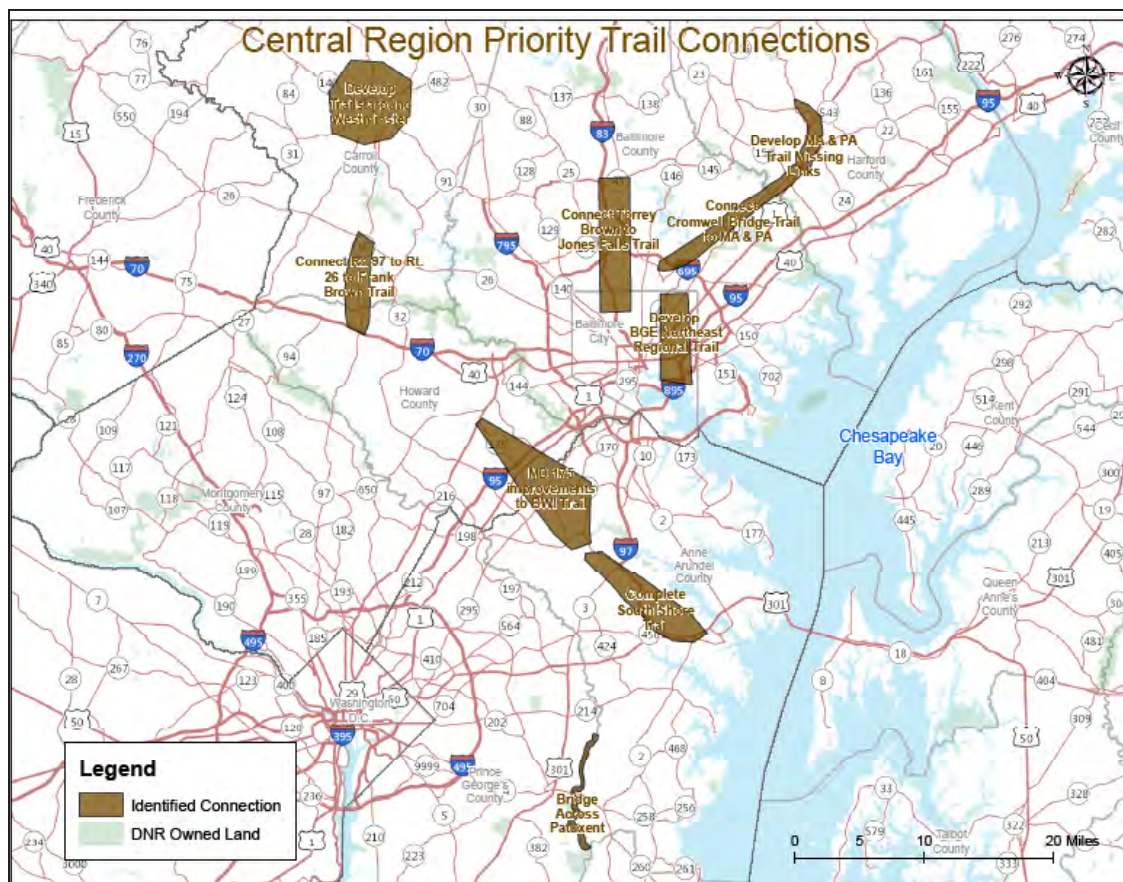
In the five years since the previous 2014 Land Preservation and Recreation Plan, a number of accomplishments related to creating a statewide trail network have been completed. Although certainly not an exhaustive list, the following are some of those accomplishments:

- Conducted a Statewide Trails Summit in collaboration with the Maryland Parks and Recreation Association.
- Conducted four regional trail workshops in collaboration with Maryland Department of Transportation and identified priority regional trail gaps.

The Maryland Department of Natural Resources hosted the Maryland Trails Summit in 2015 with the major goal of identifying and prioritizing critical gaps in the statewide trail network. The Summit spurred a series of regional trail workshops in 2016 and 2017 attended by a diverse group of trail advocates, including planning and recreation staffs from counties and towns, state land managers, heritage area staff, trails, and planning staff from various federal and state agencies, and the leading trail advocacy groups. The goal of these workshops was to identify the top ten trail projects and investments that are most needed to help connect communities through an on-road/off-road trail network in each of the Department's service regions. The following are the results of these workshops by region.

Central Region Priority Trail Connections

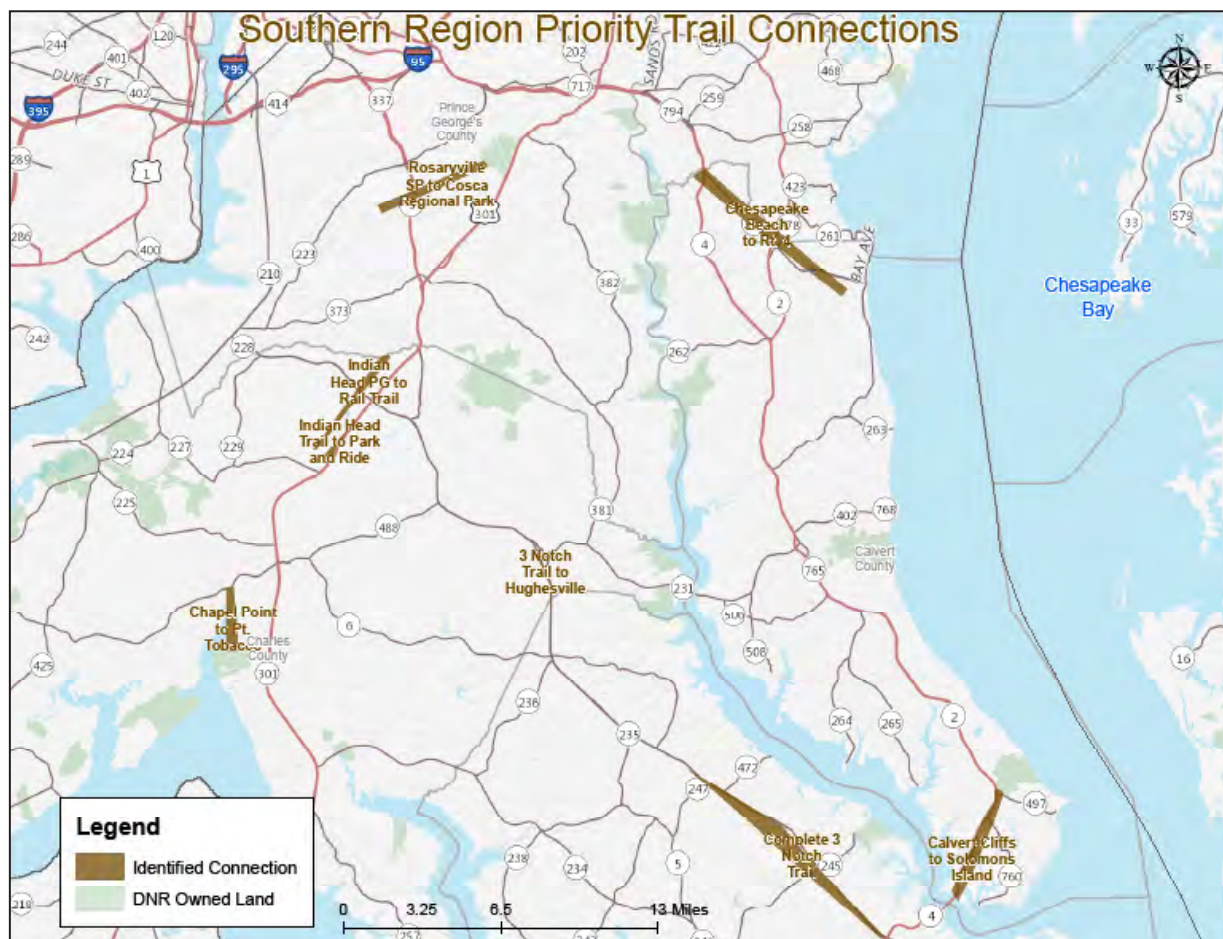
1. Connect the Torrey C. Brown Trail to Baltimore City
2. Connect Anne Arundel and Prince George's counties with a bridge across the Patuxent River
3. Connect Patapsco State Park Trail system to Ellicott City and Baltimore City
4. Connect Route 97 to Route 26, and then to the Governor Frank Brown Trail
5. Connect MD 175 to Odenton, Fort Meade, Arundel Mills and the BWI Trail
6. Fill the missing link on the Ma & Pa Trail north of Baltimore
7. Connect the Cromwell Bridge trail to the Towson Spoke Trail (Ma & Pa Trail)
8. Connect trails within and around Westminster
9. Complete the South Shore trail using the abandoned WB & A railroad bed between Annapolis and Odenton
10. Develop the BGE Northeast Regional Trail



III. RESEARCH AND TRENDS

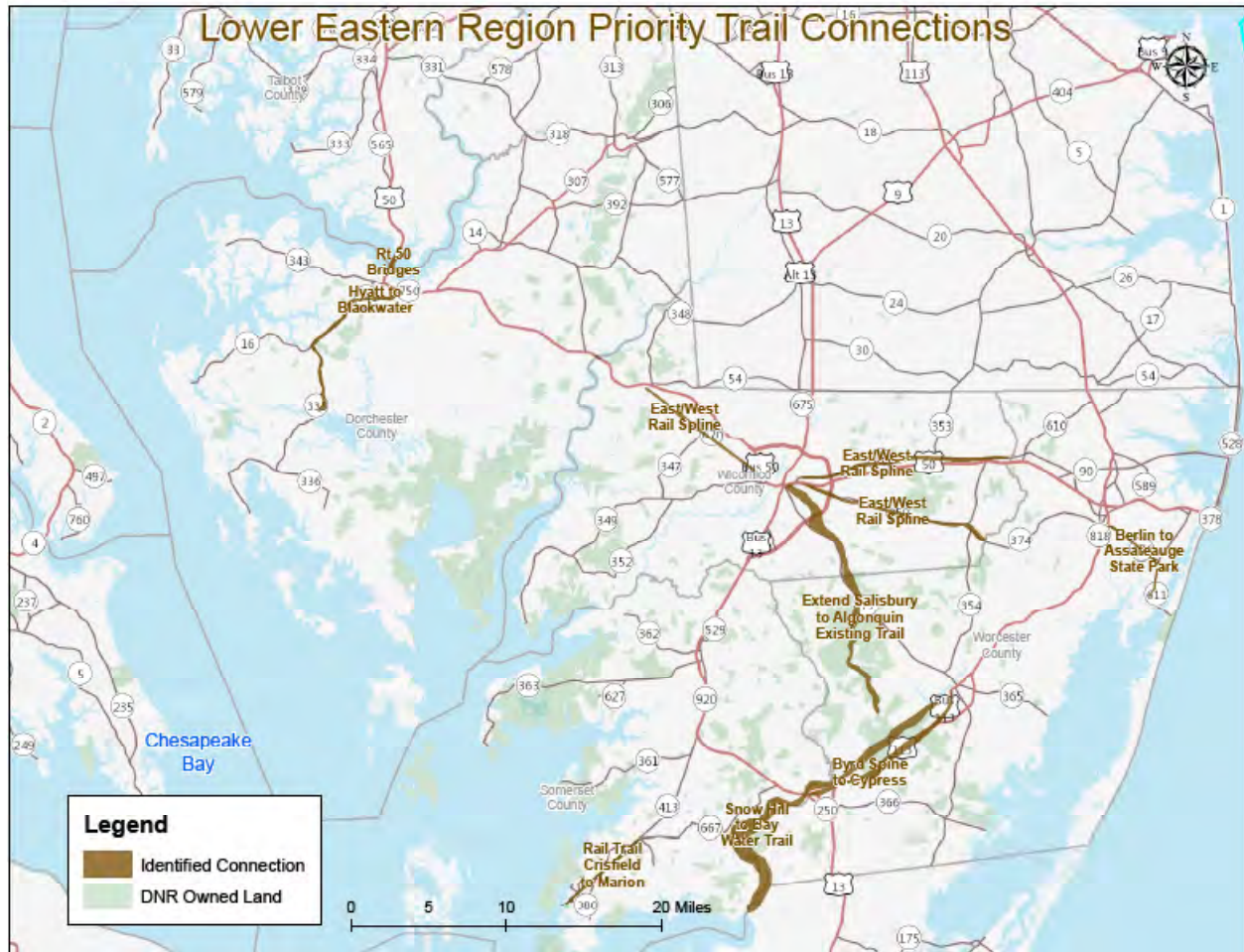
Southern Region Priority Trail Connections

1. Extend 3 Notch Trail into Hughesville
2. Finish all phases of the Three Notch trail
3. Connect Indian Head Rail Trail to existing Prince George's County trails
4. Connect Indian Head Rail Trail to State Highway Association Park & Ride (north)
5. Connect Solomon's to Calvert Cliffs State Park and Flag Ponds Nature Park
6. Connect Chesapeake Beach Rail Trail to Route 4
7. Connect Rosaryville State Park to Cosca Regional Park
8. Use utility corridors to connect existing trails
9. Connect Chapel Point State Park to Port Tobacco
10. Provide safe shoulders on roads to connect existing trails



Lower Eastern Shore Priority Trail Connections

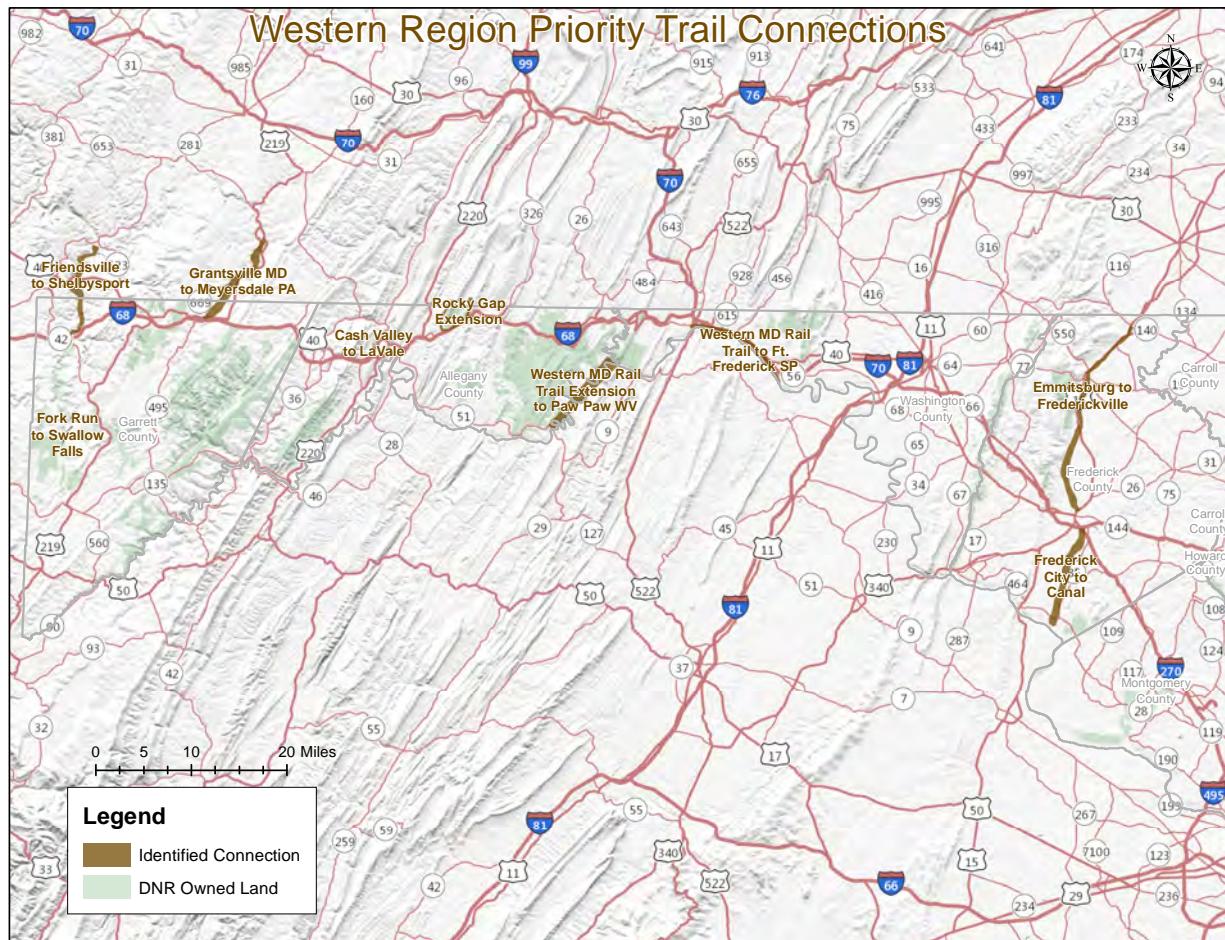
1. Connect existing trails in Salisbury to existing Algonquin Trail in Chesapeake Forest
2. Connect Wicomico and Worcester counties using the East/West rail spine
3. Connect Byrd Park to Cypress Park
4. Develop the Rail Trail from Crisfield to Marion
5. Connect the Cambridge Hyatt to Harriet Tubman State Park and Blackwater Wildlife Refuge
6. Develop water trail from Snow Hill to Chesapeake Bay (multi-day trip with strategic stops)
7. Provide bike/pedestrian access on Route 50 bridges across Choptank and Nanticoke rivers
8. Connect Berlin to Assateague Island



III. RESEARCH AND TRENDS

Western Region Priority Trail Connections

1. Develop trail from Grantsville to Myersdale, PA
2. Connect Frederick City to Emmitsburg
3. Extend Rocky Gap existing trails to PA State Forest
4. Connect Frederick City to C&O Canal at Brunswick
5. Connect Fork Run to Swallow Falls State Park
6. Connect Cash Valley to LaVale
7. Connect Western MD Rail Trail to Fort Frederick State Park
8. Extend Western MD Rail Trail to Pawpaw
9. Connect Friendsville to Shellsport, PA



Federal Historic Trails

Star-Spangled Banner National Historic Trail

The Star-Spangled Banner National Historic Trail⁶⁰ is a 560-mile land and water route that tells the story of the War of 1812 in the Chesapeake Bay region. The trail's land and water components connect parks, historic sites, museums, and heritage routes in Maryland, Virginia, and the District of Columbia and commemorates the events leading up to the Battle for Baltimore, the aftermath of which inspired Francis Scott Key to write our National Anthem. The trail traces American and British troop movements, introduces visitors to communities affected by the war, and highlights the Chesapeake region's distinctive landscapes and waterways.

Captain John Smith Chesapeake National Historic Trail

The Captain John Smith Chesapeake National Historic Trail⁶¹ commemorates the voyages of Captain John Smith and his crew as they explored the Chesapeake Bay between 1607 and 1609. The more than 2,000-mile trail was established by Congress in 2006 as part of the National Trails System and became America's first national water trail. Managed by the National Park Service, the trail traces Smith's routes and the key rivers linked to them, helping visitors imagine the world he encountered more than four hundred years ago. The Captain John Smith Chesapeake National Historic Trail also connects

with 16 National Wildlife Refuges, 12 National Park areas, and three National Trails. It offers opportunities for tourism, environmental and cultural education, conservation, and recreation. The multi-dimensional nature of the Captain John Smith Chesapeake National Historic Trail makes it a model for a new system of National Blueways.

Appalachian National Scenic Trail

The Appalachian Trail is a 2,180+ mile long public footpath that runs from Georgia to Maine in the Appalachian Mountain region. The Appalachian Trail was conceived by private citizens in 1921 and completed in 1937. The Appalachian Trail is managed by the National Park Service, the U.S. Forest Service, the Appalachian Trail Conservancy, and numerous state agencies and thousands of volunteers. In Maryland, the Appalachian Trail runs 40 miles over South Mountain, a north-south ridge that extends from Pennsylvania to the Potomac River.

Potomac Heritage National Scenic Network

The Potomac Heritage National Scenic Trail Network links the tidal Potomac and upper Youghiogheny river basins with a trail network for hikers, bikers, and paddlers. The trail corridor is full of history, nature, recreation, and wildlife that provide an outdoor experience for everyone. The Great Allegheny Passage rail trail and the Chesapeake and Ohio



Canoeing | Image Credit: Dept. of Natural Resources

⁶⁰ starspangledtrail.net/

⁶¹ smithtrail.net/

III. RESEARCH AND TRENDS

Canal Towpath are both trails within the Potomac Heritage Network. The Great Allegheny Passage is 150 miles in length from Cumberland, Maryland, to Pittsburgh, Pennsylvania. A 73 mile section of the Great Allegheny Passage rail trail between Ohiopyle, Pennsylvania, and Cumberland, Maryland, is in the Potomac Heritage National Scenic Trail Network and is managed by the Allegheny Trail Alliance. The Chesapeake and Ohio Canal Towpath's 184.5 miles are completely within the Potomac Heritage National Scenic Trail Network and run from Cumberland, Maryland, to Washington, D.C. The towpath is managed by the National Park Service.

Washington-Rochambeau Revolutionary Route National Historic Trail

The National Park Service, in partnership with the National Washington Rochambeau Revolutionary Route Association, Inc. and all of the states along the route, administers the Washington-Rochambeau Revolutionary Route National Historic Trail⁶² and educates the public about this American and French alliance during the Revolutionary War. The American and French armies joined forces in New England and marched south to seize Yorktown, Virginia, from the British, leading to the end of the Revolutionary War and ultimately to America's independence. The National Historic Trail's land and water routes commemorating this victorious event run from Massachusetts to Virginia through nine states plus the District of Columbia. The Army entered Maryland from Delaware at Elkton and moved by land and water along the Chesapeake Bay to Yorktown. Maryland and the Chesapeake Bay were critical to the success of the campaign.



The story connects Elkton, Havre de Grace, Baltimore, Annapolis, and many other communities and sites along the Bay, and there are many opportunities for recreation, conservation, preservation, education, and tourism partnerships while commemorating this momentous event. Population growth and associated development in the highly urban NHT corridor have erased almost all of the rural campsites, taverns, and buildings that once housed the Revolutionary War soldiers. Belvoir Scott's Plantation near Crownsville is one of the few remaining sites of French encampments in Maryland. Another encampment where a collaborative landscape conservation partnership is being explored is in what was known as Bushtown in Harford County, Maryland.

Water Based Recreation Trends

Recreating on the water is well-established in Maryland. While motorized boating and sailing are traditional pursuits, the popularity of non-motorized paddle craft is soaring in popularity in our state and across the nation. The market for human powered craft such as canoes, kayaks, and paddle boards has expanded due to changing boating trends and the fact that they are relatively inexpensive, are easy to transport, and offer a simpler way to access many different types of waterways. In addition, an interest in developing water trails has also increased as communities realize that trails along waterways offer similar benefits to those of land-based trails.

The "National Outdoor Recreation Participation Topline Report" for 2017, produced by the Outdoor Foundation, states that participation in recreational paddling/kayaking grew by 32% over

Change in National Participation (participation figures x 1,000)

	2013	2014	2015	2016	
Canoeing	10,153	10,044	10,236	10,046	-1.1%
Kayak Fishing	1,798	2,074	2,265	2,371	31.8%
Kayaking (Recreational)	8,716	8,855	9,499	10,017	14.9%
Kayaking (Sea/Touring)	2,694	2,912	3,079	3,124	16.0%
Kayaking (White Water)	2,146	2,351	2,518	2,552	18.9%
Sailing	3,915	3,924	4,099	4,095	4.6%
Stand Up Paddle Boarding	1,993	2,751	3,020	3,220	61.6%

⁶² nps.gov/waro/index.htm

the past three years and by 27% in the past year, as illustrated on the previous page. The report found that “Over the past three years, stand up paddle boarding was the top outdoor activity for growth, increasing participation an average of 18% from 2013-2016.” The report also noted a 10% increase in boardsailing, windsurfing and kayak fishing, which were among the top 10 outdoor activities for growth over a 3-year period. Stand up paddle boarding and kayaking were among the top 10 outdoor activities for growth over a 1-year period, increasing by seven percent and five percent respectively.

Water Access Sites are Important Statewide

Public water access is a significant contributor to Maryland’s economy and contributes significantly to the regional economy as well. The demand for access to the water for recreation is high and continues to grow. The Chesapeake Bay Public Access Plan was developed in 2013 to outline and guide a strategy for achieving the goal of 300 new public access sites by 2025, as identified in the most recent Chesapeake Bay Agreement. Maryland’s long history of prioritizing public water access has shown results and despite our modest size, Maryland has more public water access sites than any other jurisdiction in the entire Chesapeake Bay Watershed.

The Maryland Department of Natural Resources maintains a detailed database of sites where the general public can access the water. Public water access sites include boat ramps, soft access, and transient/temporary docking facilities. These sites are a critical components of the State’s recreational boating infrastructure and a primary support for all recreational boating activity. Auxiliary amenities such as restrooms, parking areas, pump-out stations, and other services are available at some of these facilities.

Maryland has approximately 488 public water access sites (as these are shown on the following map) throughout the state. Of those, 250 are boat ramps and the remainder are soft access, wharves or transient docking facilities.

- Boat ramps primarily serve motorized and/or trailered boats
- Soft access is for non-motorized vessels such as kayaks, canoes and paddle boards
- Transient/temporary docking facilities and wharves provide locations for loading and unloading goods and passengers and typically support motorized vehicles

The majority of public water access sites in Maryland are owned and managed by the local jurisdictions in which they are located. As a result, site conditions, hours of operation, and fee and permit requirements varies by jurisdiction. It is highly recommended that visitors contact site managers to clarify requirements prior to use.

The Maryland Department of Natural Resources created and maintains the Maryland Online Water Access Guide web page and an online GIS-based web application, the Maryland Public Water Access app, which provide information on water access sites and water trails statewide. These tools provide visitors with user-friendly resources to locate and obtain basic information regarding public water access facilities throughout the state. Maryland’s online Water Access Guide is located on the web.

dnr.maryland.gov/Boating/Pages/water-access/boatramps.aspx

The app can be accessed here.

maryland.maps.arcgis.com/apps/webappviewer/index.html?id=db62ad80097845baba3a4e3f8c1def94

III. RESEARCH AND TRENDS

Water Trails

Public access plays an integral role in the development of water trails which have become an important part of the statewide trails network. Water trails provide opportunities for people to explore waterways throughout Maryland and depending on waterway size, trails can include facilities that support paddle craft, trailered power boats, and even larger cruising vessels.

Water trails provide opportunities to:

- Promote outdoor recreation and activities that support healthy lifestyles
- Highlight historical, cultural, and natural resources
- Enhance local and state economic activity
- Partner with and support environmental restoration, outdoor education, and stewardship initiatives

Maryland has over 782 miles of state-designated water trails (as these are shown on the following map). Existing trails and developing projects can be found in every region of the state. Officially designated water trails are posted on the Maryland Water Trails web page and promotional materials. Portions of several federally-designated water trails can also be found in Maryland, including the Captain John Smith Chesapeake National Historic Trail, Star Spangled Banner Trail, and the Washington-Rochambeau Trail. For more information about Maryland's existing water trails visit dnr.maryland.gov/boating/Pages/mdwatertrails.aspx

Maryland Department of Natural Resources:

- Coordinates the development of water trails and access sites statewide
- Provides technical, mapping, and design assistance to local governments to plan, implement, and promote water trails and access
- Tracks and reports on Maryland's progress in achieving the Chesapeake Bay Agreement goal for expanding public access
- Promotes safe and responsible boating and paddling practices as well as environmental stewardship ethics

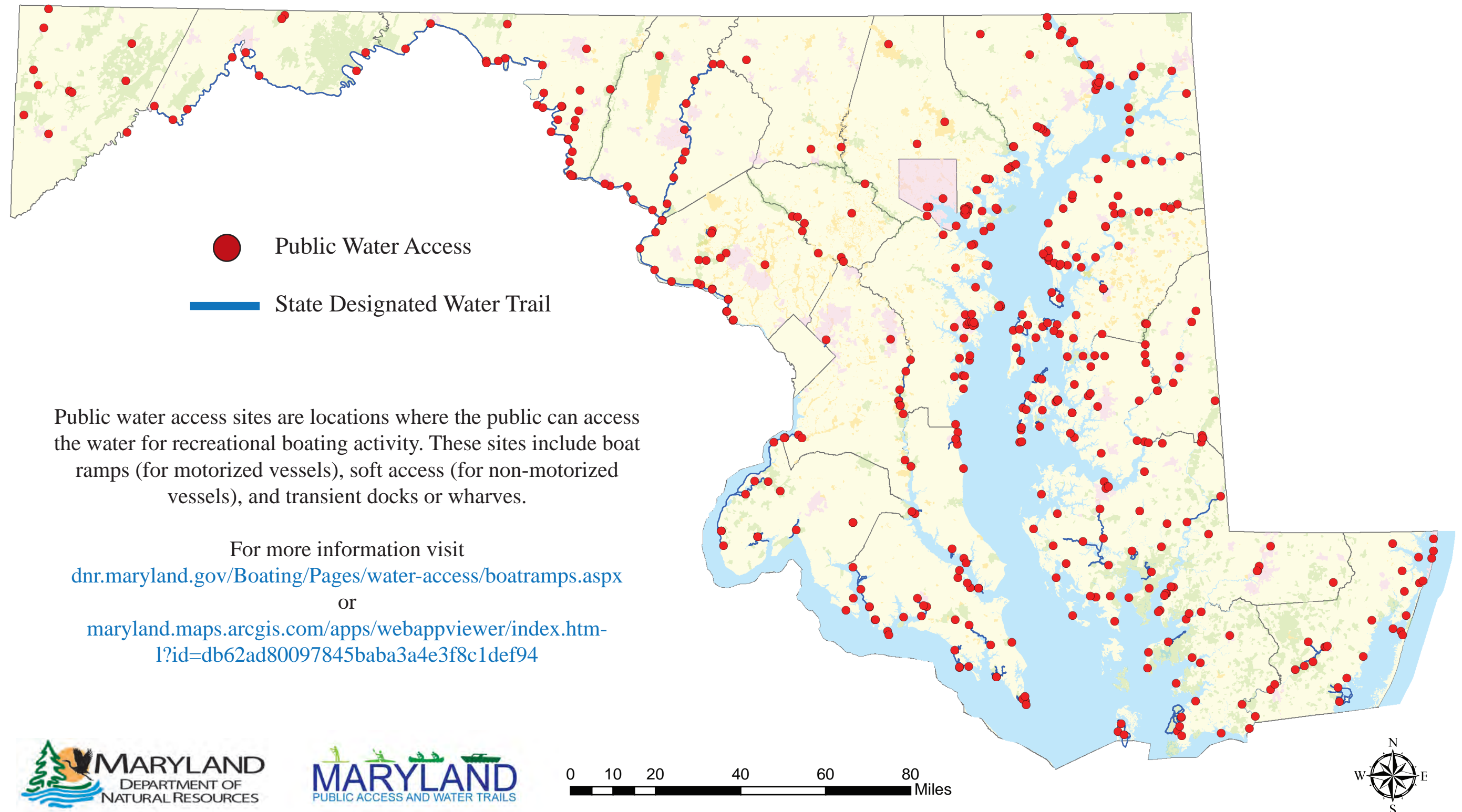
Designation as an Official Maryland Water Trail Requires the following:

- The trail route must follow an identified route along a waterway or waterways in Maryland, and the route must be reviewed and approved by the Department of Natural Resources.
- There must be identified public access sites along the trail route that are owned, managed, and maintained by a specific entity or entities such as a municipal, local, state, or federal agency, to ensure user safety, legal access, and compliance with state rules, regulations, and goals.
- The trail and its associated access site(s) must be accessible and open to the general public.
- The trail must have an existing map and/or guide.
- The trail must have an interpretive component that: educates the boating public about state boating regulations and requirements, promotes boating safety, fosters natural resources stewardship ethics, and helps to share historical or cultural information relevant to the setting of the trail.



Setting Sun at Mallows Bay by James E Murphy IV

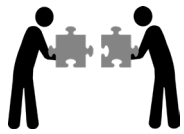
Statewide Water Access and Water Trails



IV. PRIORITIES AND GOALS FOR THE NEXT FIVE YEARS

Based on the sum of all findings of the planning process to update the Land Preservation and Recreation Plan for 2019, five key areas arose for the Department of Natural Resources and its partners to focus efforts to improve public outdoor recreation opportunities across Maryland through 2023. The five goals are noted below and included in an action plan with specific items recommended for implementation to help achieve these goals. The Land Preservation and Recreation Plan Technical Advisory Committee will convene annually to monitor and help guide the implementation of recommendations of the plan over the next five years.

The Action Plan contains two sets of action items for each goal. The first includes action items recommended for implementation over the next five years. The second includes long term actions that the Department and partners have been, and shall continue to implement over time. These are not “new” actions but representative of Maryland’s ongoing, long-term commitment to providing high quality outdoor recreation opportunities.



Goal 1: Coordination and Collaboration

Strengthen coordination and collaboration between federal, state, and local government agencies and other key stakeholders in planning for the provision of outdoor recreation opportunities and land conservation initiatives.



Goal 2: Promote the Benefits of Outdoor Recreation and Conservation of Natural Lands

Promote the economic, cultural, health, and environmental benefits of outdoor recreation and conservation of natural lands. Seek to increase the public's understanding of these benefits to enhance interest and participation in recreating outdoors in Maryland.



Goal 3: Increase Access to Open Spaces and Waterfronts

Increase and improve opportunities for all segments of the population to access land and water-based outdoor recreation opportunities.



Goal 4: Improve What’s Already Available

Improve the overall quality of outdoor recreation infrastructure at public parks and outdoor areas across the state.



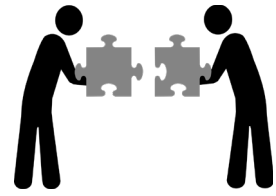
Goal 5: Develop an Informed Stewardship Culture

Promote environmental education and use of parks and outdoor areas as teaching tools to foster a positive stewardship ethos among children, youth, and their families.

IV. PRIORITIES AND GOALS

Goal One

Strengthen coordination and collaboration between federal, state, and local government agencies and other key stakeholders in planning for the provision of outdoor recreation opportunities and land conservation initiatives.



Strategy One

Work with counties, municipalities, and the City of Baltimore through the Land Preservation, Parks, and Recreation Plan process to regularly update the statewide inventory of public outdoor recreation facilities and amenities, assess local needs, update priorities, and identify opportunities for state and county collaboration.

Strategy One Action Item

- A. Develop updated guidelines for county and City of Baltimore for use in the development of their next Land Preservation, Parks, and Recreation Plans (due in 2022). Consult with counties, the City of Baltimore, and relevant stakeholder organizations. The counties should be encouraged to work with municipalities to update the inventory of recreational facilities.

Strategy Two

Coordinate with state and county agencies to improve the accuracy and completeness of the 2018 statewide outdoor recreation GIS database.

Strategy Two Action Items

- A. Work with county and state agencies to define consistent key technical criteria and formatting needs for future outdoor recreation GIS data submission (shapefile needs, data formatting, etc.), including trail related data. All future outdoor recreation GIS related information should be submitted in accordance with the defined criteria. The 2018 statewide GIS outdoor recreation database should be further vetted by all parties based on defined technical criteria.
- B. The Department of Natural Resources should continue to develop and provide GPS enabled trail maps for free public use. Seek to complete PDF trail maps for all priority land units.

Strategy Three

Continue to create and enhance a statewide trail system on land and water that connects communities, parks, cultural resources, waterways, and schools.

Strategy Three Action Item

- A. Work with partners to implement projects that seek to fill priority gaps in public trail systems that were identified through the 2016 and 2017 Statewide Regional Trails Workshops. Utilize the Montgomery County/Exelon trail partnership project to demonstrate the potential for developing trails and trail connections through linear utility corridors. Seek to complete at least one priority project per Department of Natural Resources service region.

Strategy Four

Use the Land Preservation and Recreation Plan Technical Advisory Committee (or create a similar inter-agency body) to monitor and help guide the implementation of recommendations of this plan over the next five years.

Strategy Four Action Item

- A. Convene meetings of the Technical Advisory Committee (annually at a minimum) to review progress toward implementing the action items of this Plan. Utilize these meetings to update baseline data on progress, resources, challenges, and new opportunities to help achieve goals of the Land Preservation and Recreation Plan.

Ongoing Action Items

1. State agencies and local governments should continue to coordinate review and planning activities related to transportation projects adjacent to waterways in accord with the State's Transportation and Waterway Access statute.
2. Continue the practice of coordination between State agencies, local governments, non-profit organizations and citizens to identify potential access sites and rest areas along waterways, improve existing access sites, and develop new public water access projects statewide.

IV. PRIORITIES AND GOALS

Goal Two

Promote the benefits of outdoor recreation and conservation of natural lands. Seek to increase the public's understanding of these benefits to enhance interest and participation in recreating outdoors in Maryland.



Strategy One

Assess, utilize, and share information regarding the economic value of outdoor recreation, land preservation, and natural resource conservation in Maryland.

Strategy One Action Items

- A. Work with academic partners in Maryland to complete a Forest Economic Impact Study to show the importance of our state forests, concurrently with carrying capacity studies on overused lands as identified by Department of Natural Resources.
- B. Consider the outcomes and recommendations of the work of the Maryland Outdoor Recreation Economic (MORE) Commission. Their feedback is scheduled for release in late 2019 and is likely to include complimentary information and recommendations regarding outdoor recreation.

Strategy Two

Develop a campaign to highlight the use of Department of Natural Resources lands for recreation use and align with a health promotion message. Initiate new and improve existing coordination and planning efforts with health initiatives to market outdoor recreation as integral to public health and personal well-being.

Strategy Two Action Items

- A. Leverage the new (as of September 2018) Memorandum of Understanding between Maryland State Park Service and Park Rx America to help implement the health promotion message of outdoor recreation at state parks. Target areas with populations that have both low parks use and elevated levels of chronic disease to track the effectiveness of health promotion initiatives.
- B. Work with public health and healthcare experts to launch a campaign to encourage residents to request prescriptions from their doctors to visit parks as a tool to reinforce the link between nature and human health. Create a program for visitors and park staff to walk in parks with doctors and nurses.

Strategy Three

Showcase Maryland's Native American and African American cultural heritage on public lands.

Strategy Three Action Item

- A. Develop an Indian Heritage Tourism concept and highlight significant Native American sites and stories in public parks, trails, and recreation areas, in consultation with indigenous people, experts, and agencies.
- B. Improve an African American tourism concept and highlight significant African American sites and stories in public parks, trails, and recreation areas in consultation with African American communities, experts, and agencies.

Ongoing Action Items

1. Promote the health benefits of being outdoors in parks at elementary schools as a tool to get the message to students with their parents at an early age.
2. Train park staff, especially rangers, programmers, and those at nature centers, on the health benefits of being outdoors in a natural setting.
3. Sponsor forest bathing, Park Rx America, and related nature-immersion programs that encourage visits to parks to receive the therapeutic health benefits.
4. Continue to develop additional opportunities to highlight African American history and the experience of enslaved people, as well as work to protect the landscapes and open spaces around important African American sites.
5. Incorporate a landscape view to protect and enhance species diversity, density, and richness through an ecosystem-based approach to land management decisions and individual land unit plans.

IV. PRIORITIES AND GOALS

Goal Three

Increase and improve opportunities for all segments of the population to access close-to-home land and water-based outdoor recreation opportunities.



Strategy One

Improve means for planning and investing in outdoor recreation opportunities that are accessible and enriching for residents and visitors of different ages, abilities, interests, and cultural backgrounds.

Strategy One Action Items

- A. Update park equity analysis GIS data layer with state and county data. Leverage updated park equity analysis findings to inform decision making. Work with local governments to evaluate park equity tools. Seek to increase participation in outdoor recreation and engagement in nature throughout Maryland's diverse social and cultural populations.
- B. Support additional recruitment of Spanish speaking staff for the Maryland Park Service.
- C. Investigate opportunities and/or consider creating new cross-cultural programming, cultural festivals, and events at state parks.
- D. Incorporate multiple languages when providing public information on signage, social media, technology, and print publications throughout the Department of Natural Resources system.

Strategy Two

Build, maintain, and renovate trails to create an interconnected, sustainable statewide trail system. Improve trail-based recreation opportunities for all users.

Strategy Two Action Item

- A. The Department of Natural Resources should inventory its existing trail system to identify Americans with Disabilities Act (ADA) accessible trails and determine trails that could be made accessible with the resources available and without significant modification or disturbance to valuable natural and cultural resources.

Strategy Three

Enhance opportunities for the public to access and participate in water-dependent outdoor recreation activities.

Strategy Three Action Items

- A. Encourage local, regional, and state entities to think creatively to fund and develop water access and water trail projects and consider pursuing funding sources that pair access with efforts that might not have been considered previously, such as environmental preservation projects, living shorelines and storm water abatement.
- B. Think creatively about developing projects at Maryland State Parks that encourage more water recreation opportunities for users that don't have the capacity to bring their own boats such as outdoor concessioners or canoe/kayak shares.

Strategy Four

Evaluate and prioritize the creation of new outdoor recreation opportunities on public lands.

Strategy Four Action Items

- A. Review Department of Natural Resources lands for opportunities to provide nature based recreational development such as low-amenity camping, fishing/canoeing access, birding, walking, biking, and equestrian trails, which are compatible with management purposes. Explore the potential for further expansion of resource-based recreation at Department of Natural Resources land units.

Strategy Five

Develop a Department-wide, consistent trail and wayfinding signage plan to create consistency and effectiveness of signage on trails and trailheads.

Strategy Six

The Maryland Park Service and Wildlife and Heritage Service should implement individual strategic management plans that guide maintenance, operations, and changes in user needs at state parks and wildlife management areas.

Ongoing Action Items

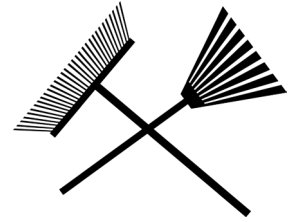
1. Continue to employ Spanish speaking staff in state parks and nature centers.
2. Continue to address accessibility in all outdoor recreation planning and development. This includes coordination with local committees and organizations for people with disabilities, improving and updating information such as maps that show ADA accessible trails and outdoor recreation opportunities, and physically improving and increasing the number of user amenities for people with disabilities for land and water outdoor recreation.
3. Implement opportunities to connect existing trail systems on Department of Natural Resources lands with other nearby communities and destinations of recreation, historic, or cultural significance or interest.
4. Continue to participate and assist in the efforts to create and develop the National Historic Trails (Star-Spangled Banner and Captain John Smith), and the Harriet Tubman Byway.
5. Continue coordination regarding future development and enhancing connections between on and off-road trail issues and opportunities between Department of Natural Resources, Department of Transportation, Tourism, county agencies, and partner groups.
6. Continue using best practices for sustainable trail design and maintenance. Consider guidelines developed by agencies and organizations such as the U.S. Forest Service, Student Conservation Association, and the International Mountain Bicycling Association.
7. Continue to explore opportunities to improve equestrian campsite locations at parks and forests with existing equestrian trails.

IV. PRIORITIES AND GOALS

8. Strive to identify and create new public water access sites in Maryland to advance the Chesapeake Bay Agreement's Public Access Goal of 300 new water access sites in the watershed by 2025.
9. Increase efforts to promote safe boating practices, boater courtesy, and stewardship ethic among boaters and paddlers.
10. Encourage local, regional, and state entities to think creatively to fund and develop water access and water trail projects and consider pursuing funding sources that pair access with efforts that might not have been considered previously, such as environmental preservation projects, living shorelines and storm water abatement.
11. Continue program development of the Conservation Job Corps, in partnership with local agency partners, to provide underserved youth with natural resource employment and outdoor recreation experiences on Department of Natural Resources lands.
12. Promote hunting and fishing recreation opportunities on all Department of Natural Resources lands where appropriate.
13. The State should continue to acquire land adjacent to existing parks and natural area boundaries to include additional natural and cultural resources and to address management issues.
14. Continue to monitor target shooting operations at existing shooting ranges to allow for the continued support of this activity in the local community and to provide adequate opportunity for target shooting in support of hunter safety programs and hunting generally.
15. Work with the Forest Service, Wildlife and Heritage Service, Maryland Park Service, Maryland Geological Survey, and other appropriate units to develop, enhance, or complete, and publish educational materials describing each land unit's important natural and cultural features (geology, landscape types, flora and fauna both rare and common, historical structures, or archaeological sites), why they are important, and how they can be viewed by visitors.
16. Improve the sharing of information about existing parks and outdoor recreation opportunities with the public.
17. Market technology to provide website links to county parks; trail systems; water- based recreation opportunities; natural, cultural, and historical resources; and camping for a seamless user information search experience.

Goal Four

Improve the overall quality of outdoor recreation infrastructure at public parks and outdoor areas across the state.



Strategy One

Account for and plan for climate change and sea level rise when planning the construction of new outdoor recreation facilities, especially those in vulnerable areas.

Strategy One Action Items

- A. Conduct a State Lands Climate Assessment. This vulnerability assessment of state recreational lands will utilize climate change related GIS data, infrastructure data, and ecological data to identify and understand vulnerabilities and impacts, including long-term impacts to recreational use, water access, infrastructure, and ecosystem management.

Strategy Two

Support preventative and critical maintenance for state parks and other recreation sites on Department of Natural Resources lands.

Strategy Two Action Items

- A. Develop a database that evaluates priorities for rehabilitation, stabilization, and interpretation of historic and cultural resources on state land. Consider prioritizing the maintenance of those resources most threatened by planned development actions, climate change, or other man-made or natural forces.

Ongoing Action Items

1. Determine how and where volunteer efforts could be better leveraged at state parks and other Department land units to assist with projects. Continue to support and maximize volunteer labor and expertise as a means of supplementing the work of professional staff.
2. Target ecological restoration and enhancement projects on state lands to promote climate resilience and adaptation to climate change.
3. Incorporate environmentally sustainable building, site design, and operational features into outdoor recreation projects.
4. Define and implement clear standards and measurable metrics for regular, recurring maintenance work for Department of Natural Resources facilities and amenities. Gauge performance overtime and leverage this information to improve maintenance practices.

IV. PRIORITIES AND GOALS

Goal Five

Promote environmental education and use of parks and outdoor areas as teaching tools to foster a positive stewardship ethos among children, youth, and their families.



Strategy One

Support the Maryland Project Green Classroom initiative and other state, local, and nonprofit outdoor environmental education programs that promote an understanding and appreciation for our natural world.

Strategy One Action Items are all ongoing.

Ongoing Action Items

1. Plan for greenways, corridors, and trails that connect schools, residential areas, and public buildings to green space, provide alternative transportation routes, and support a healthy, active lifestyle through thoughtful community design.
2. Use parks (state, local, and privately held) as outdoor environmental education sites to support environmental literacy in the classroom. Coordinate with local school districts and other parks and recreation agencies to address barriers and identify opportunities to schools using parks as outdoor environmental education sites, including location, transportation, and fees.
3. Support the use of public lands and parks for outdoor environmental education.
4. Establish equitable access to parks and green space for children from all types of communities, with special emphasis on communities that have historically had obstacles connecting to open nature spaces.
5. Initiate new, and improve existing, coordination and planning efforts with health initiatives, such as Park Rx America, to market outdoor recreation as integral to health and wellbeing.
6. Explore working with county governments to engage youth in bicycle and pedestrian planning efforts using Safe Routes to Play and Safe Routes to School strategies.
7. Identify and promote opportunities to co-locate natural areas near active recreation and multi-use sites. Balance active and passive recreational uses to meet user needs while fostering a sense of conservation practices with natural resource-based recreation.
8. Support programs such as Project WILD, Project WET, educational trunks, and other resources for schools and communities that connect people to the outdoors and promote environmental awareness.

APPENDIX A: PROJECT GREEN CLASSROOMS ACCESS GOALS

PROJECT GREEN CLASSROOMS RECOMMENDATIONS

On June 8, 2017, Governor Larry Hogan signed a new [Executive Order⁶³](#) establishing Project Green Classrooms, renewing Maryland’s commitment to environmental education to ensure that every child in Maryland has the opportunity to learn about their local environment, develop a connection with nature, and have a better sense of place in their natural surroundings. The initiative will promote outdoor experiential activities and environmental education through Maryland’s schools, communities, and public lands. Project Green Classrooms is an enhanced and expanded group set to advance the following priorities and recommendations in new and collaborative ways. It will build on work that has developed since 2008 through the Maryland Partnership for Children in Nature.

Project Green Classroom’s Mission

“To mobilize resources to ensure that Maryland’s youth experience, understand, and learn to conserve the natural environment.”

The initiative serves as an advisory body, working collectively across multiple disciplines and public and private sectors to identify gaps and barriers, and make recommendations to decision-makers regarding solutions that will bring about change in the areas of environmental literacy, nearby nature, and career pathways for youth. The group works to:

- Promote and build support for use of the outdoors for learning, discovery, healthy play, and career exploration

- Support educators and education systems in advancing environmental literacy through planning, training, exchange of best practices, linking schools with partners, and more
- Increase access to “nearby nature,” to ensure opportunities for youth and others to experience nature within close proximity of communities, or to reach larger natural places (through collaboration with local and state planning authorities on green space initiatives, supporting and promoting parks and public lands, and more)
- Serve our future generation of innovators who will solve environmental challenges, by preparing our youth for 21st century environment-based careers and “green” jobs through workforce development and other enrichment programs

This appendix includes a set of goals and actions, developed by a subcommittee of Project Green Classrooms called the “Nearby Nature” Committee. These recommendations include objectives, best practices, and local and state examples and accomplishments over the last five years. The committee includes members from Maryland Parks and Recreation Association, Chesapeake Bay Trust, Montgomery County, Maryland Department of Planning, Maryland Department of Transportation, Maryland Port Administration, Maryland Department of Health, Maryland Park Service, and many other Department of Natural Resource staff, many of whom are also on this Plan’s Technical Advisory Committee.

⁶³dnr.maryland.gov/pgc/Documents/EO01.01.2017.12.pdf

1. Co-locate Natural Areas with Active Areas

Goal: Identify and promote opportunities to co-locate natural areas near active recreation and multi-use sites. This may include rain gardens and other green infrastructure, native plant pollinator gardens, pervious trails through natural areas, and more. The objective is to balance active and passive recreational uses to meet user needs while fostering a sense of conservation practices with natural resources based recreation.

There is often great opportunity to meet the demand of active recreation spaces (such as for organized sports) while creating spaces where families, and other visitors enjoy trails, natural areas and more passive recreation at the same time. This can serve to bridge the nature fear that can be prominent today and allow visitors to interact with nature in an approachable setting.

Sub Goal/Objective:

- Establish **trails and green spaces** near playgrounds, ball fields and other recreation areas that increases access to natural elements.
- Install [nature play areas](#) at parks, schools and public spaces that encourage creative, unstructured play and nourish a connection to nature.
- Employ **conservation practices** at park areas to improve the landscape and educate the public about conservation measures such as no mow areas, water conservation and native plantings. Include signage to identify practices.
- Engage youth to create and connect to nature through **schoolyard habitats and outdoor classrooms**.

Mount Airy's Rails to Trails -- a nature trail for children in Maryland



huntingforrubies.com

Sub Goal #1

Nature play space at Windsor Hills Elementary, Baltimore City MD



twitter.com/marylanddnr

Sub Goal #2

Conservation protects open spaces and connects people to nature.



nrpa.org

Sub Goal #3

Outdoor classroom and school yard habitat, MD



baybackpack.com

Sub Goal #4

Local Plan Examples

Baltimore City

The master plan for Patterson Park includes goals to “balance active and passive recreation uses, ecological restoration and historic preservation.”

Patterson Park Master Plan, Baltimore City MD



pattersonparkmasterplan.com

Charles County

The co location of recreational facilities and natural areas at Oak Ridge Park in Charles County provides multiple use areas that may increase users access to natural areas and provide opportunities for family members and visitors to access natural areas while others in their party are using structured recreational areas.

Oak Ridge Park, Charles County MD



activerain.com

Montgomery

The Montgomery County PROS plan identifies nature play areas, an emerging trend for increasing access to nature, and includes nature play areas in its needs assessment report. The needs survey identified the need for “Development of program and service amenities that balance activity with the natural environment, such as nature playgrounds.”

Washington

The Washington County plans includes a goal to “Locate recreational facilities for the convenience and benefit of the most people.” The plan includes an objective to, “whenever practical, link parklands and open space by a system of pedestrian/bicycle trails, greenways, and or waterways.”

2. Create Community Connections

Goal: Plan for greenways, corridors, and trails that connect schools, residential areas, and public buildings to green space, provide alternative transportation routes, and support a healthy, active lifestyle through thoughtful community design.

Subgoal/Objectives

- Identify and **promote opportunities to connect schools and communities to natural areas using trails, transit, and non-automotive access.**
- Promote the **use of available funding resources** to create safe corridors and support connecting children to existing natural spaces. Available funding resources can be found at the [Project Green Classroom website](#).
- **Develop partnerships with organizations,** businesses, and State and local agencies to explore collaborative advancement of mutual goals.
- Consider using the **guidance, resources, and recommendations** developed by the [Project Green Classrooms Initiative](#), including the [Community Green Space Guide](#).

Example Best Practice

Capital Crescent Trail, Montgomery County MD

A trail connecting residential areas to downtown Bethesda

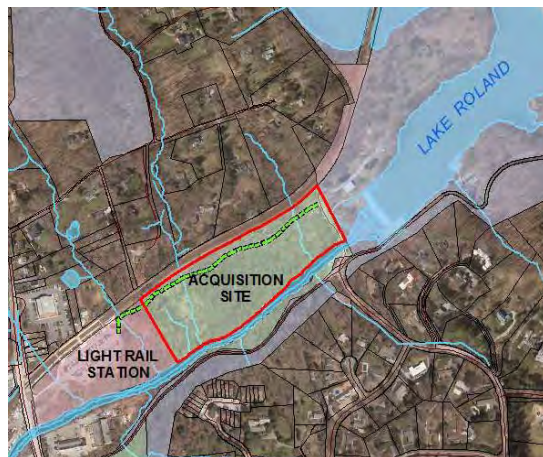


taimages.railstotrails.org

Local Plan Examples

Baltimore County

Lake Roland park is 503 acres park that includes diverse ecosystems, mature forest, trails, and two National Register historic districts. The park is a great example of Transit Oriented Recreation (TOR), as it connects transit to public space through boardwalks and land connections. The park is served by two forms of mass transit, bus and light rail, and is an example of improving community connections increasing access to public lands.



Queen Anne's

The Cross Island Trail is a community trail that connects schools to community and cultural areas and provides a transportation alternative to the community. *"The six mile Cross Island Trail which traverses Kent Island from the Chesapeake Bay to the Kent Narrows is a nationally acclaimed trail, is part of the American Discovery Trail. The trail attracts many visitors to the area, with the trail itself often the reason for their visit to Queen Anne's County. Additional spurs from this main trail such as the Kent Island South Trail, and the proposed Cross County Connector Trail, offer connectivity to various neighborhoods, commercial centers, entertainment, historic and cultural sites, parks and schools on Kent Island."* (pg. 21 of Queen Anne's County LPPRP)

Cross Island Trail, Queen Anne's County, MD



midatlanticdaytrips.com

Calvert

The Calvert County plan includes an updated goal of connecting town centers to open spaces via trails. One of the main stated goals is to *"Develop an interconnected system of pedestrian trails and bike paths throughout the county to link together places people live, work, play, and visit in Calvert County and Southern Maryland."*

Battle Creek Cypress Swamp Sanctuary, Calvert County MD



calvertparks.org

Anne Arundel

The Anne Arundel County Plan calls for enhanced connections of trails to schools to provide opportunities for students and children to be active and increase time outside. The plan establishes the policies to, *"Complete the development of the planned trails described in Section B.1.d, and also emphasize the construction of small connectors, such as those between trails and schools or other common destinations for nonmotorized travelers. Investment in these small linkages can greatly improve overall trail connectivity, enhancing both the recreational and transportation function of the County's trail system."*

Howard

The Howard County plan includes an example of strengthening community connections to the park, providing passive recreation opportunities, increasing access to the river, and providing non-formal environmental education opportunities through the High Ridge park. The plan describes a proposed trail along a water corridor that would connect High Ridge Park to two other disconnected open spaces, further south along the river.

3. Use Parks (state, local, and privately held) as outdoor environmental education sites to support environmental literacy in the classroom

Goal: Coordinate with local school districts and other parks and recreation agencies to address barriers and identify opportunities for schools using parks as outdoor environmental education sites, including location, transportation, and fees. Enrich learning opportunities for educators and students by increasing access to naturalists, educators, and natural resource specialists. Expand the use of public lands as sites for outdoor environmental education. Support the professional development of outdoor environmental educators to ensure that current curriculum standards frame the field studies in their parks.

Objectives

- Coordinate with county school districts to **develop curriculum-based programs or site specific fields studies in parks that support integrated learning**
- Establish or identify **model guidelines** for MOUs, safety documents and transportation strategies for using public lands to support E-Lit
- Provide access to **professional development training in State environmental education standards and practices**, Common Core, and NGSS. Provide educators with potential outdoor environmental education sites
- Enrich learning opportunities by **increasing access to naturalists, educators, and natural resource specialists** and expanding the use of public lands as sites for outdoor environmental education

Stream study at Little Seneca Creek, MD



Example Best Practices

Assateague Island State Park

Strategy: County Environmental Education Centers should work with park staff and the school system's ELIT Coordinator to align park offerings to meet the schools needs. Worcester county 6th Graders curriculum incorporates a three day visit to Assateague State Park to fulfill their environmental education requirement. The students were given pre and post-visit materials aligning with the curriculum established by the county science supervisor and park educators.



Statewide

Through a NOAA B-WET grant, Morgan State University, Chesapeake Bay National Estuarine Research Reserve (CBNERR), the Society for Ocean Sciences, and Calvert County Public Schools partnered to provide students throughout Maryland the “Plankton and Nutrient Studies for the Chesapeake Bay” (PLANS) program. This program provides hands-on experiences, including classroom investigation and scientific inquiry on the water, for students and increases their knowledge of the Chesapeake Bay and Maryland’s natural resources. Currently, PLANS II, an updated curriculum that focuses on aquatic habitats in the Bay watershed, is being piloted at three CBNERR-MD sites. This program has created a unique partnership between parks, local school systems, and non-profits.

Local Plan Examples

Calvert County

The plan includes a description of CHESPAX, the environmental education program of the Calvert County Public School System. The plan highlights how the program “utilizes local natural areas as outdoor classrooms for teaching science and building a relationship with the natural environment. This program is run as a cooperative effort between the Board of Education, Calvert County Natural Resources Division, Calvert Marine Museum, Annemarie Gardens, Calvert County Solid Waste Division, and Jefferson Patterson Park and Museum.” The Chesapeake Bay and the Patuxent River and other natural settings serve as living laboratories for students to use their science content and process skills to learn to make responsible decisions regarding the natural environment.

Montgomery County

The Montgomery County PROSE plan discusses the importance of co-locating parks near schools and using these spaces to support environmental literacy. “Many local parks are adjacent to schools and give children more room to play.”

“Montgomery Parks is a key player in environmental literacy planning in Maryland by public programming that supports Montgomery County Public Schools (MCPS) and Maryland State environmental literacy standards. Environmental literacy is a critical objective for the park and recreation industry, because it has a number of “positive impacts, from improving academic performance, to enhancing critical thinking skills, to developing personal growth and life-building skills including confidence, autonomy, and leadership.

In addition, a number of the studies showed that environmental education increased civic engagement and positive environmental behaviors.” Online at: <https://naaee.org/eeopro/research/eeworks/benefits-environmental-education-k-12>

4. Support the use of Public Lands for Outdoor Learning

Goal: Support the use of public lands and parks for outdoor environmental education.

Objectives

- Increase awareness of public park opportunities for visitors to engage with nature
- Create stewardship opportunities on public lands
- Expand public programming to be more inclusive of all visitors

Example Best Practices

Maryland Park Service

Park Quest – The Park Quest program is a series of challenges at various state parks that engage families in outdoor activities and tasks. The Basic Quest is an activity in a Maryland State Park that requires teams to complete a challenge. These challenges range from activity sheets and puzzles, to hikes and scavenger hunts! Park Quest activities are designed to take the average family approximately two hours to complete.

Maryland Park Service

Es Mi Parque – The Es Mi Parque program was launched by the Maryland Department of Natural Resources in 2016 as a pilot project to improve customer service and reduce access barriers for the Hispanic Community at state parks. By reaching children through environmental education programming and outreach activities we helped bridge a gap in communicating with parents and other adults, all while showing the Hispanic community that careers in the natural resources fields are available across the state. Further, the program showcased the diverse fishing opportunities offered throughout the state and educated the public about the water safety and recreational fishing regulations. Through partnerships with other state agencies, friends groups, bilingual volunteers, and outdoor industry partners, DNR connected with families through fish identification games, interactions with Splash the Water Safety Dog, and hands-on fishing demonstrations and lessons.

Hispanic Outreach Program, Sandy Point State Park



Local Plan Examples

Howard County

The County LPPRP describes current and future features at Western Regional Park “*The trail winds through various ecosystems including meadows, woodlands, and wetlands. The educational kiosks in each of the ecosystems will educate trail users about the significance of each and the relationship of those systems to the community. Various creative and interactive learning opportunities exist at each kiosk to foster and encourage young curiosity.*” The plan for the park includes “*...nature play areas to be located throughout this woodland area to help foster a community that actively participates in conservation and sustainable measures.*”



Worcester County

The Worcester County Plan discusses the importance of establishing the new Greys Creek Nature Park and the plan to develop a sustainable environmental education program. This priority links the actions of local partners planning for green spaces that will support recreation and environmental literacy for both school groups and the general public.

"Grey's Creek Nature Park is a 574-acre parcel acquired in 2006 and located in the northeast of the county. The land was purchased by the state and transferred to the county with the intent to provide environmental education and passive recreation to the public, and to contribute to serving recreational needs in the northern area of the county."

Greys Creek Nature Park, Worcester, MD



mdcoastalbays.org

Montgomery County

The Montgomery PROS plan discusses promoting stewardship and creating opportunities for residents to become engaged in parks and participate in volunteer efforts, "by promoting environmental stewardship and literacy, managing volunteer programs to tackle non-native invasive species, trails, and stream cleanups, and by providing attractive, safe, and interesting opportunities for people to enjoy the outdoors."

5. Establish Equitable Access to Parks and Green Space

Goal: Establish equitable access to parks and green space for children from all types of communities, with special emphasis on communities that have historically had obstacles connecting to open nature spaces.

Equitable access provides increased health and academic benefits for all communities, especially those communities often underserved and under-engaged.

Subgoal/Objectives:

- **Work with counties to collect GIS data** on outdoor recreation facilities and amenities, including trail heads, to provide better understanding of the level of service provided.
- Conduct an asset and **gap assessment** using the GIS data. Use factors such as demographics, proximity and health to update and equity analysis.
- Engage local communities to share and use the tools, identify gaps and **prioritize projects**.

Local Plan Examples

Montgomery County

The Montgomery LPPRP plan incorporates equitable access for different population throughout the plan. It specifically includes goals of accessibility to parks via public transportation and walking and biking. This chapter includes a great discussion of the benefits of urban parks, calling them the “outdoor living rooms” of urban areas and speaking to the need for equity for walkable parks where income is lower and access is more limited. Some of the actions called for in the plan include:

- *“Promote park and recreation equity for all citizens of the County.*
- *“Provide parks in areas of higher concentrations of lower income households with low walkable access to parks, recreation and open spaces, as identified to the Park Equity tool and staff analysis.*
- *“Add Park Equity to the criteria for prioritization of the Capital Improvement Program to promote equitable access to parks for all.*
- *Consider Park Equity as a priority when recommending new parks and open spaces in master plans.”*

Queen Anne’s County

The Queen Anne’s County’s plan includes a proximity analysis with population data and park equity maps. The County used the Park Equity data that includes information on the concentration of children and senior citizens which may have implications on populations with less access to vehicles, and therefore higher need for parks within a walking distance.

Allegany County

The plan for identifies communities that are underserved by parks and includes a goal of continuing park development in these areas. “Although the County has 30 acres of public recreation land per 1,000 persons, it should continue acquisition of property for park development in various small communities that are underserved. Continued park acquisition in areas of high and medium-high need like the Valley Road and Bedford Road area of the County is a priority.”

6. Coordinate with Partners to Maximize Health Benefits of Access to Public Lands

Goal: Initiate new, and improve existing, coordination and planning efforts with health initiatives to market outdoor recreation as integral to health and wellbeing.

Objectives:

- Coordinate with **existing health initiatives and stakeholders** to highlight the physical and mental health benefits of time spent outdoors
- Construct a **health campaign** to connect with programs **such as Park Rx America** that assist **health care providers in** supporting patients’ access to outdoor recreation, by providing information on available parks and nature-based activities there
- Develop a campaign to highlight **four season outdoor recreation use** and align with a health promotion message
- Consider additions to park amenities to facilitate recreational activities in less-used seasons

- Promote **walking and nature trails** as a tool to address health concerns from a variety of illnesses
- Use parklands and greenspace to combat **heat-related illness** through planning improvements that increase shade, such as expanding canopy cover

Example Best Practices

Park Rx America

Park Rx America is a Community Health Initiative whose mission is to prescribe parks to prevent and treat chronic disease and promote wellness by connecting patients to parks. Park Rx America is a low-cost intervention that utilizes a known, generally trusted, and accessible resource – parks – to influence positive health outcomes by way of the provider-patient relationship in the health care setting. To date, Park Rx America has developed a standardized park rating tool, and created a searchable database that can be linked to Electronic Medical Record systems to facilitate the writing of prescriptions to specific park locations. Maryland Recreation and Parks Association is partnering with Park Rx America to add comprehensive local park data to the tool and promote health partnerships in Maryland.

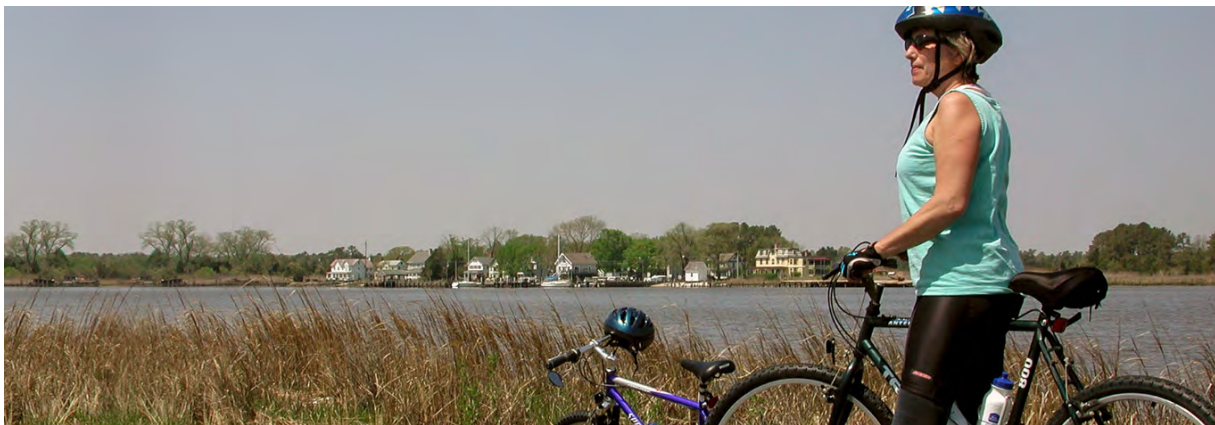
Somerset County Trail Mix

As a service of the Board of County Commissioners, Somerset County Recreation and Parks is responsible for creating and providing recreation, leisure, and community services necessary to promote public well-being and quality of life for youth, adults, senior citizens, and special needs of Somerset. Somerset Trail Mix is a great way to get healthy and explore Somerset County through hiking, walking, golfing, biking, and paddling.

Docs in the Park

Docs in the Park is a local program involved in the national movement of encouraging children and families to connect with nature through doctors prescribing physical activity in local parks to their patients. Docs in the Park is an alliance of professionals across sectors of recreation, health, education, and environmental advocacy with a mission to promote the health of children by connecting families with local healthy foods and increasing opportunities for active outdoor play in nature. Baltimore City and Frederick City both have active Docs in the Park programs, and the efforts are growing across the State.

Somerset Trail Mix -- Biking, Somerset County MD



somersettrailmix.com

Local Plan Examples

Prince George's County

The plan includes a goal of identifying areas underserved by trails, and to begin developing feasibility studies in these areas. This is important for equitable access for communities for exercise, transportation, community health, and access to nature. This is also demonstrated with the goals of the County Resource Conservation Plan to improve human health by connecting to green spaces and open spaces.

Montgomery County

The Montgomery County PROS Plan includes a meaningful discussion of the role of parks in the health of its citizens. *"The Department of Parks is a key player in this effort, in that it is essentially a health care provider. As a provider of park and recreational amenities, Parks is responsible for safe, accessible, and attractive open spaces and amenities for people to enjoy for the benefit of their health. Access to nature has a positive influence of people's mental and physical health.*

The Department of Parks currently has many parks and amenities to meet physical active health needs of the community. The many acres of natural environments for contemplative experiences are a great benefit to the mental and restorative health of the residents. With the growth of the county continuing at the rate it has been growing, providing more open spaces, programs to address health needs and access to them will be the challenge."

The discussion of implementation strategies states, *"This 'prescription for nature' can help prevent serious health conditions in children including obesity and diabetes and can serve as a support mechanism for attention disorders. By expanding the acres of natural-resource based recreation areas available to area children, M-NCPPC delivers health benefits to Montgomery County's youngest residents."*

APPENDIX B: STATEWIDE OUTDOOR RECREATION SURVEY REPORT

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Maryland Land Preservation and Recreation Plan Survey 2018 Final Report



May 2018

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INTRODUCTION / METHODOLOGY

The purpose of this study was to gather public feedback on the outdoor recreation demands in the State of Maryland. This feedback and subsequent analysis were designed to assist the Maryland Department of Natural Resources (DNR) in the update of its Land Preservation and Recreation Plan.

The survey was conducted using two methods: 1) a random telephone survey and 2) an online open link survey for members of the public who did not receive a randomly selected telephone survey (which was administered by the DNR). Unless stated otherwise, the analysis herein focuses primarily on the surveys conducted via the random telephone survey. Results from the 2018 survey are compared to 2013 (the last time this survey was conducted) throughout the report where possible (many of the questions changed in the 2018 survey, limiting direct comparisons year-over-year in some instances).

A total of 2,800 Maryland residents were surveyed in the random telephone survey. To better reflect the population of Maryland, the sample for the telephone survey was distributed across the state based on county population and a 50/50 quota of males and females was also attained. Furthermore, 57 percent of the sample were reached on a cell phone and 43 percent by landline (compared to 100 percent landline in 2013). The data from this survey was then weighted for age and race/ethnicity based on US Census data for the state of Maryland.

As responses to the open link version of the survey are “self-selected” and not a part of the randomly selected sample of residents, results from the open link questionnaire are kept separate from the telephone version of the survey for the overall analysis. The majority of the discussion that follows focuses primarily on results from the randomly selected sample of residents; however, the final section of the report exclusively evaluates the results of the open link survey and includes select graphs comparing the telephone and open link survey results.

EXECUTIVE SUMMARY

In general, responses toward the job and mission of the DNR, as well as to the benefits of land conservation and preservation, are very positive. Residents recognize and value the importance of having parks, trails, and outdoor recreation opportunities available to them. Findings were generally consistent across all four sub-regions within the state and with 2013 results, although differences are noted throughout the report. Key observations from the random telephone survey include:

- Nearly 9 in 10 Maryland residents visited a Maryland state park, forest, or wildlife area in the prior year (87 percent). Thirty-five percent visited a state outdoor recreation area about once every few months, 21 percent about once a month, 13 percent once a week, and 4 percent daily.
- Residents are generally most likely to stay within-region when visiting a state outdoor recreation area – this is particularly true among Western and Eastern region residents. However, Southern region residents were about as likely to visit areas within the Central region as within the Southern region.
- About two in five respondents typically travel under 30 minutes when visiting an outdoor recreation area (41 percent), 38 percent travel between 30 minutes to one hour, and 20 percent travel over an hour. Reported travel times were generally consistent, regardless of region of residence. As compared to 2013, residents indicated shorter travel times overall.
- A majority of residents use an automobile when accessing parks and facilities where they participate in outdoor recreation activities (93 percent), followed distantly by 10 percent traveling on foot and 5 percent traveling by bike.
- The greatest barrier to participating in outdoor activities continues to be “no time” (39 percent in 2018, down somewhat from 46 percent in 2013). Residents of the Central and Western regions of the state were more likely to mention “no time” as a barrier to participation. Along with no time, Southern region respondents were most likely to report not being aware of programs/facilities as a barrier.
- The majority of respondents indicate that at least one member of their household participates in outdoor recreation activities (87 percent). In descending order, the top ten most popular outdoor recreation activities include walking, hiking/backpacking, swimming outdoors, running/jogging, visiting playgrounds/nature play spaces, picnicking, playing outdoor athletic team sports, visiting a historical site, visiting natural areas, and paddling activities.

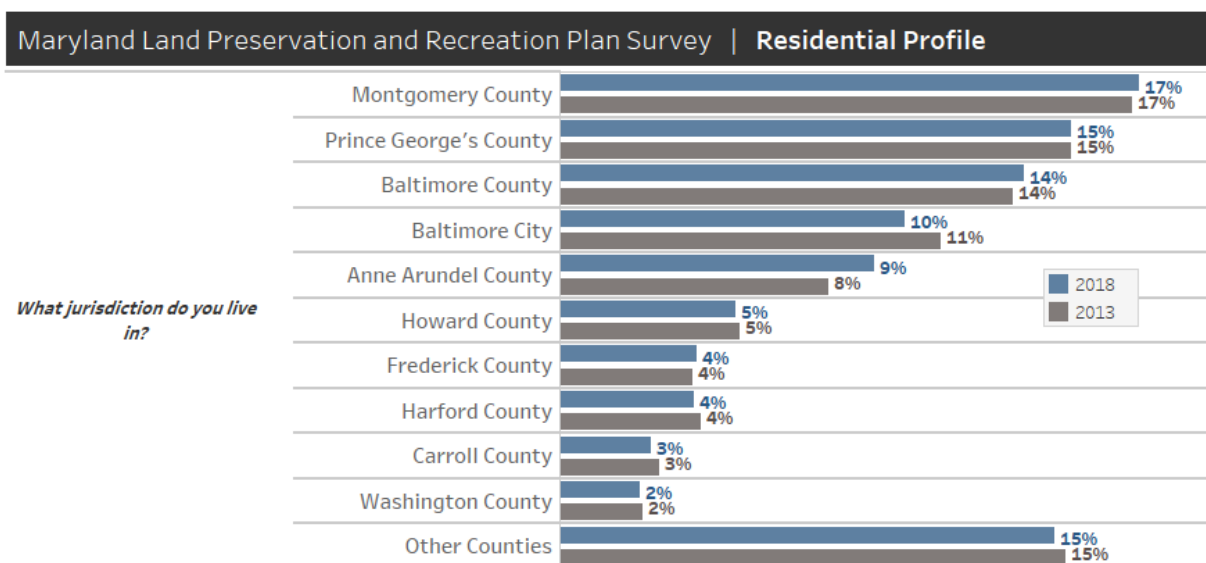
- The top two areas in which residents would like to see additions or improvements are trail-based recreation (e.g., hiking, biking, running, horseback riding, off-road vehicle use; selected by 34 percent of respondents as one of their top two priorities) and park outdoor activities (e.g., playgrounds, picnicking, athletic team sports; selected by 30 percent of respondents). Although trail-based recreation improvements is a top priority in all regions, Central and Southern Region residents were nearly as likely to identify park outdoor activities (e.g., playgrounds, picnicking, athletic team sports) as a top priority and more so than residents of the Eastern or Western Regions.
- Over half of the respondents indicate that the availability of parks, trails, outdoor recreation facilities, and outdoor education programs is “extremely important” to their household (56 percent).
- Less than one-third of the respondents indicate that the parks, trails, outdoor recreation facilities, and outdoor recreation programs are “completely” meeting the needs of their household (29 percent), indicating room for improvement exists.
- Residents indicated that many different aspects of land conservation and outdoor recreation are important. In descending order, the following are rated as “extremely important”: protecting the environment, promoting healthy active lifestyles, improving your quality of life, preserving cultural and historic resources, connecting people with nature, and providing economic benefit to the state. The benefits of conservation and outdoor recreation received high importance ratings in all regions, but particularly among residents of the Western Region.
- Most residents (61 percent) would like to see the DNR pursue an emphasis that focuses on a balance between natural resource preservation/protection through land acquisition/conservation and providing outdoor recreation opportunities in natural settings (as opposed to one or the other directions solely). However, as compared to 2013, higher shares of respondents indicated a preference toward either natural resource preservation/protection (21 percent) or developing outdoor recreation opportunities (18 percent).

PHONE SURVEY RESULTS

Respondent and Household Demographics

- In order to be representative of the population of Maryland, residents from each of Maryland's twenty-four counties were contacted to participate in the random phone survey. Quotas were set in order to receive county-level response proportionate to the share of Maryland population actually living in that county. For example, 17 percent of Maryland's population lives in Montgomery County and 17 percent of respondents to the phone survey live in Montgomery County. Prince George's County (15 percent) and Baltimore County (14 percent) were the next most represented counties in the phone survey (and the second and third most-populated counties in the state, respectively). The fourteen least-populated counties collectively account for 15 percent of responses to the phone survey (labeled as "other" in the graph below). Population and sample distribution of residence have both remained largely unchanged from 2013 in percentage terms.

Figure 1

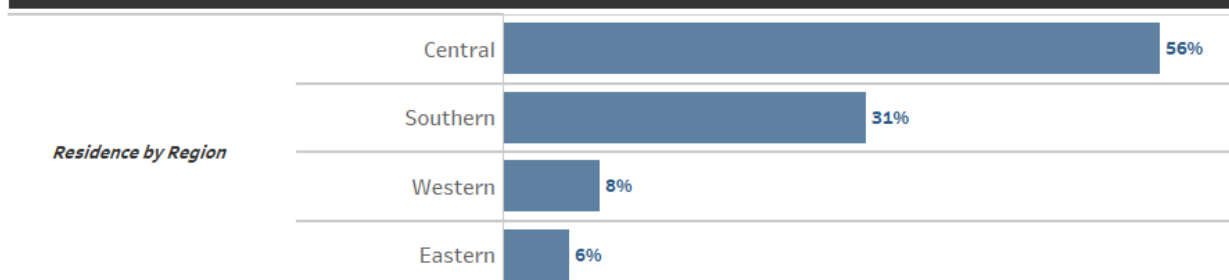


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- The figure to follow shows share of respondents residing in each of the four regions of Maryland. As shown, most respondents live within either the Central (56 percent) or Southern (31 percent) Regions. Much smaller shares of respondents live in either the Western (8 percent) or Eastern (6 percent) region of the state.

Figure 2

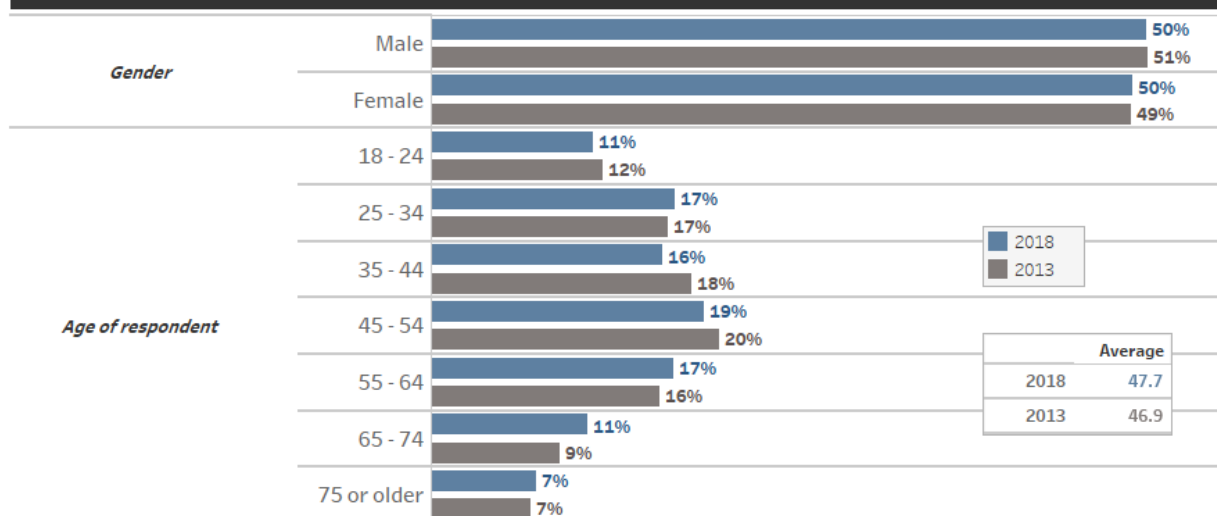
Maryland Land Preservation and Recreation Plan Survey | Residential Profile



- As previously noted, phone survey quotas were set to ensure an even split between male and female participants (50 percent each in 2018).
- The average age of respondents is 47.7 years, up slightly from 46.9 years in 2013. The marginally older visitor profile in 2018 as compared to 2013 mirrors the slightly aging Maryland population.

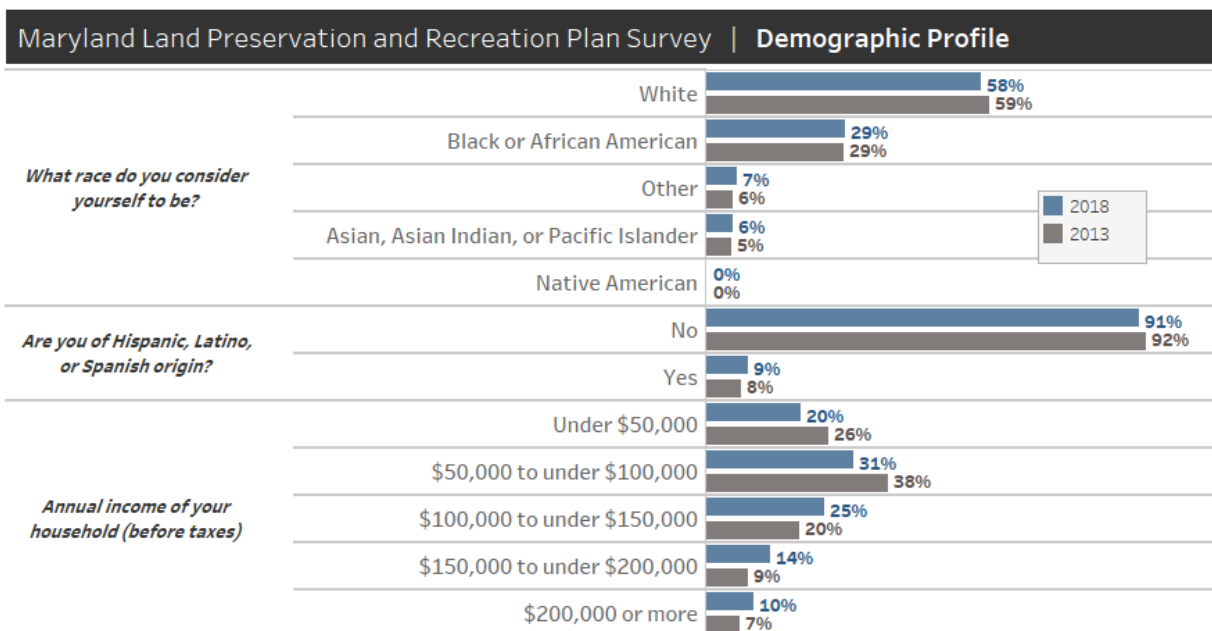
Figure 3

Maryland Land Preservation and Recreation Plan Survey | Demographic Profile



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- Nearly three in five respondents identify as White (58 percent), followed by 29 percent Black or African American. An additional six percent report their race as Asian, Asian Indian, or Pacific Islander, and seven percent identified as an “other” race. Less than one percent of the sample identified as Native American. Furthermore, nine percent of respondents report being of Hispanic, Latino, or Spanish origin.
- Household income was relatively evenly distributed. Twenty percent of respondent households earn less than \$50,000 per year, 31 percent earn between \$50,000 and \$100,000 per year, 25 percent between \$100,000 and \$150,000, 14 percent between \$150,000 and \$200,000, and 10 percent earn more than \$200,000 annually.

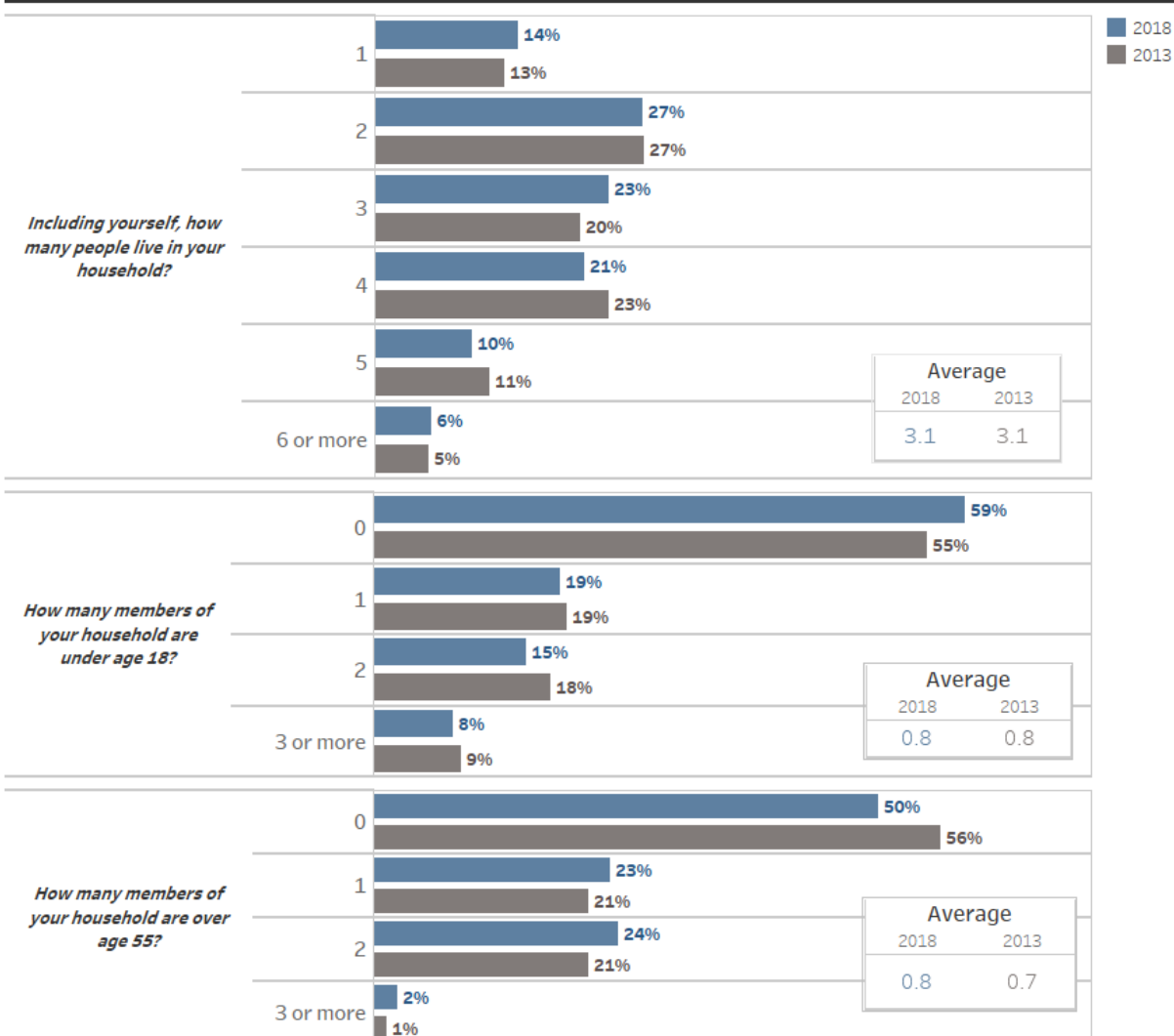
Figure 4

Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- The average household size is 3.1 people (identical to 2013). Fourteen percent of respondents live by themselves, 27 percent live in a two-person household, 23 percent in a three-person household, 21 percent in a four-person household, and 15 percent live in a household of five or more people.
- About two in five households have at least one household member under the age of 18 (41 percent, vs. 45 percent in 2013). About half of all respondent households have at least one household member over the age of 55 (50 percent, up from 44 percent in 2013). This shift in demographics from 2013 results generally aligns with the findings of Maryland Department of Aging’s State Plan on Aging, which concluded that the number of older Marylanders is increasing.

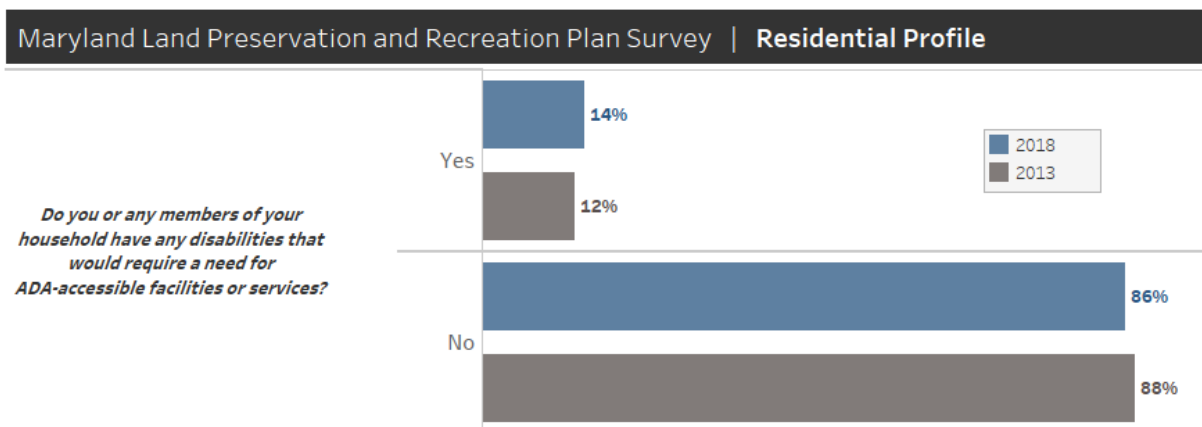
Figure 5

Maryland Land Preservation and Recreation Plan Survey | Residential Profile



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- With an aging resident base comes a slight uptick in the need for accessible facilities or services. Fourteen percent of households reported having a need for ADA facilities or services for a household member, up slightly from 12 percent in 2013.

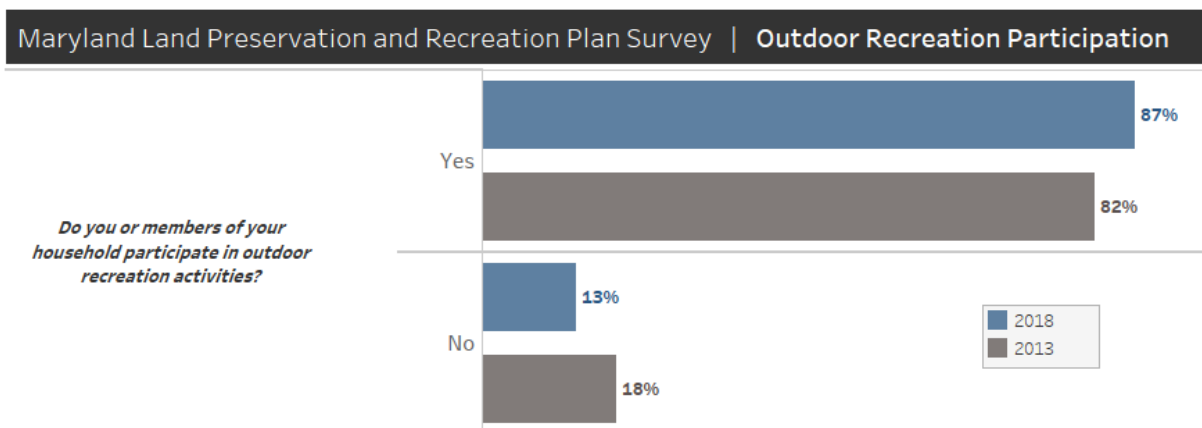
Figure 6

Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Outdoor Recreation Participation

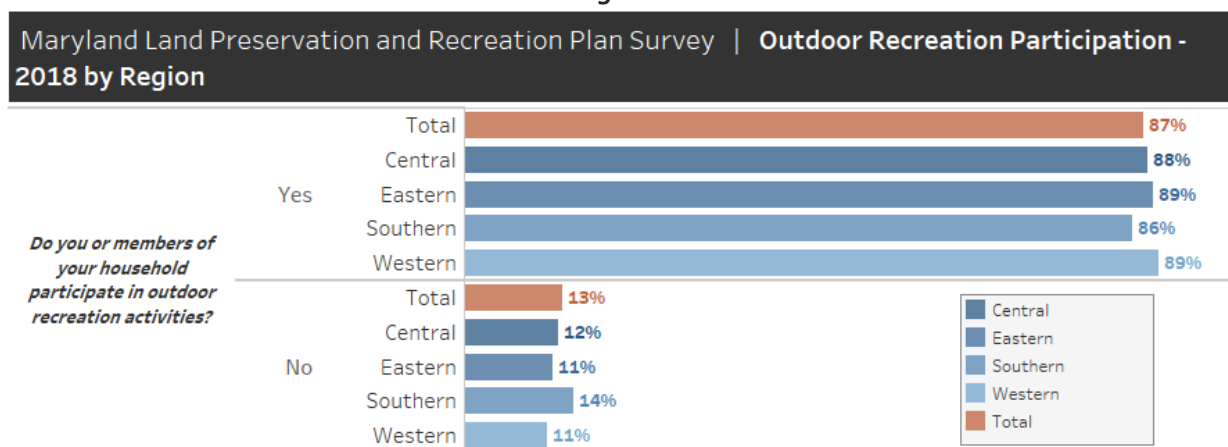
- The majority of respondents indicate that they or someone in their household participate in outdoor recreation activities. Overall, 87 percent of respondents indicate that their household has at least one outdoor recreation activity participant, up from 82 percent in 2013.

Figure 7



- The high outdoor recreation participant rate was maintained when examined by region. The Western and Eastern Regions had the highest levels of participation (each with 89 percent of respondents who reside in those regions indicating that members of their households participate in outdoor recreation activities), closely followed by the Central Region (88 percent), and Southern Region (86 percent).

Figure 8

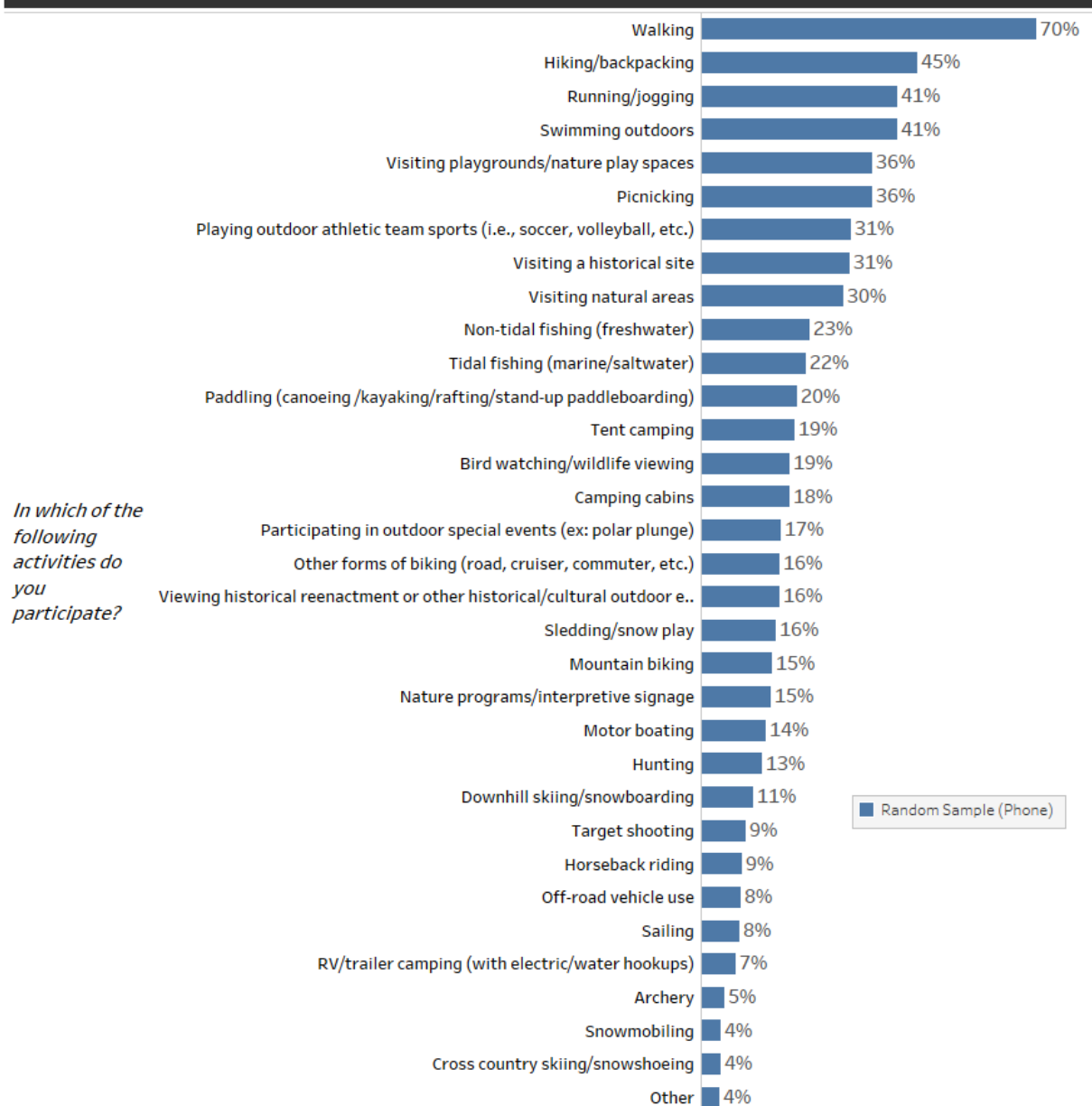


Outdoor Recreation Activities

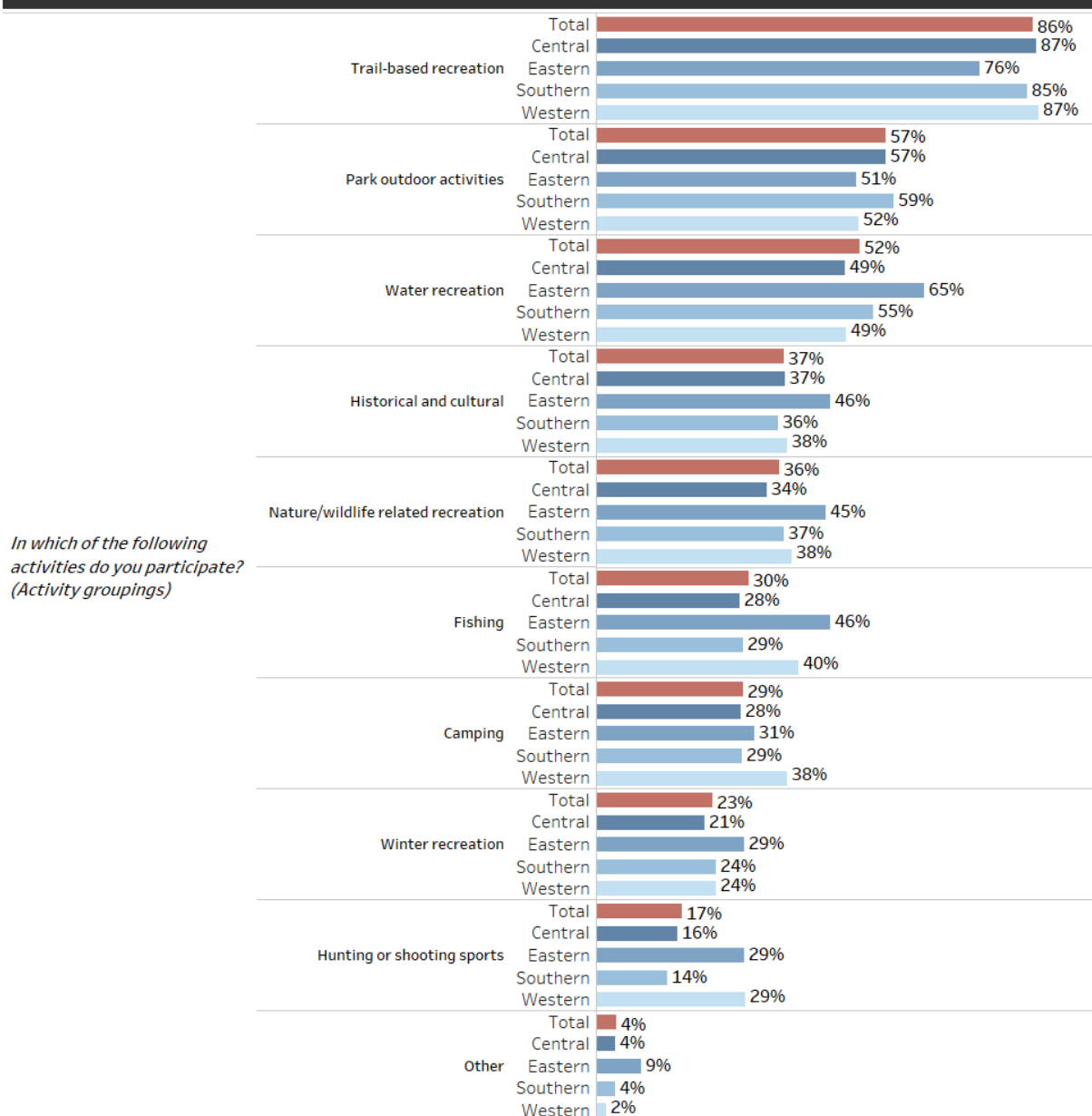
- Respondents participate in a wide variety of outdoor recreation activities. Respondents were asked whether they participate in 32 different activities and, on average, participate in 6.7 outdoor recreation activities. By far, the most popular among them is walking, with 70 percent of respondents reporting they engage in this activity (Figure 9). In a second tier of response, popular activities include hiking/backpacking (45 percent), running/jogging (41 percent), swimming outdoors (41 percent), visiting playgrounds/nature spaces (36 percent), picnicking (36 percent), playing outdoor athletic team sports (31 percent), visiting a historical site (31 percent), and visiting natural areas (30 percent). The remaining items received a range of 4 to 23 percent of respondents indicating that they participate in those activities.
- Four percent of respondents reported participating in “other” outdoor recreation activities not listed. Activities mentioned included gardening, golf, and tennis, among other, less cited activities. The full set of open-ended comments can be found in the appendix to the report.
- Trail-based recreation (e.g., walking, running/jogging, hiking/backpacking) was the most popular grouping of activities in which respondents participated, regardless of region of residence. Worth noting is that Eastern Region respondents were much more likely to indicate participation in water recreation and fishing than residents from other regions.
- When individual activity participation is assessed by region of residence (Figures 11 and 12), walking is still the most popular activity regardless of region. Eastern Region residents participate in the most activities on average (8.0). Residents of the other regions have about the same level of average activity participation (6.5-6.8 activities).
- When individual activity participation is assessed by resident age (Figures 13 through 15), some trends emerge. Walking is still the most popular activity regardless of age, but tends to be more frequently participated in by older age cohorts. Meanwhile, participation declines with age for activities such as running/jogging and playing outdoor athletic team sports. Overall, trail-based recreation is the most popular grouping of activities regardless of age. Participation tends to increase with age, but drops off for those aged 65 or older.
- Activity participation was also analyzed by self-reported race (Figures 16 through 18). Again, walking is a top activity, regardless of race. Black or African American respondents tend to participate in walking slightly more frequently than respondents of other races and also participate in outdoor athletic team sports more frequently. Non-White respondents are less likely to engage in water recreation, historical and cultural activities, and nature/wildlife related recreation than White respondents. Black or African American respondents are less likely to engage in fishing, camping, winter recreation, and hunting or shooting sports than respondents identifying as White or other races.

Figure 9

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018 Only

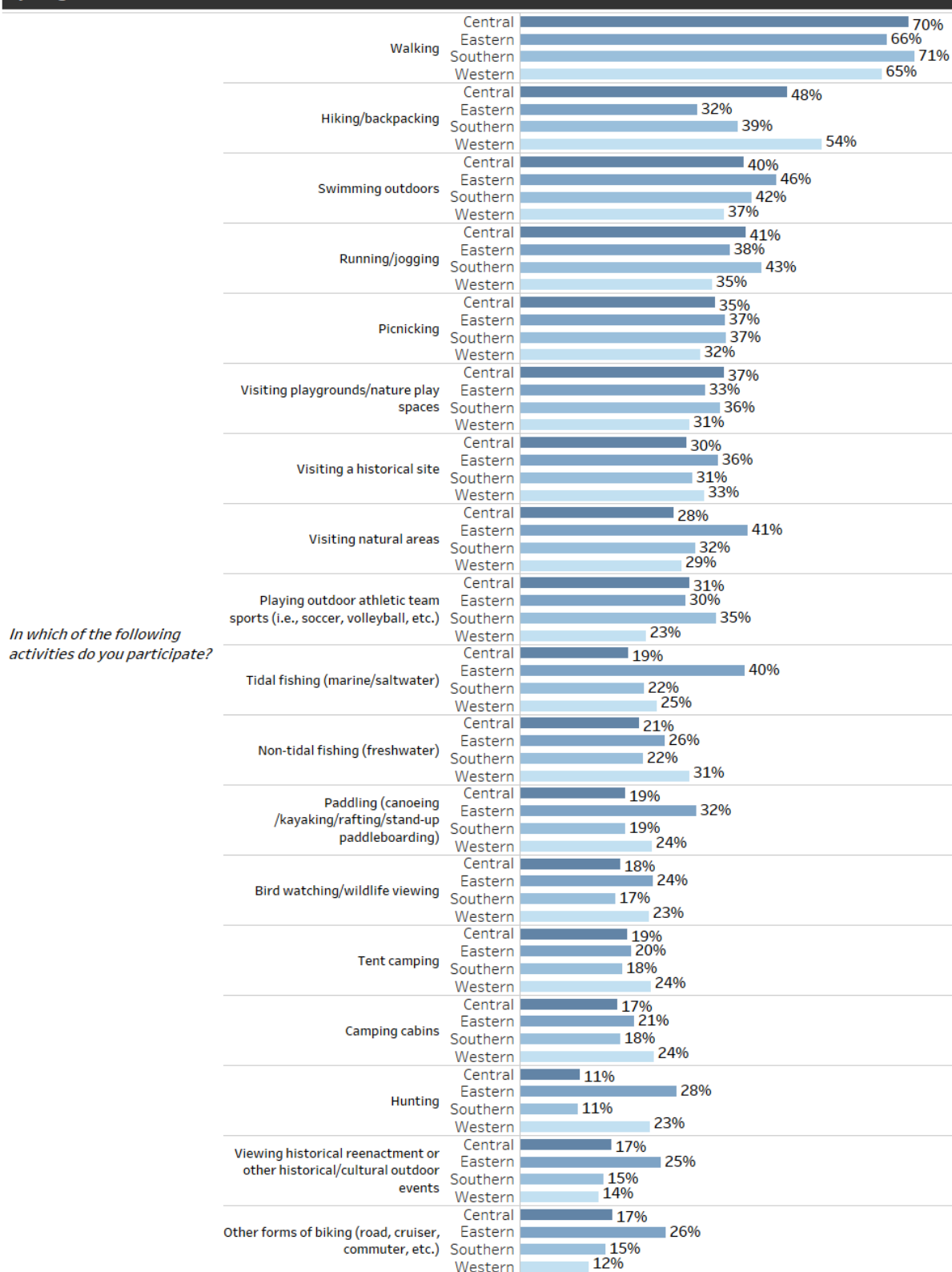


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 10
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Participation - 2018 by Region


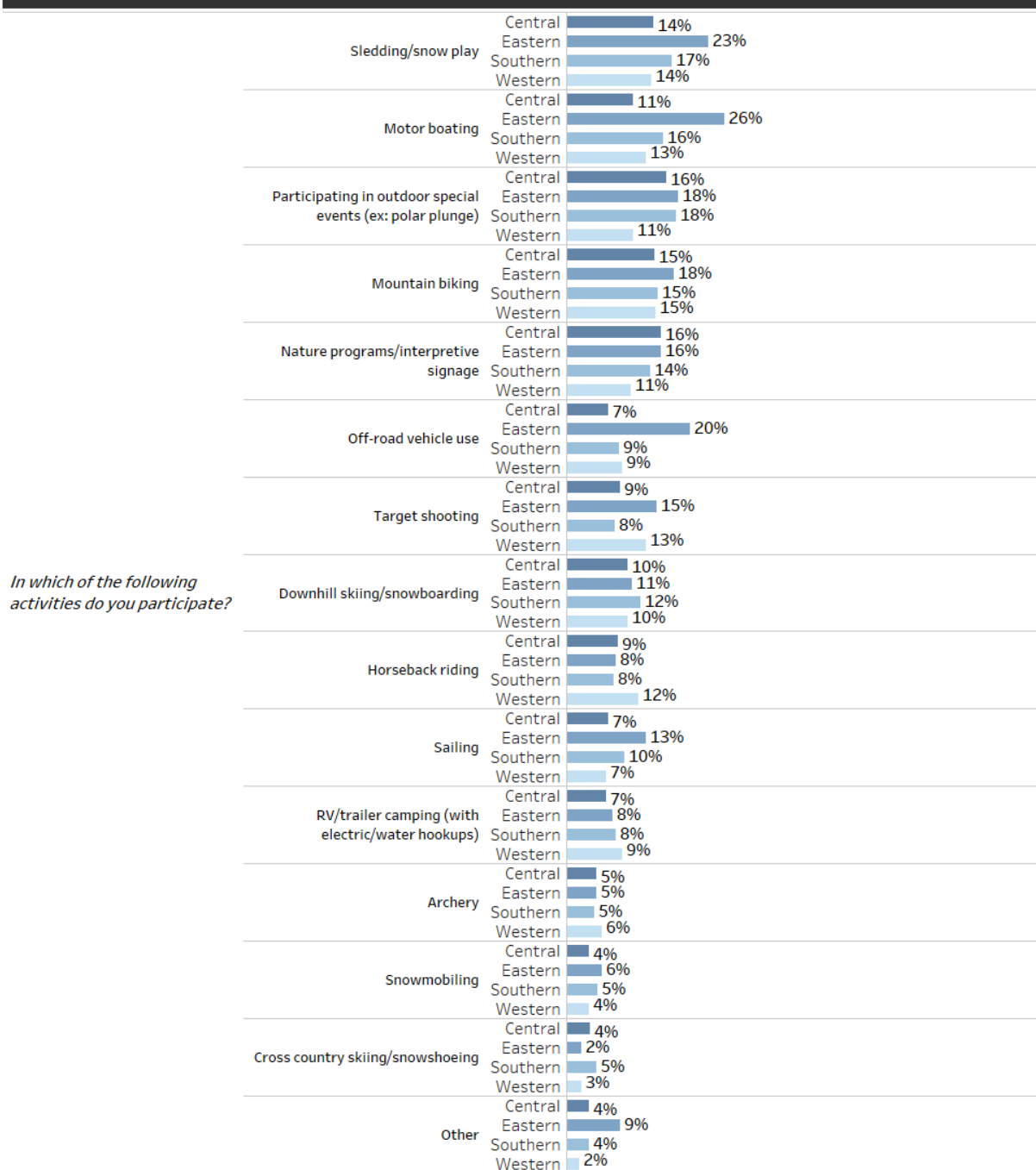
Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 11

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Participation - 2018
by Region


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

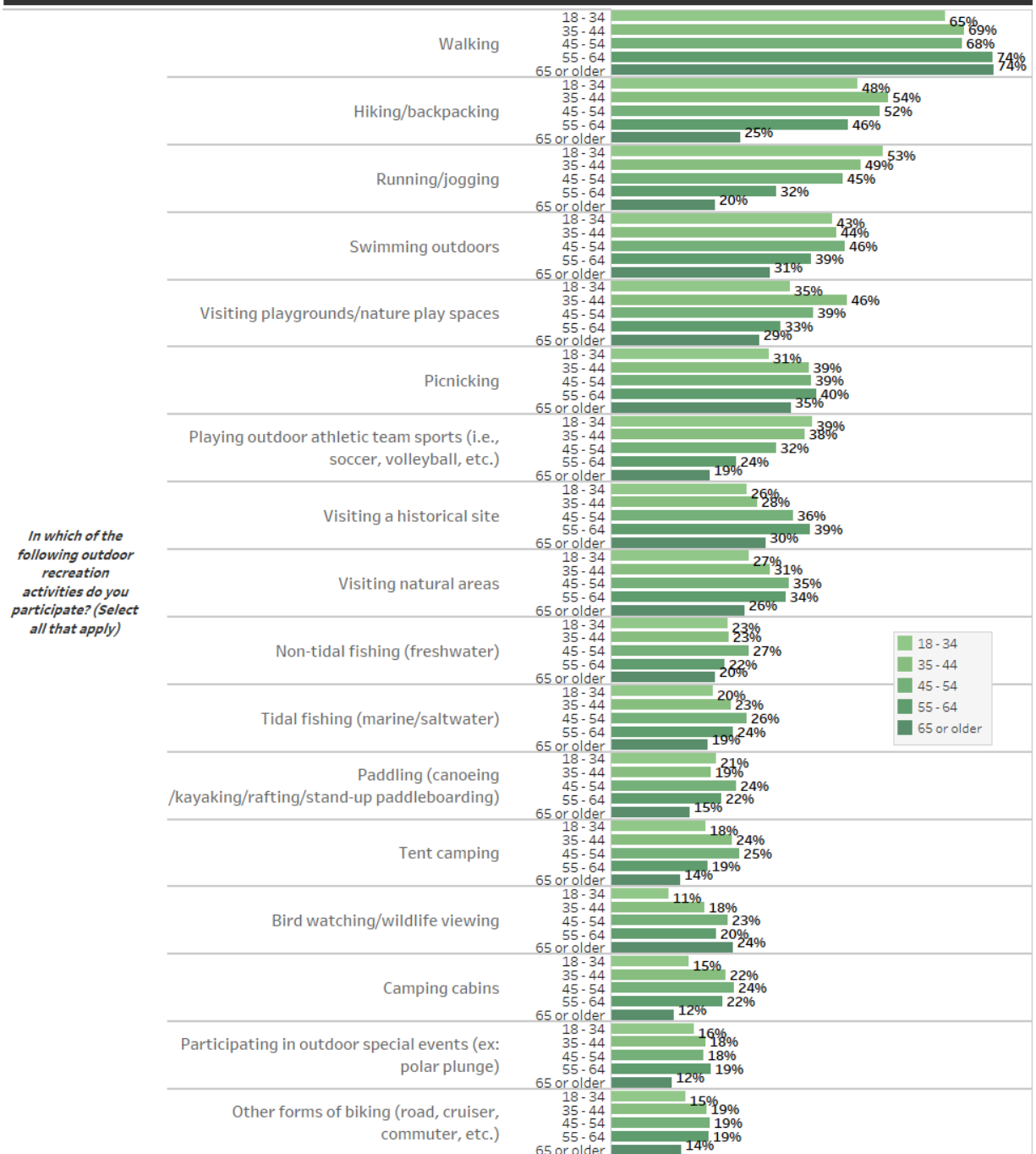
Figure 12

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Participation - 2018
by Region Continued


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 13

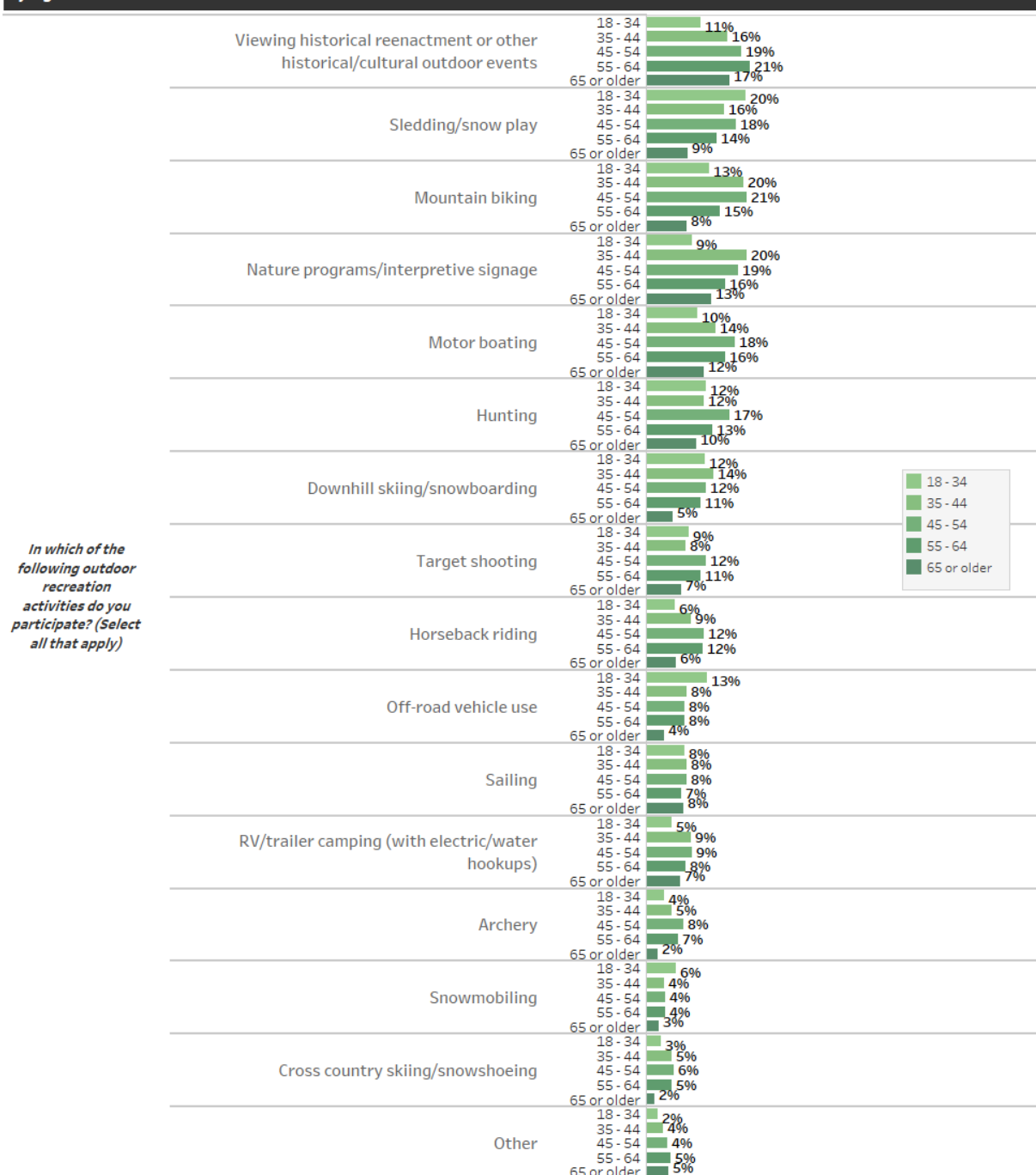
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
by Age



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

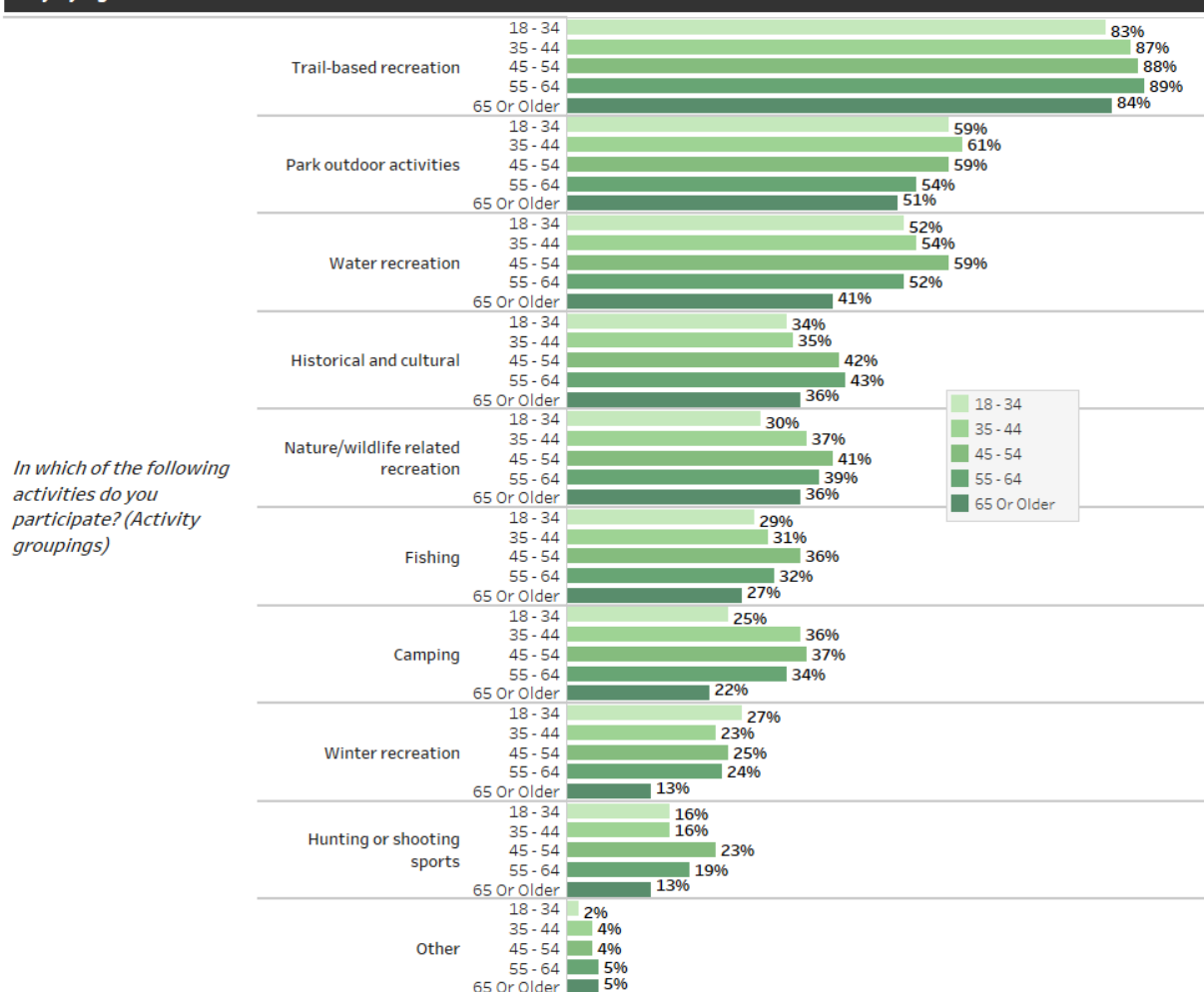
Figure 14

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
by Age Continued



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

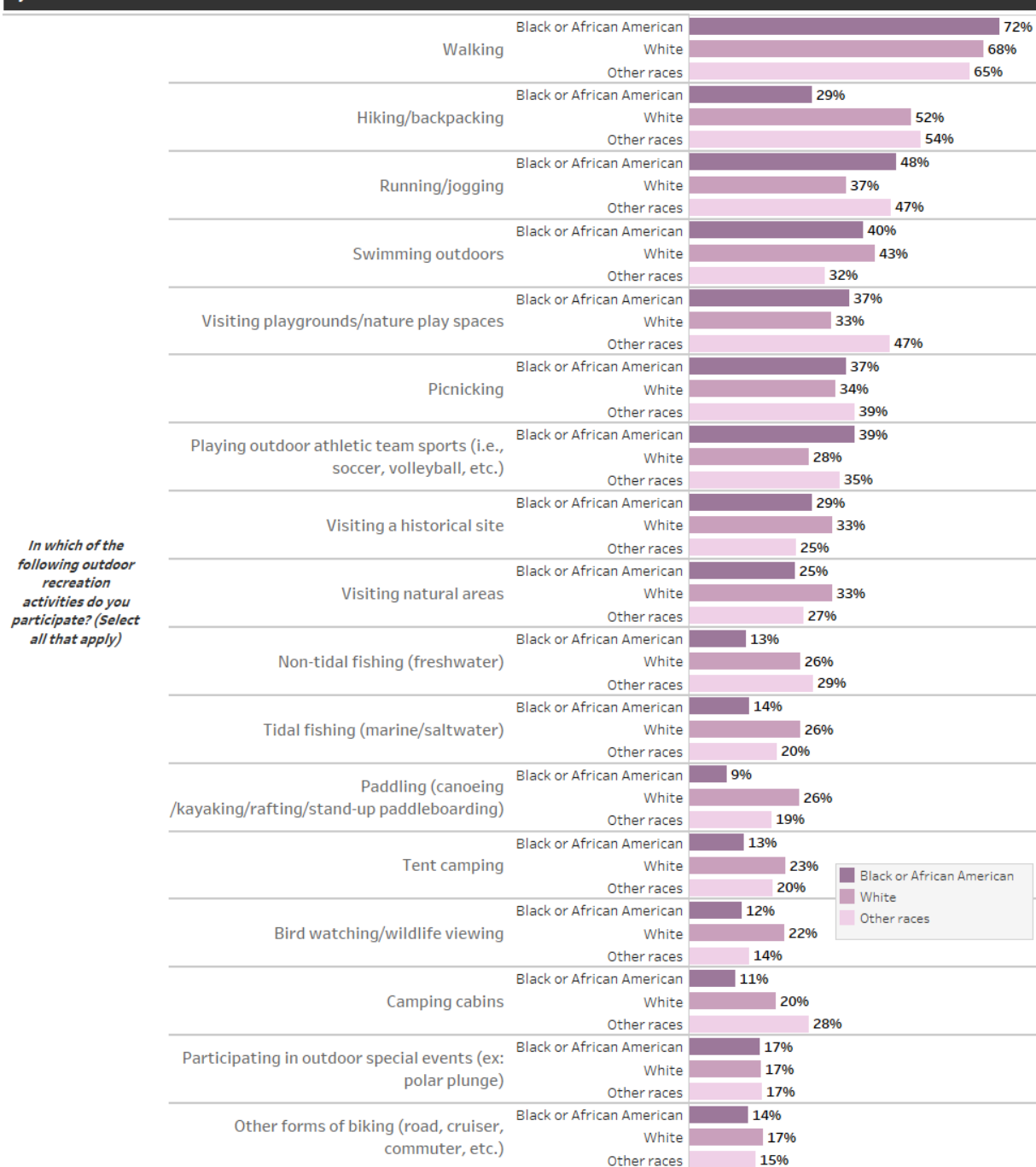
Figure 15

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
Only by Age


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 16

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
by Race



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

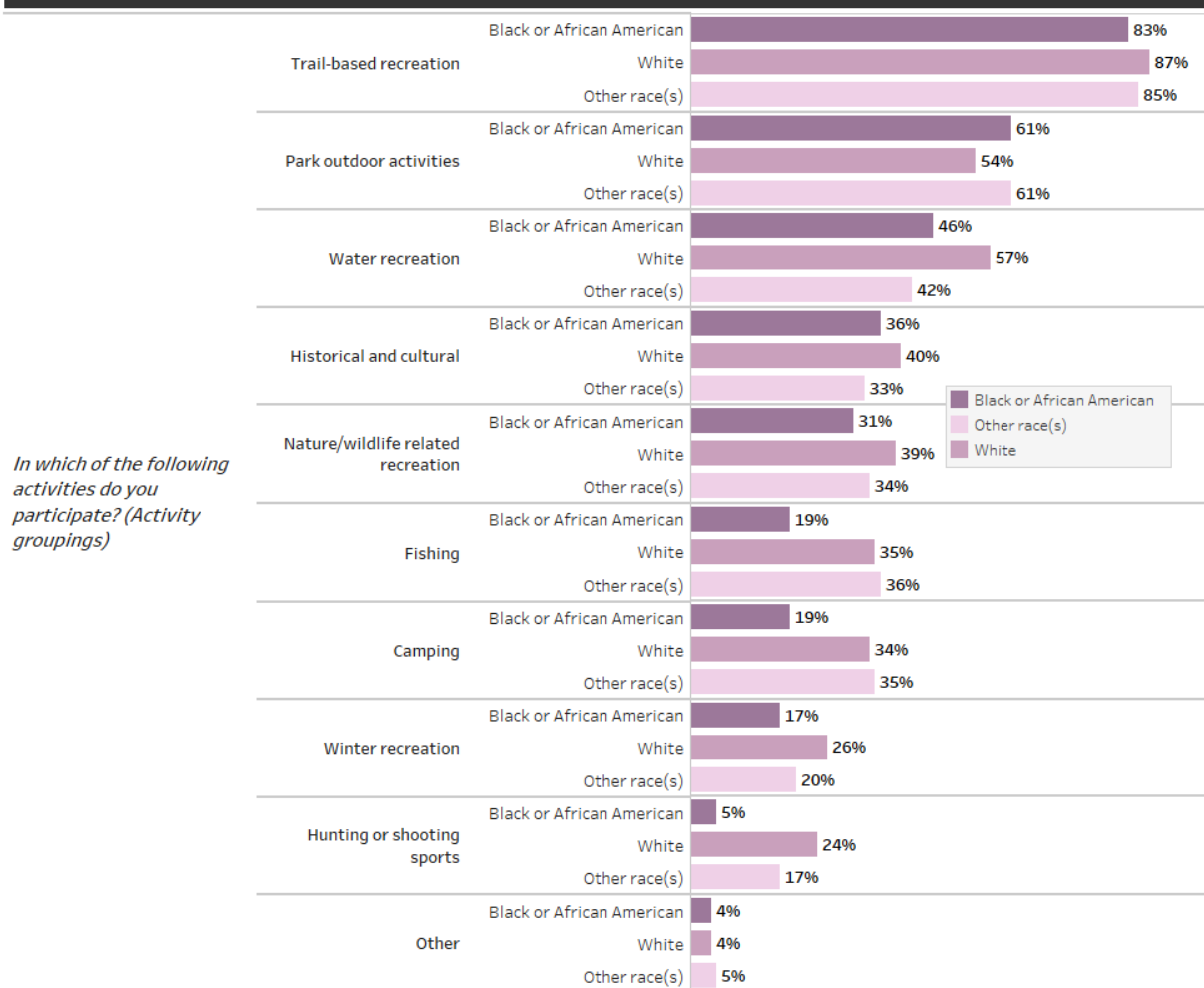
Figure 17

Maryland Land Preservation and Recreation Plan Survey | **Outdoor Recreation Activity Participation *2018**
by Race Continued



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 18

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
Only by Race


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Top Two Recreation Areas to Be Added or Improved

- In a follow-up question, respondents were asked which two outdoor recreation areas need to be added or improved in Maryland. As shown in the figure to follow, trail-based recreation received the highest level of engagement, with 34 percent of respondents indicating it was a top priority (21 percent) or a second priority (13 percent). Results highlight that not only is trail-based recreation the most participated in activity area, but also the area in which residents would most like to see development/improvement. Park outdoor activities also rose to the top of the list, with 30 percent of respondents selecting this item as a top (20 percent) or second (11 percent) priority. About one-quarter of respondents (24 percent) reported that water recreation is an area for addition or improvement in Maryland, making it the third-most prioritized type of recreation.

Figure 19



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- A notable 20 percent of respondents selected “other” a top or second priority for future addition or improvement. Residents mentioned a variety of ideas, and the reader is directed to the verbatim comments contained within the appendix to the report for insight into the depth and breadth of resident opinions. However, additional trails for walking and biking, trail connectivity, water access, clean water, and children’s activities came up frequently in the comments. Many phone survey respondents simply noted they had no other items to add to the list.

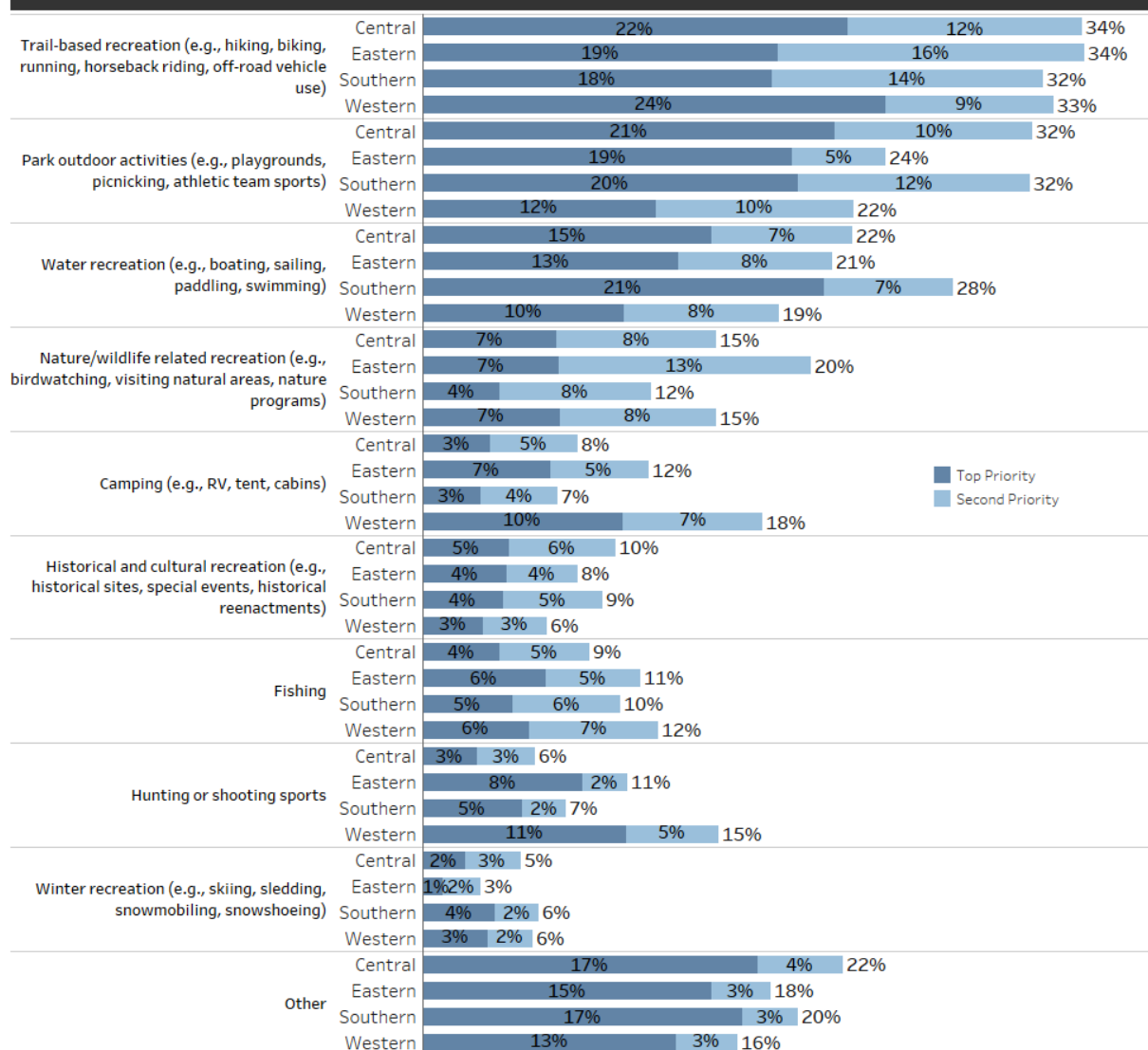
- Respondents were also given the opportunity to generally comment on future priority areas. While responses were varied in their focus and tone, an overarching theme is that residents are very engaged with and value outdoor recreation areas in the state. A random sampling of comments is included below:

- *"Add more golf courses."*
- *"Equipment is updated and safe."*
- *"Every place could use some improvements."*
- *"I like to boat a lot and there isn't a lot of places in my county to launch my boats."*
- *"I think there is a lack of fields, and they are in poor condition."*
- *"I think there needs to be more dirt bike trails."*
- *"I think they need more dog parks."*
- *"I think we need more bike paths."*
- *"I would like to have access to fly fishing on shores."*
- *"I would like to see more walking trails."*
- *"It would be nice if invasive vines were taken care of."*
- *"Lower the fees."*
- *"More basketball courts would be great."*
- *"More community centers."*
- *"Need more bike trails from town to town."*
- *"Need to open up more deer hunting tags."*
- *"The parks are well maintained."*
- *"The specific comments I would like to add to my response are that we need more off-road parks and better trails."*
- *"There is not enough public access to water, and there's not enough boat ramps."*
- *"We hope that they maintain and enhance what we do have in Maryland."*

- When priorities for addition or improvement are assessed by Maryland region of residence, trail-based recreation still rises to the top for each region. However, Central and Southern Region respondents were nearly as likely to prioritize park outdoor activities (32 percent, respectively). Other notable differences include Southern Region residents being more likely to prioritize water recreation, Eastern Region respondents being more likely to prioritize nature/wildlife-related recreation, and Western Region respondents being more likely to select both camping and hunting shooting sports as priorities. Ultimately, priorities for improvement generally align with frequency of activity participation within those recreation areas.

Figure 20

Maryland Land Preservation and Recreation Plan Survey | Top Two Recreation Areas to be Added or Improved - 2018 by Region



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- Priorities for addition or improvement were also analyzed by respondent age. Younger respondents were more likely to prioritize trail-based recreation and park outdoor activities than older respondents, but these were still top priorities for respondents regardless of age. All age cohorts were roughly as likely to prioritize water recreation (21 to 26 percent of respondents selecting it as a top or second priority). Meanwhile, prioritization of nature/wildlife related recreation, fishing, and historical and cultural recreation tended to trend up with age.
- Priorities for addition or improvement were also analyzed by respondent race. Black or African American respondents were most likely to indicate that park outdoor activities were a top or second priority (41 percent), and much more so than White respondents (25 percent). In contrast, Black or African American respondents were less likely to prioritize trail-based recreation than White respondents or those identifying as another race (27 percent vs. 36 percent). However, these two recreation areas still rose to the top as prioritizes, regardless of respondent race. Water recreation was also a top selection and response did not vary notably by race.

Figure 21

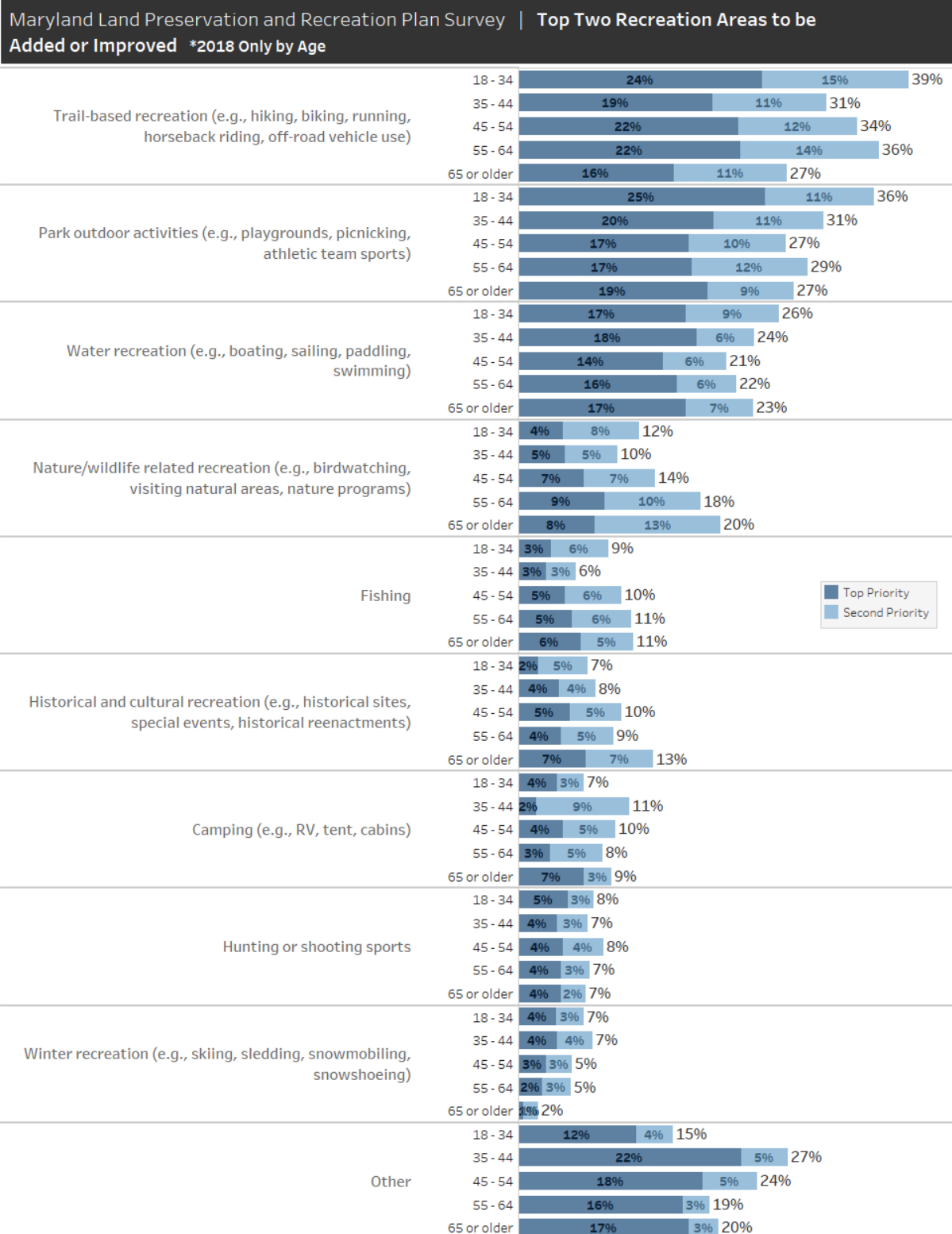
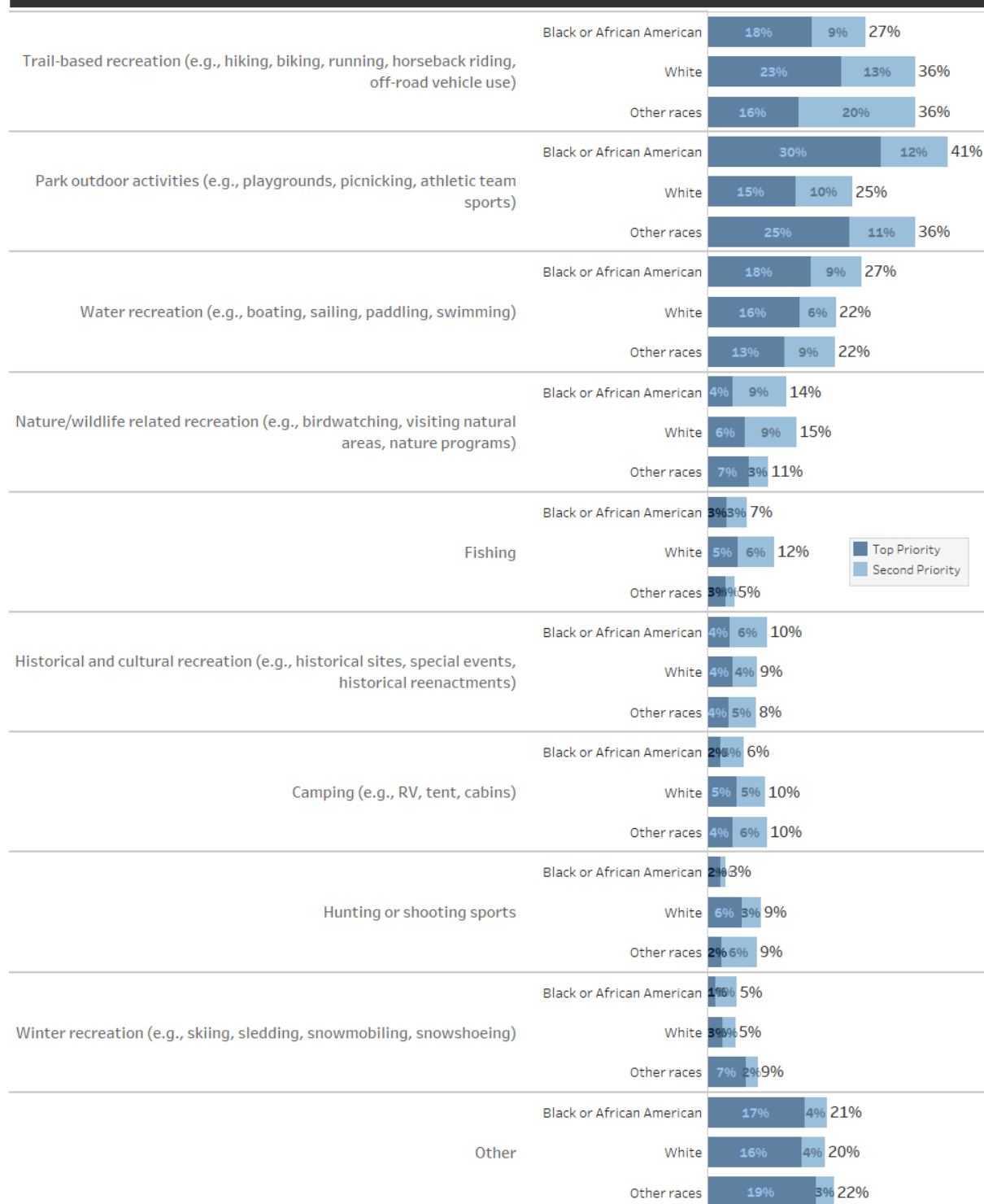


Figure 22

Maryland Land Preservation and Recreation Plan Survey | Top Two Recreation Areas to be Added or Improved *2018 Only by Race

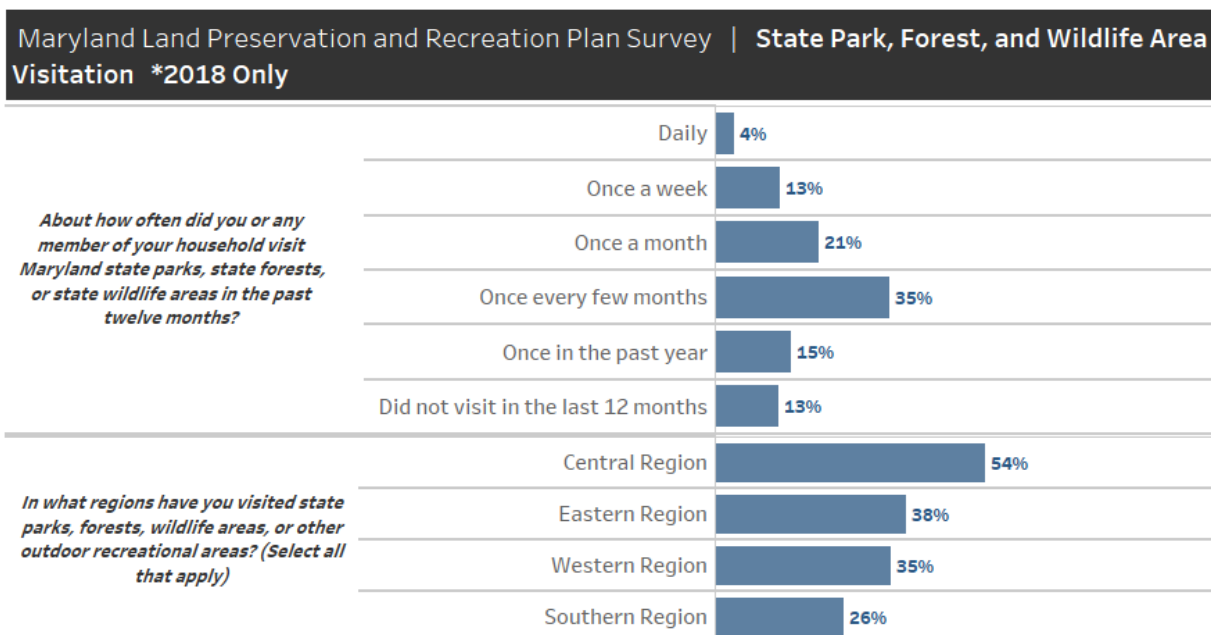


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Outdoor Recreation Participation Frequency and Location of Participation

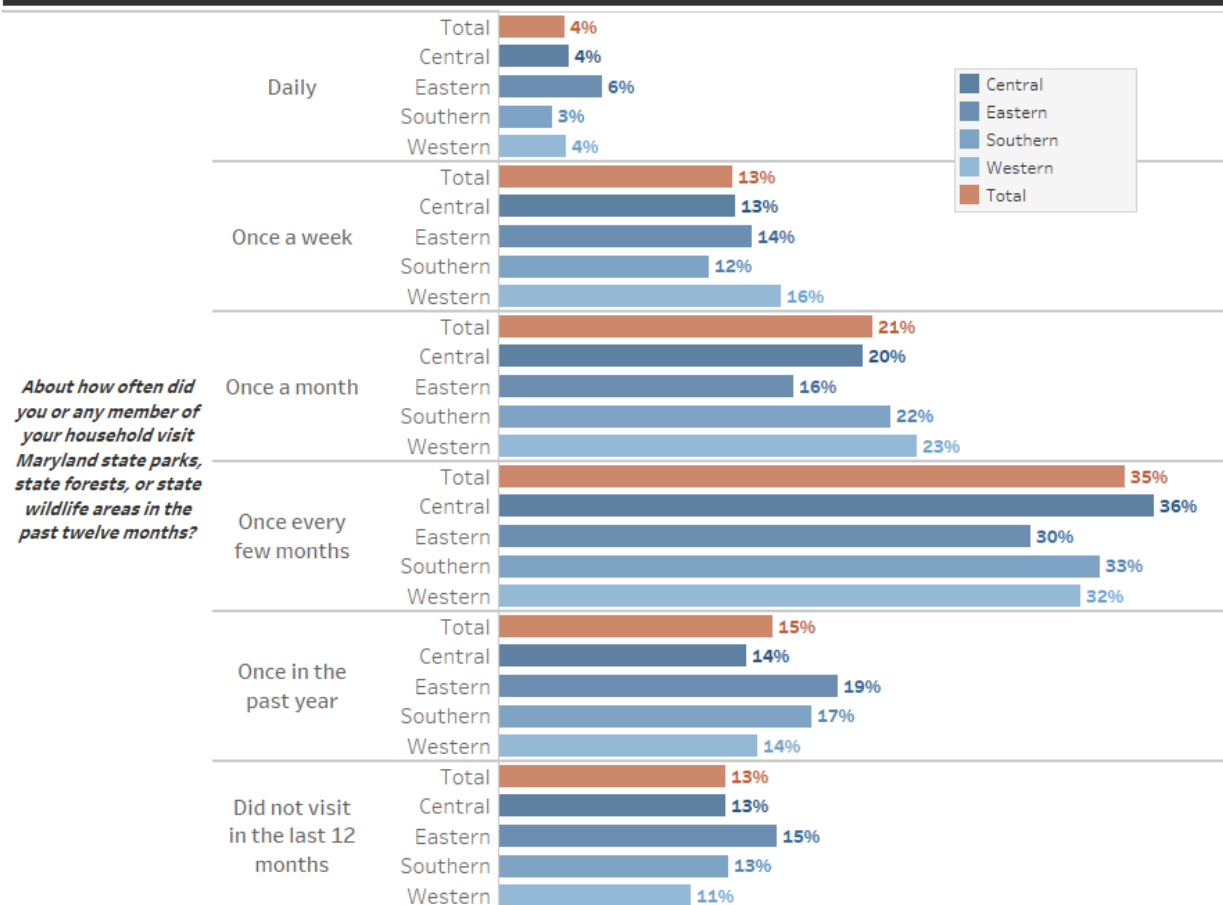
- Fully, 87 percent of respondents indicated that at least one household member visited a Maryland state park, state forest, or state wildlife area in the prior year. Fifty percent of respondents visited just once in the past year (15 percent) or once every few months (35 percent). In contrast, 37 percent of respondents are more frequent users, with 21 percent having visited about once a month, 13 percent once a week, and 4 percent daily.
- Residents are most likely to visit state parks, forest, wildlife areas, or other outdoor recreational areas in the Central Region (54 percent), which is also where roughly half of Maryland's population lives (using 2010 Census figures). The Eastern Region is the second most-visited (38 percent), which is much higher than the population share that lives in that area (about 7 percent), closely followed by the Western Region (35 percent visited vs. 9 percent of the Maryland population that resides there). Roughly a quarter of respondents visit outdoor recreation areas in the Southern Region (26 percent), which is actually lower than the share of the Maryland population that lives there (about 34 percent).

Figure 23



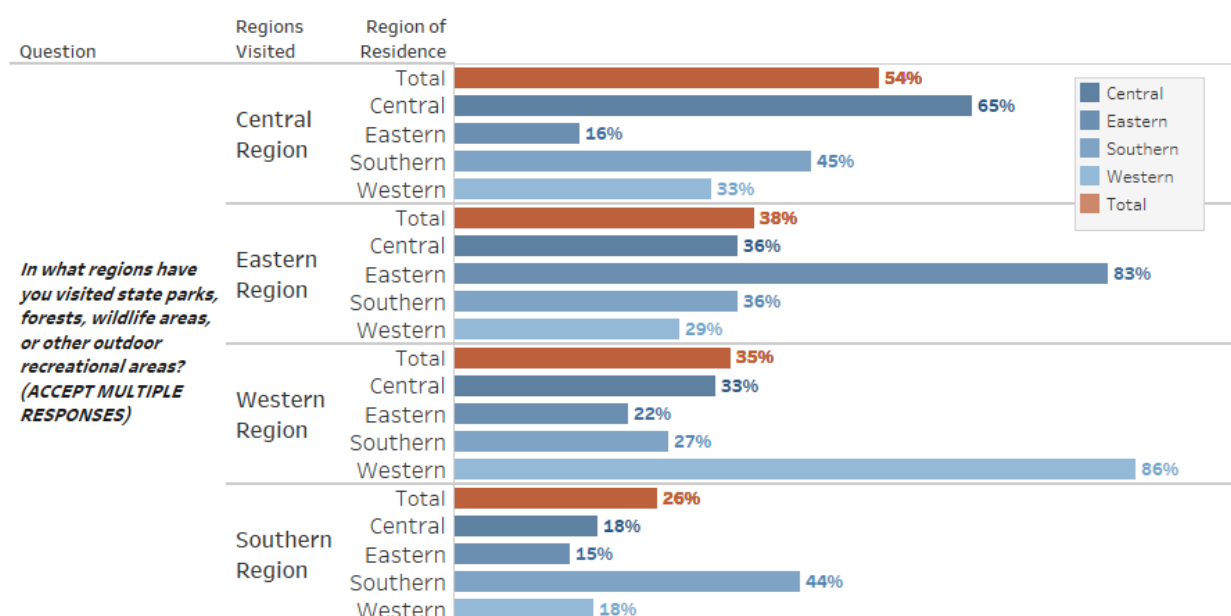
Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- Frequency of visitation did not vary widely by region. However, Western Region residents were slightly more likely to have visited a Maryland outdoor area in the prior year (89 percent vs. 85 to 87 percent in the other regions) and were more likely to have visited at least once a month (43 percent vs. 36 to 37 percent in the other regions).

Figure 24
Maryland Land Preservation and Recreation Plan Survey | Frequency of Visitation - 2018 by Region


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- Respondents tend to visit state parks, forests, or wildlife areas in their home regions at a higher rate than in other regions. Respondents from the Central Region were most likely to have visited an outdoor area in the Central Region (65 percent). This same intra-region trend occurred for residents of the Eastern (83 percent) and Western (86 percent) Regions. However, it should be noted that Southern Region respondents were about as likely to visit state parks, forests, or wildlife areas in the Central Region (45 percent) as in the Southern Region (44 percent).

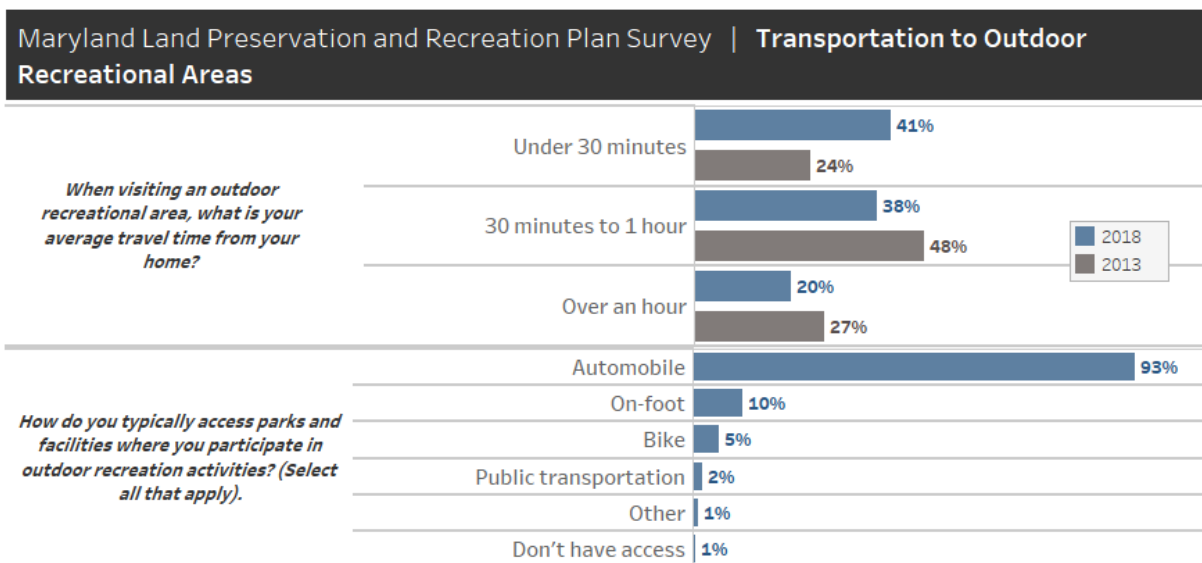
Figure 25
Maryland Land Preservation and Recreation Plan Survey | Regions Visited by Region of Residence


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Travel Time and Mode of Travel

- Average travel time for respondents to visit an outdoor recreational area is most often under one hour (79 percent), with 41 of respondents indicating average travels times of under 30 minutes. Meanwhile, 20 percent of respondents travel an average of over an hour to visit an outdoor recreational area. As compared to 2013, a greater share of respondents indicated traveling under 30 minutes (41 percent vs. 24 percent) –a finding which suggests greater accessibility to outdoor recreational areas and/or greater interest in seeking out recreational areas within closer proximity to home.
- The most common transportation method for accessing parks and facilities in which respondents participate in outdoor recreation activities is automobile, with 93 percent of respondents indicating they typically use this transportation mode. Traveling on-foot comes in a distant second (10 percent), followed by bike (5 percent), public transportation (2 percent), or other modes (1 percent). Only one percent of respondents indicated that they did not have access.

Figure 26

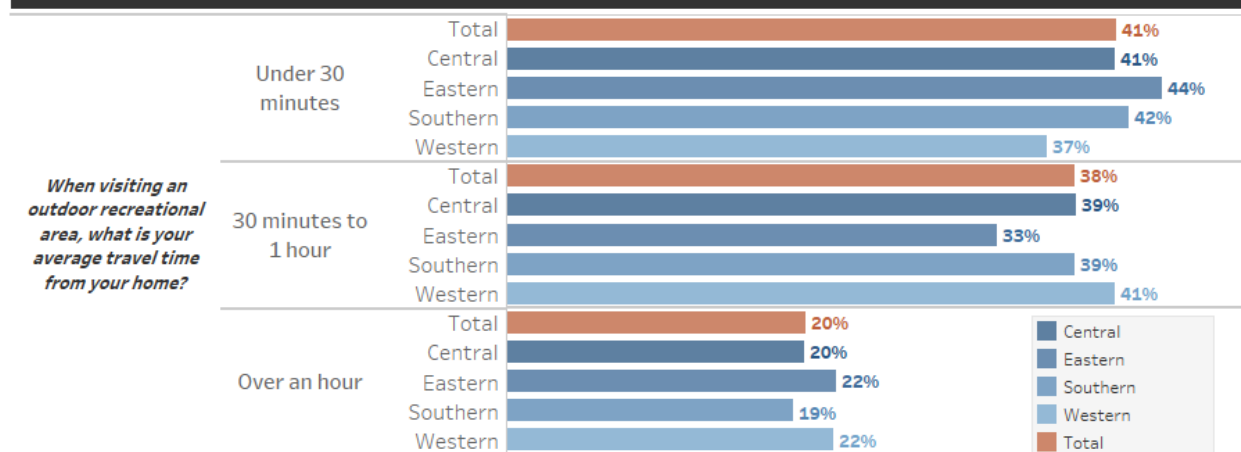


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- Average travel times were generally consistent, regardless of region of residence. However, Eastern Region residents were slightly more likely to indicate shorter average travel times, with 44 percent reporting they travel under 30 minutes, compared to 37 to 41 percent of respondents who reside in the other regions. In contrast, Western Region residents reported slightly longer travel times on average (63 percent report traveling at least 30 minutes, vs. 54 to 59 percent of respondents who reside in the other regions).

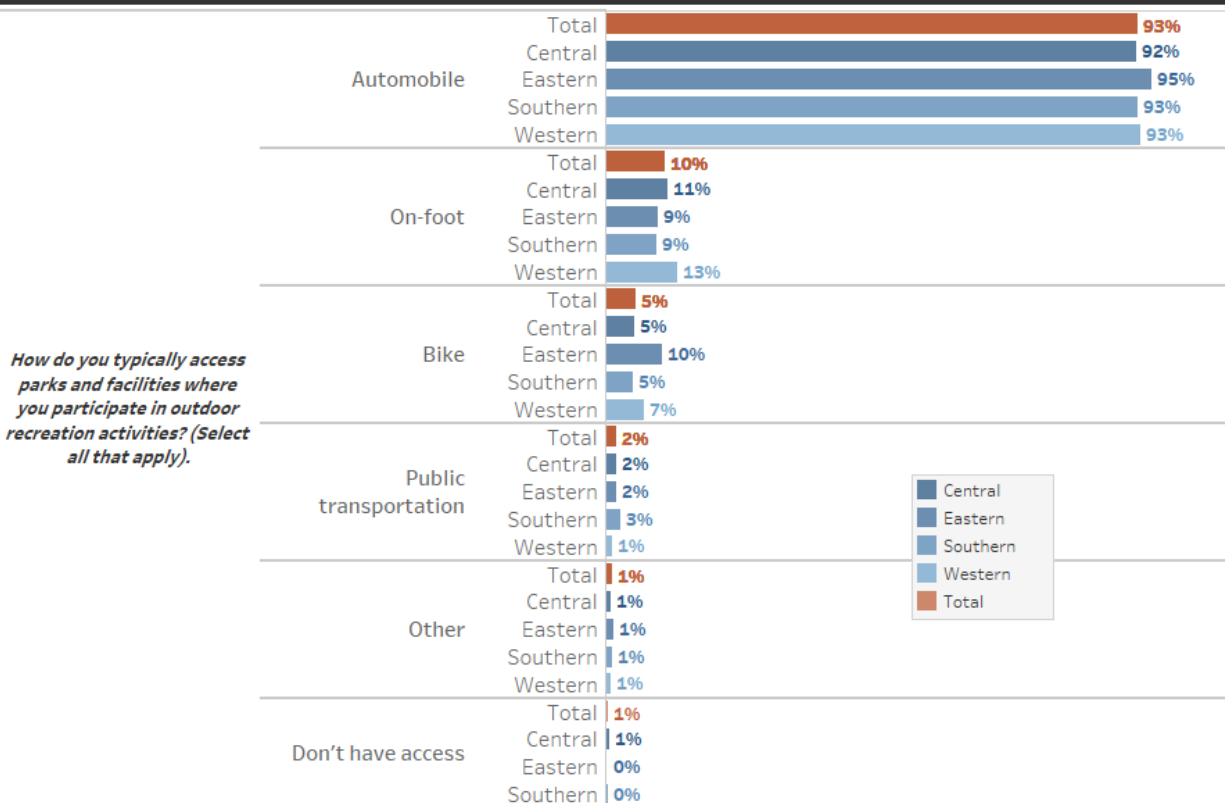
Figure 27

Maryland Land Preservation and Recreation Plan Survey | **Transportation to Outdoor Recreational Areas - 2018 by Region**



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- Regardless of area of residence, respondents were most likely to use automobiles to access parks and facilities where they participate in outdoor recreation activities. Western Region respondents were marginally more likely to travel on-foot (13 percent vs. 9 to 11 percent) and Eastern Region respondents were somewhat more likely to bike to parks and facilities (10 percent vs. 5 to 7 percent).

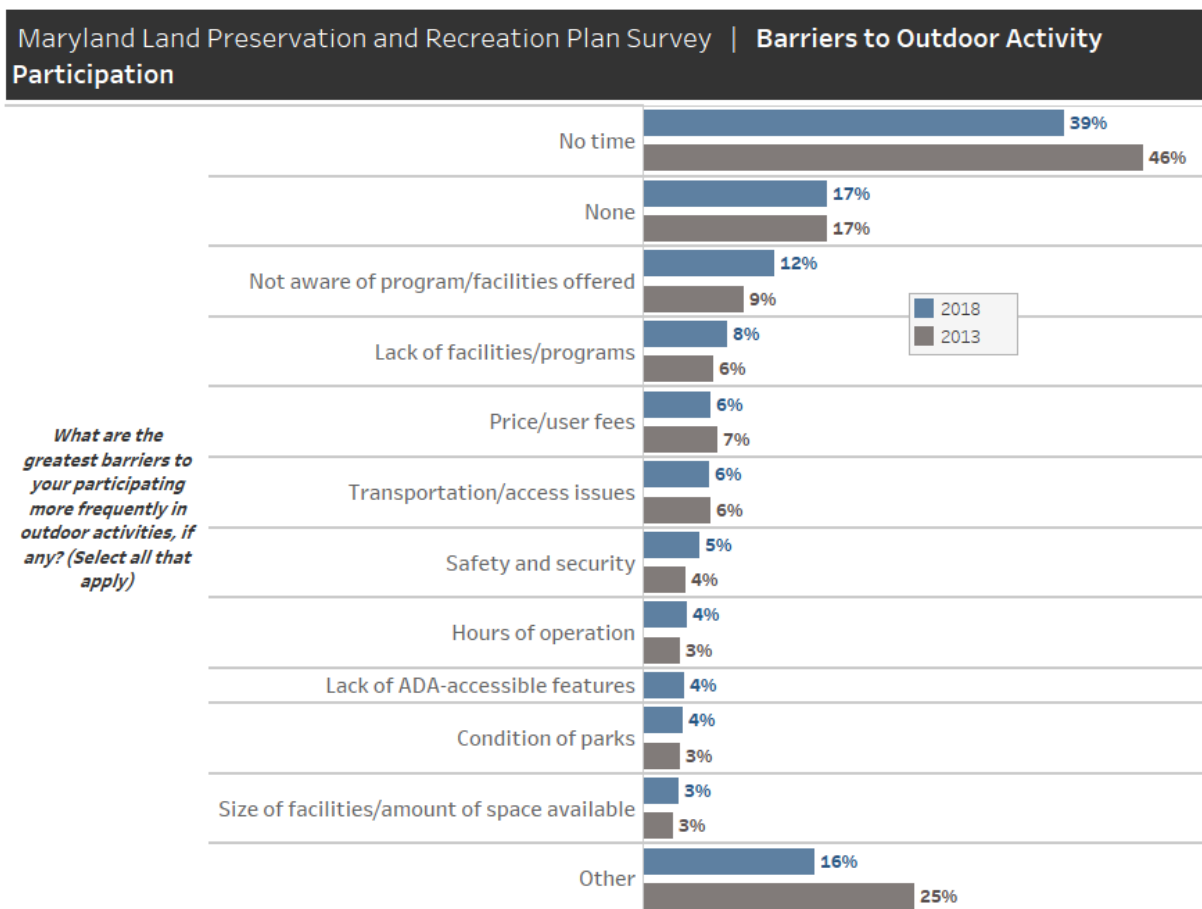
Figure 28**Maryland Land Preservation and Recreation Plan Survey | Transportation Mode - 2018 by Region**

Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Barriers to Participating in Outdoor Recreation

- As was the case in 2013, the most frequently cited reason for not participating more frequently in outdoor recreation was that respondents had “no time” (39 percent, vs. 46 percent in 2013). The second most-identified barrier was not being aware of programs/facilities offered (12 percent), followed by lack of facilities/programs (8 percent), price/user/fees (6 percent), safety and security (5 percent), and a number of less commonly cited reasons. In contrast, 17 percent of respondents indicated that they did not have any barriers to participation (identical to 2013).

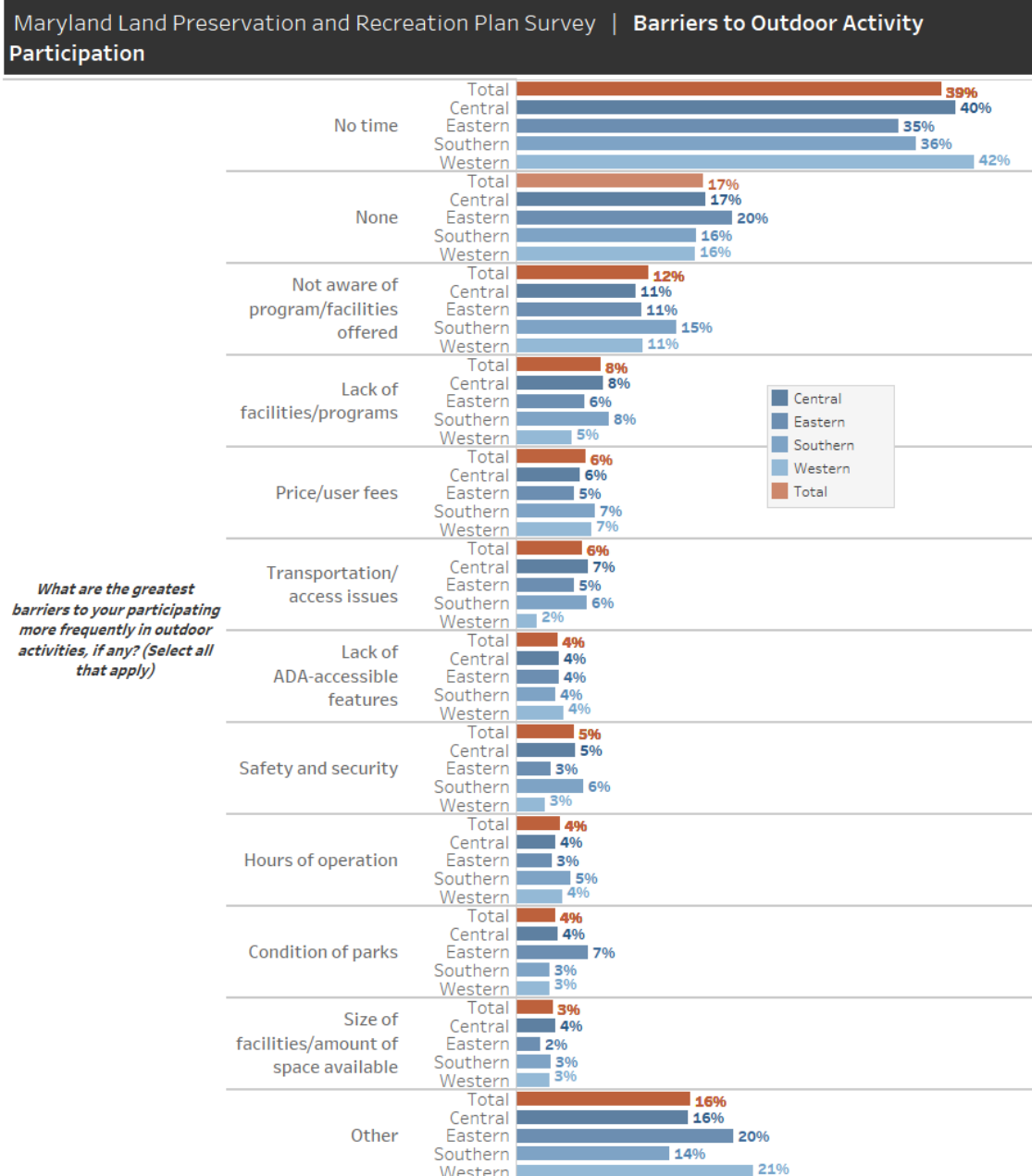
Figure 29



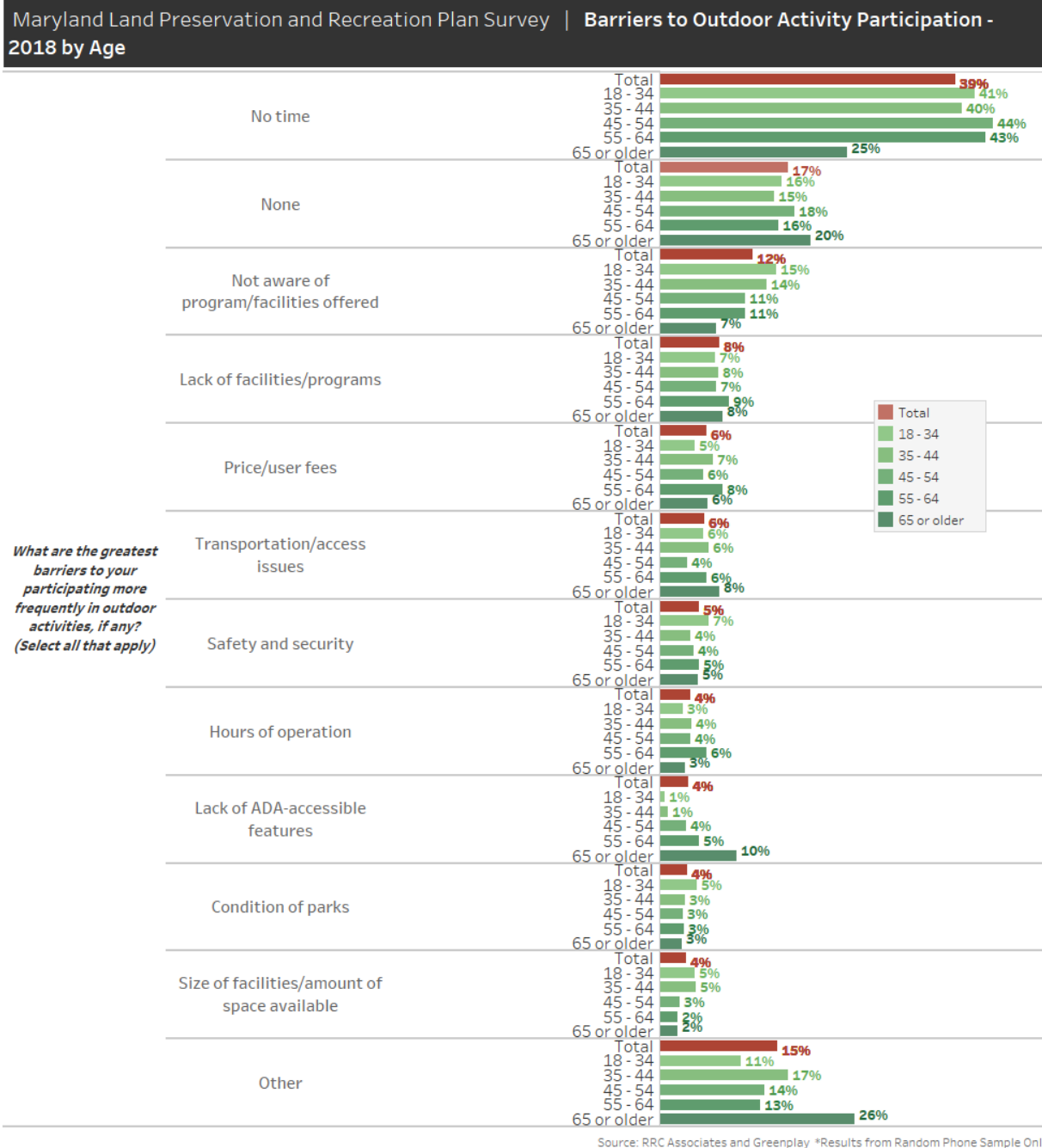
Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- A notable share of respondents noted there are “other” barriers to participation (16 percent, down from 25 percent in 2013). Obstacles mentioned include inclement weather, health concerns/injury, lack of parking, and lack of outdoor amenities near where the respondent lives, among other items. The reader is directed to the comments appendix for the full-set of open-ended comments received.

- There were some slight differences by region regarding barriers to participation. Western Region respondents were the most likely to report not having time (42 percent vs. 35 to 40 percent of other region respondents). Southern Region respondents were more likely to be unaware of programs/facilities offered (15 percent vs. 11 percent) and Southern and Central Region respondents were more likely to cite safety/security as an issue (5 to 6 percent vs. 3 percent). Meanwhile, Eastern Region respondents were more likely to cite condition of parks as an issue (7 percent vs. 3 to 4 percent).

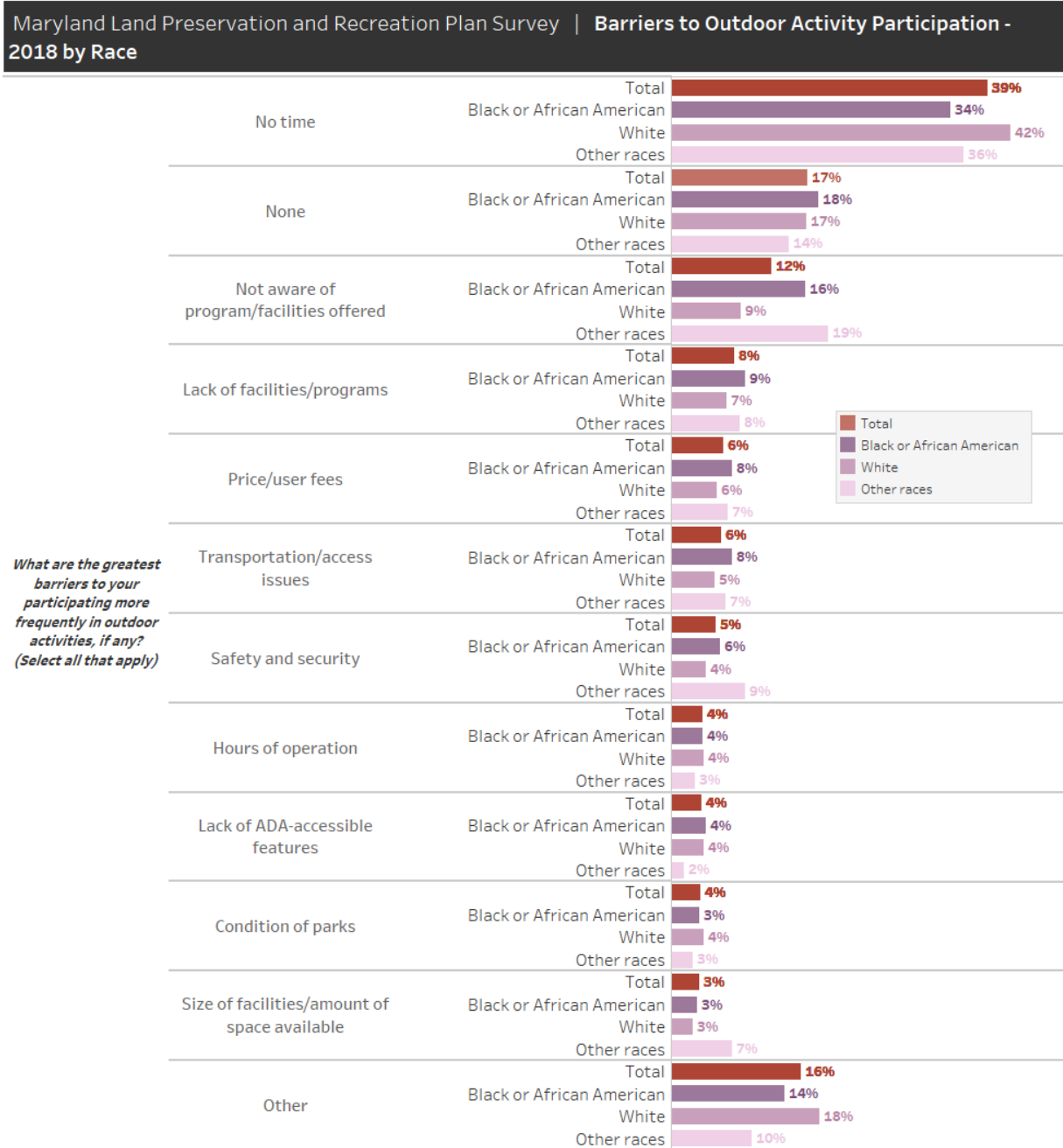
Figure 30

- There were some slight differences by age regarding barriers to participation. Respondents between the ages of 44 and 64 were the most likely to indicate “no time” as a barrier, although it was the top reason cited by respondents regardless of age. Lack of awareness tended to be a bigger obstacle for younger respondents. Meanwhile, respondents aged 65 or older were more than twice as likely as other age cohorts to cite lack of ADA-accessible features as a barrier.

Figure 31

- There were some slight differences by race regarding barriers to participation. Not having time continues to be the major barrier to participation, regardless of respondent race. However, White respondents were the most likely to select “no time” as an obstacle (42 percent). Meanwhile, Black or African American respondents and those of other races were more likely to report that not being aware of programs/facilities offered was a barrier to participation.

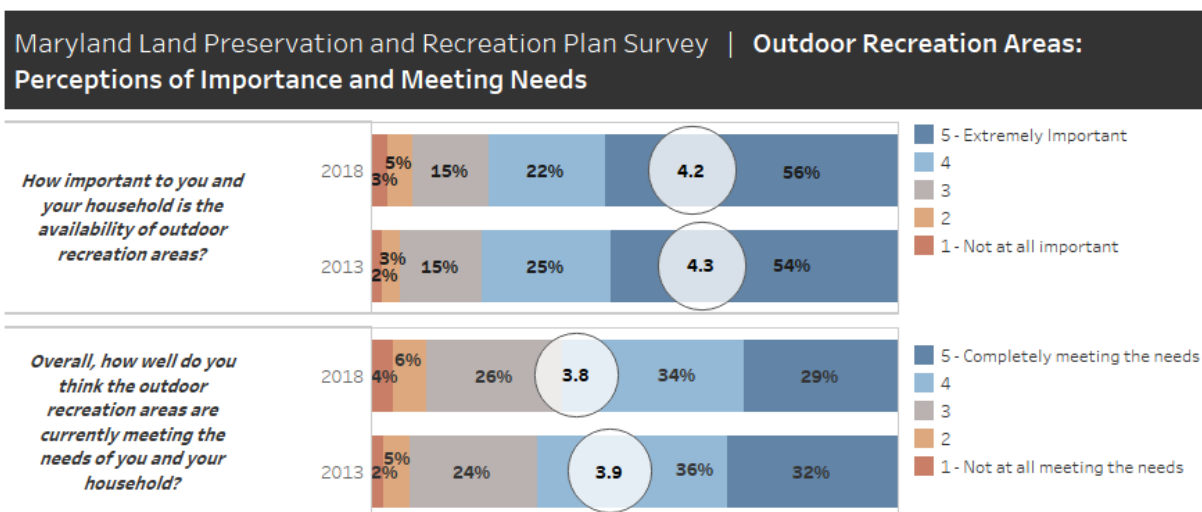
Figure 32



Importance of Outdoor Recreation Areas and Degree to Which Needs Are Met

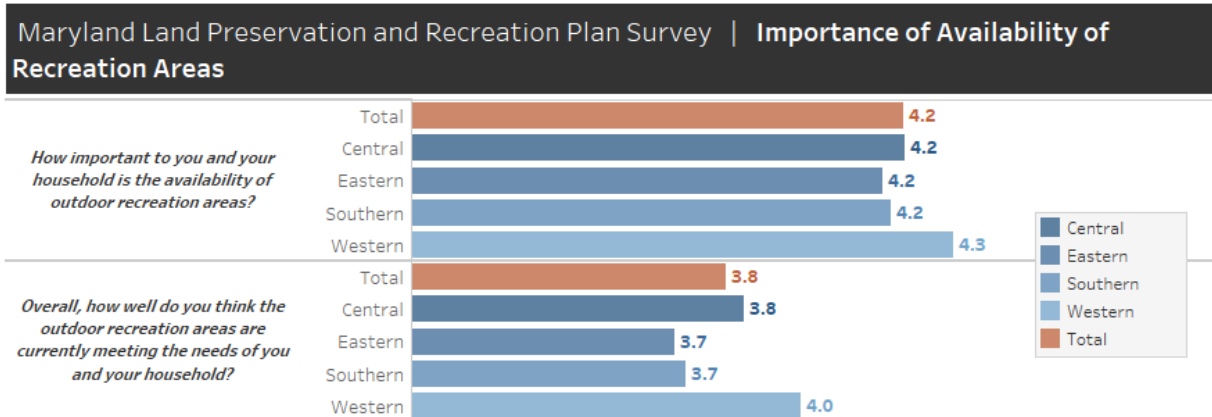
- Over half of all respondents indicated that the availability of outdoor recreation areas is “extremely important” to their household (56 percent provided a rating of “5” on a scale from 1-5). Another 22 percent gave a rating of “4” on the 1-5 scale, for a combined total of 78 percent of respondents indicating that outdoor recreation area availability is important. Only 8 percent of all respondents feel that it is not important (provided a rating of “1” or “2”) and 15 percent provided a rating of “3” indicating more neutral feelings toward recreation area availability. The overall average rating was a 4.2. Responses were very similar to 2013, when 79 percent of respondents indicated that outdoor recreation availability was important and provided an average rating of 4.3.
- In a related question, respondents were asked how well outdoor recreation areas are currently meeting their households’ needs. Twenty-nine percent of respondents said their needs were “completely” being met (provided a rating of “5” on a scale from 1-5). Another 34 percent gave a rating of “4,” for a combined total of 64 percent of respondents indicating that their households’ needs are currently being met. Ten percent of respondents indicated that their needs are not being met (gave a rating of “1” or “2”) and 26 percent provided a rating of “3.” These results highlight a marginal decline in needs being met from 2013, when 69 percent of respondents indicated their needs were being met (gave a rating of “4” or “5”) and provided an average rating of 3.9 (vs. 3.8 in 2018).

Figure 33



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- Western Region residents are more likely to indicate that outdoor recreation availability is important (average rating 4.3) and that their households' needs are being met (4.0) than residents from other regions. Meanwhile, Eastern and Southern Region residents provided slightly lower needs-met ratings (3.7 each).

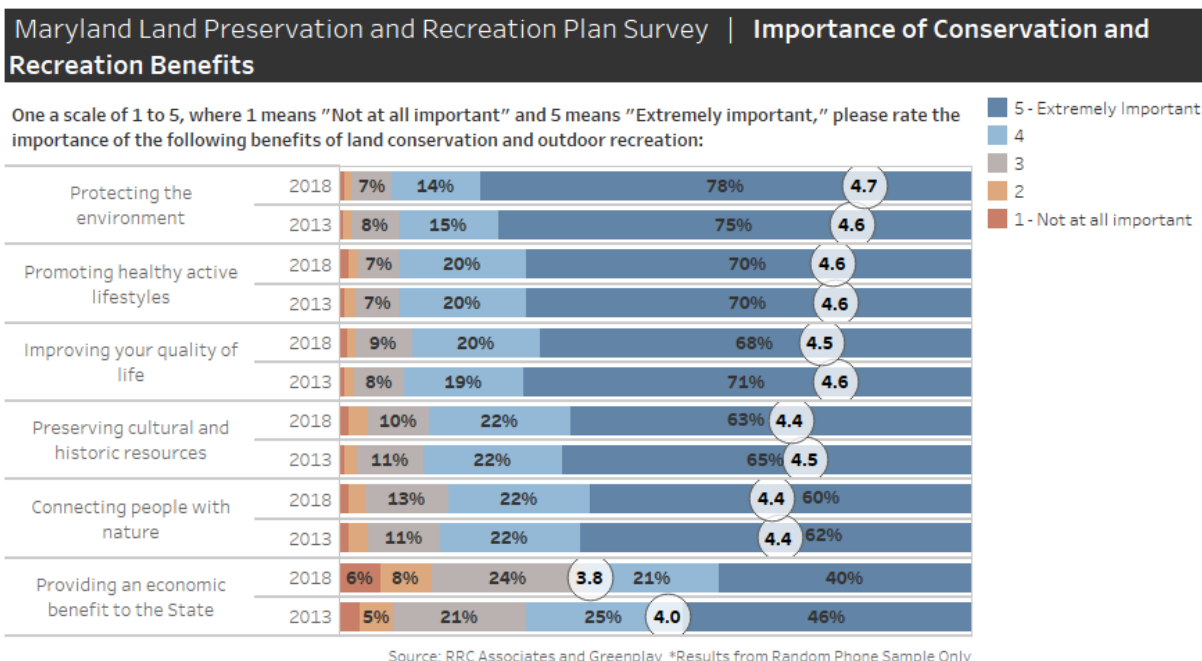
Figure 34

Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

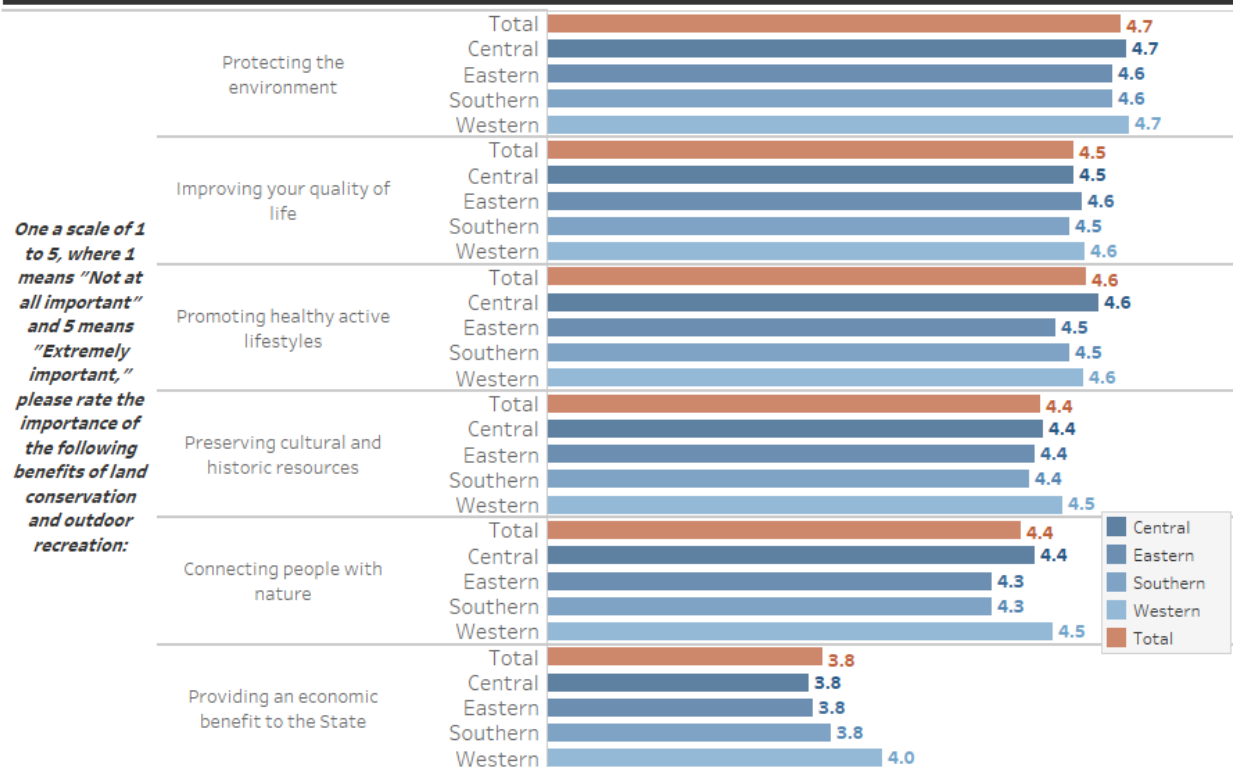
Benefits of Land Conservation and Outdoor Recreation

- At least four in five respondents (over 80 percent) rate the following benefits of land conservation and outdoor recreation important (in descending order): protecting the environment (92 percent, with an average rating of 4.7), promoting healthy active lifestyles (90 percent, 4.6), improving your quality of life (88 percent, 4.5), preserving cultural and historic resources (85 percent, 4.4), and connecting people with nature (82 percent, 4.4). The attribute of “providing an economic benefit to the State” is viewed as being the least important of the benefits (61 percent, 3.8). Results are highly similar to 2013, although providing economic benefit is considered to be even less important and protecting the environment was rated as slightly more important this year.

Figure 35



- The average ratings for the various benefits of land conservation and outdoor recreation did not vary much when broken out by region. However, it is worth noting that Western Region respondents provided consistently higher average importance ratings, particularly for providing an economic benefit to the state (4.0 vs. 3.8 among respondents from the other regions).

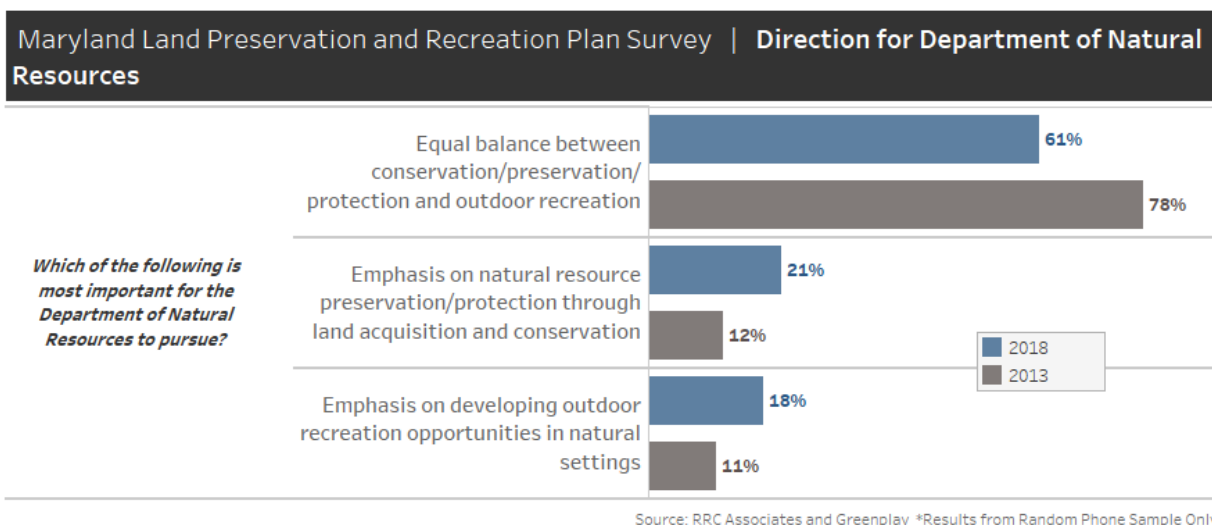
Figure 36
Maryland Land Preservation and Recreation Plan Survey | Average Importance Ratings, 2018 by Region


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Emphasis of the DNR

- Most respondents (61 percent) feel that the DNR should pursue an equal balance between conservation/preservation/protection and providing outdoor recreation in natural settings. The remaining respondents are split between the two directions (21 percent emphasis on conservation/preservation/protection and 18 percent on developing outdoor recreation). As compared to 2013, more respondents lean toward either conservation/preservation/protection or developing recreation opportunities.

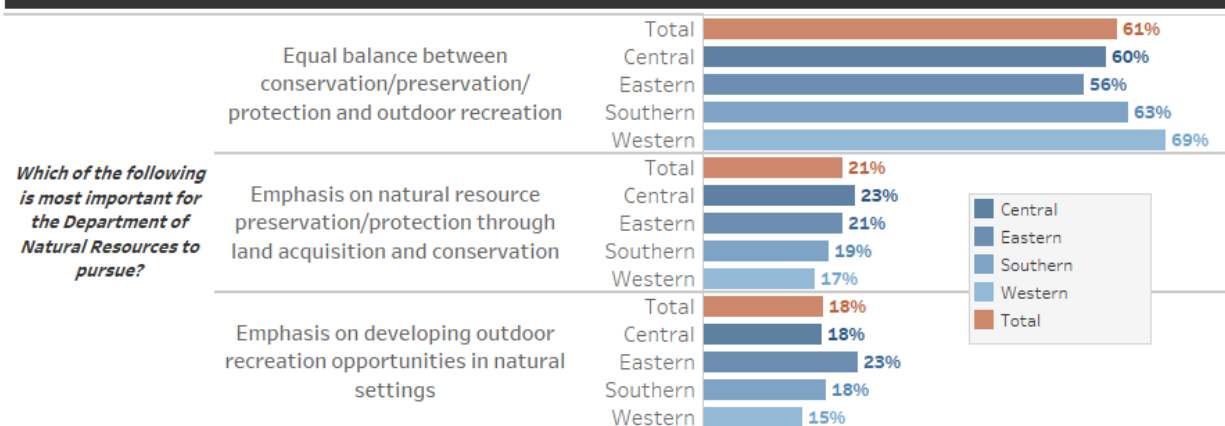
Figure 37



- Although most respondents from each region still prefer a balanced approach, some differences did emerge. Western Region respondents were most in favor of a balanced approach (69 percent). Central Region respondents were most in favor of an emphasis on natural resource preservation/protection (23 percent) and Eastern Region respondents were most in favor of an emphasis toward developing outdoor recreation (23 percent).

Figure 38

Maryland Land Preservation and Recreation Plan Survey | Direction for Department of Natural Resources - 2018 by Region



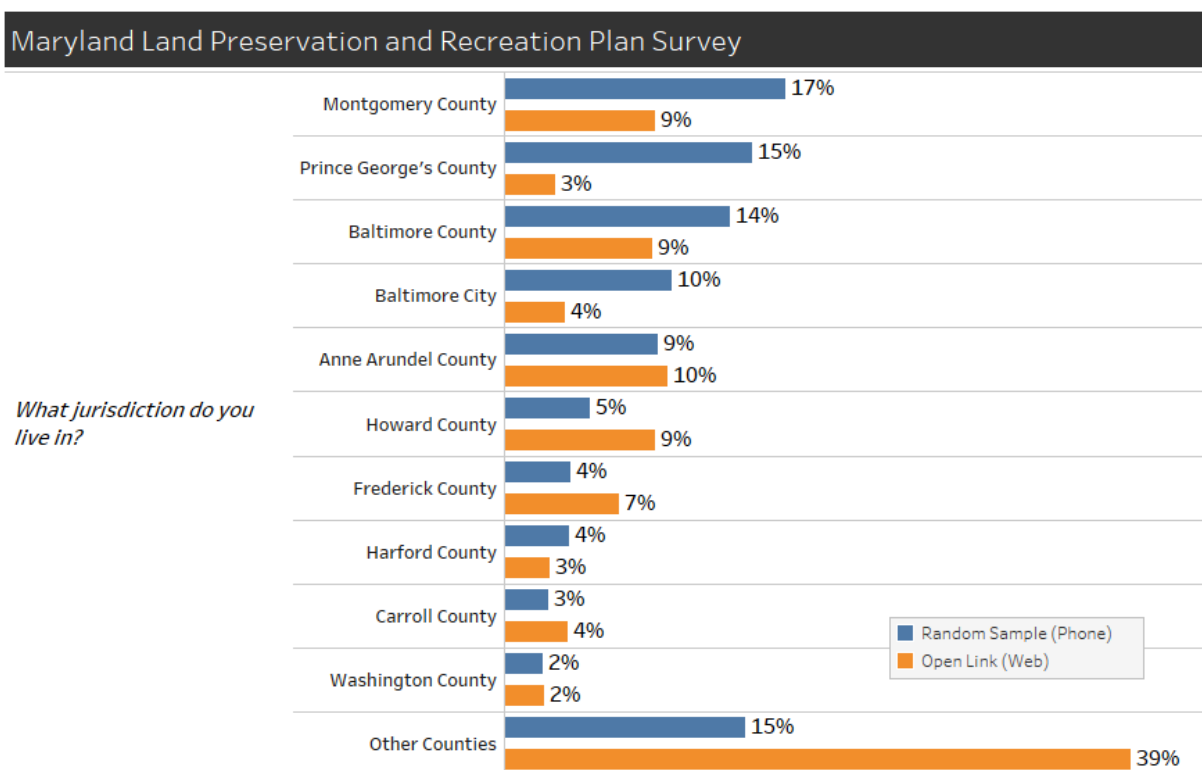
Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

ONLINE OPEN LINK SURVEY RESULTS

As mentioned in the introduction, the responses to the online open link version of the survey are “self-selected” and thus not included in the above analysis. The survey received 2,407 responses. The highlights of this research are provided below:

- Overall, the open link survey respondents are avid outdoor recreational enthusiasts. As such, they are prevalent users of the state parks, forests, and wildlife areas managed by the DNR.
- Nearly all respondents to the open link survey believe that the availability of outdoor recreation areas is important (94 percent). However, only 7 percent of the open link respondents feel that outdoor recreation areas are completely meeting the needs of their household.
- Open link respondents’ three most prioritized areas for addition or improvement include trail-based recreation, nature/wildlife related recreation, and water recreation. Trail-based recreation is the number one area identified by both the random phone and online open link samples.
- Similar to phone survey respondents, open link respondents were most in favor of the DNR taking a balanced approach to developing outdoor recreation opportunities and natural resource preservation/protection (56 percent). However, open link respondents were more likely to favor an emphasis toward natural resource preservation/protection (30 percent) than one toward outdoor recreation in a natural setting (14 percent).
- Open link respondents were most likely to indicate that the current fees charged directly to them by the DNR are acceptable for the value received (67 percent).

- As mentioned earlier in the report, phone survey respondents' county of residence was proportionate to the share of Maryland population actually living in that county. In contrast, the online open link survey was open to the public, and therefore some of the less populated counties in the state were more represented in the open link results. Open link respondents were most likely to be from Anne Arundel (10 percent), Montgomery (9 percent), Baltimore (9 percent), or Howard (9 percent) Counties. They were also much more likely to be from the 14 least populated counties (39 percent vs. 15 percent of phone survey respondents).

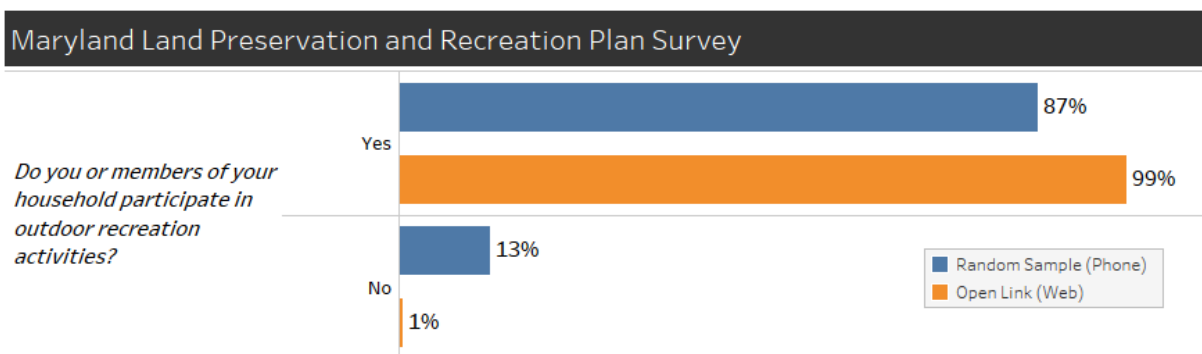
Figure 39

Source: RRC Associates and Greenplay

Outdoor Recreation Participation

- As seen in the figure below, nearly all of the respondents to the open link survey indicate that a member of their household participates in outdoor recreation (99 percent, vs. 87 percent of random sample phone survey respondents).

Figure 40



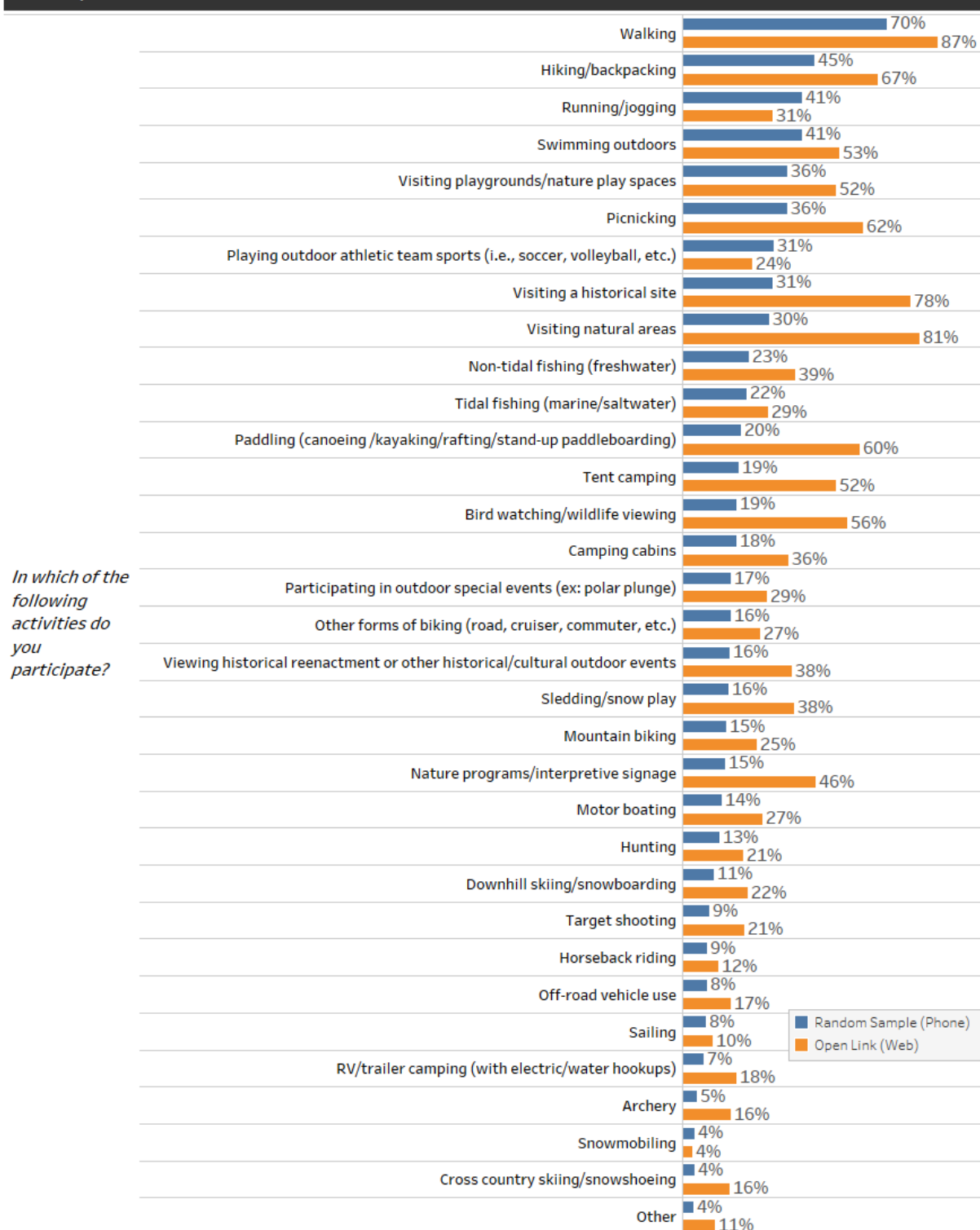
Source: RRC Associates and Greenplay

Outdoor Recreation Activities

- Open link respondents were more likely than phone survey respondents to participate in each of the recreation activities probed in the survey (with the exception of running/jogging, playing outdoor athletic team sports, and snowmobiling). In particular, they are most likely to participate in walking (87 percent), visiting natural areas (81 percent), and visiting a historical site (78 percent).
- On average, open link respondents participate in nearly twice as many activities as phone survey respondents (12.1 vs. 6.7). Furthermore, they were much more likely to participate in each of the following activities than phone survey respondents: visiting natural areas, visiting a historical site, paddling (e.g., canoeing, kayaking), birdwatching/wildlife viewing, tenting camping, nature programs/interpretive signage, picnicking, sledding/snow play, hiking/backpacking, and viewing historical reenactment or other historical/cultural outdoor events.

Figure 41

Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation

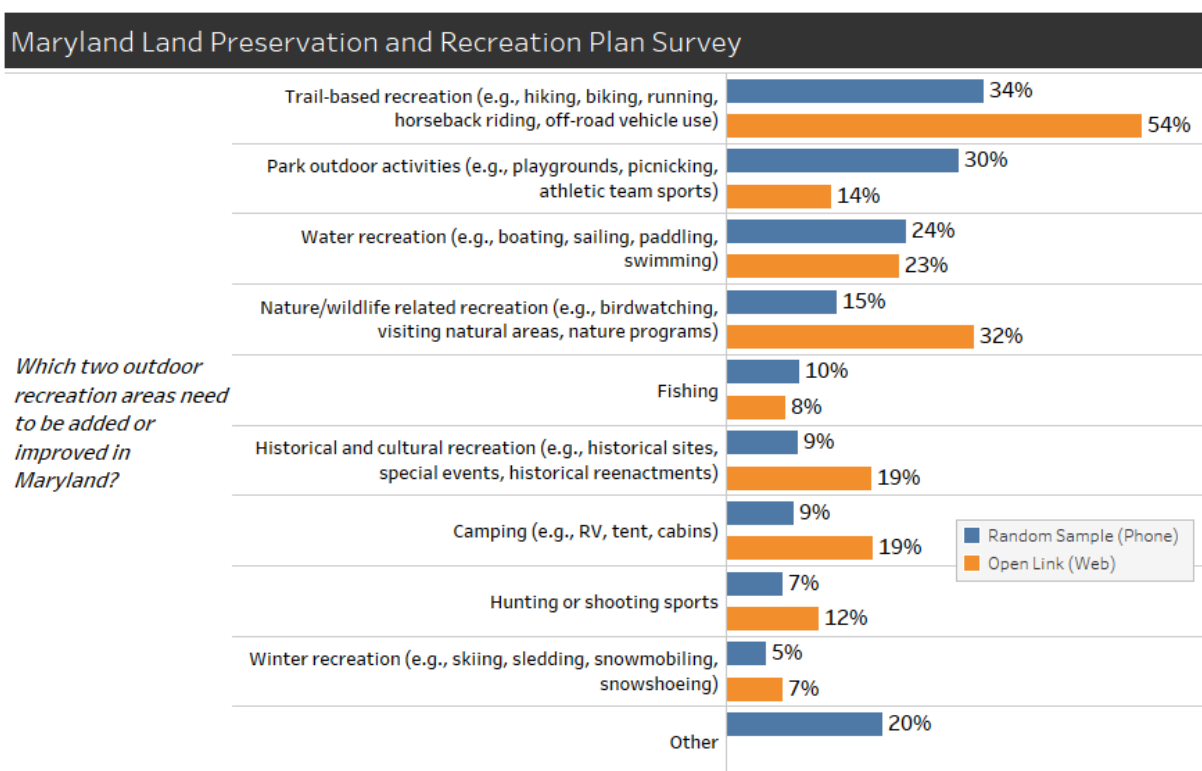


Source: RRC Associates and Greenplay

Top Two Recreation Areas to Be Added or Improved

- More than half of open link survey respondents indicated that trail-based recreation is a first or second priority for additions/improvements (54 percent). The next most important outdoor recreation area is nature/wildlife related recreation, selected as a top or second priority by 32 percent of open link respondents. Water recreation rounds out the top three (23 percent).
- Differences between the two samples include random sample respondents being more likely to prioritize park outdoor activities (30 percent vs. 14 percent) and open link respondents being more likely to prioritize nature/wildlife related recreation (32 percent vs. 15 percent), historical and cultural recreation (19 percent vs. 9 percent), and camping (19 percent vs. 9 percent).

Figure 42



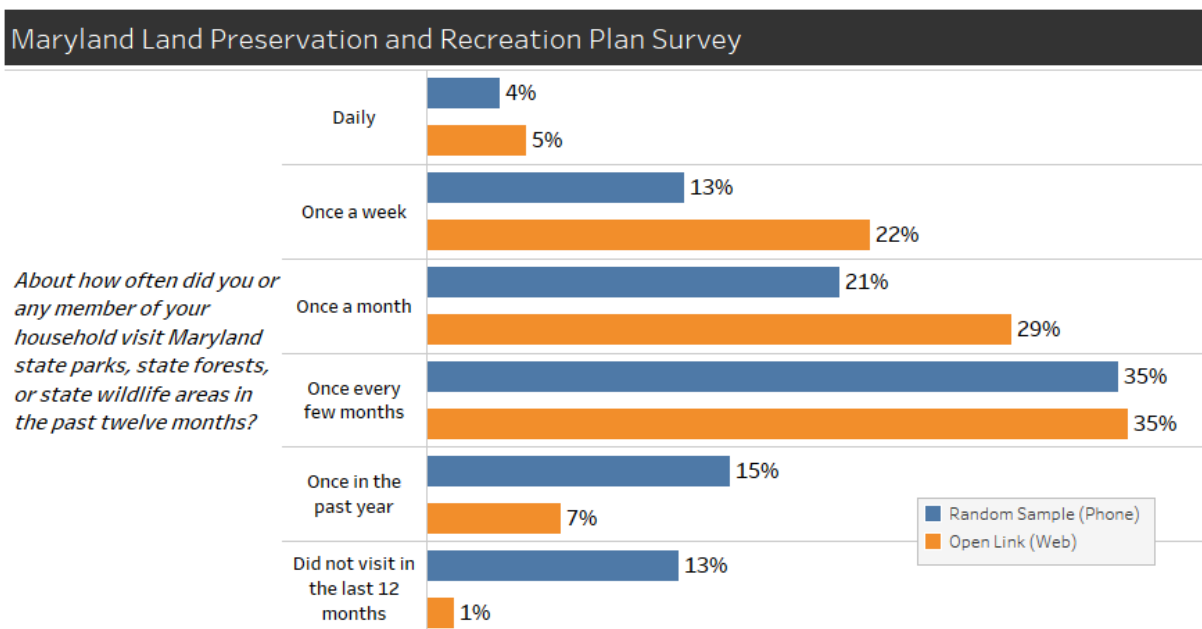
Source: RRC Associates and Greenplay

Note: The open link web survey did not contain an "other" option, whereas the random sample phone survey did. As such, results are not directly comparable.

Outdoor Recreation Participation Frequency and Location of Participation

- Nearly all open link respondents have visited a Maryland state park, forest, or wildlife area in the past 12 months (99 percent, vs. 87 percent of phone survey respondents). Fifty-six percent of open link respondents visit these areas at least once a month, as compared to 38 percent of phone survey respondents.

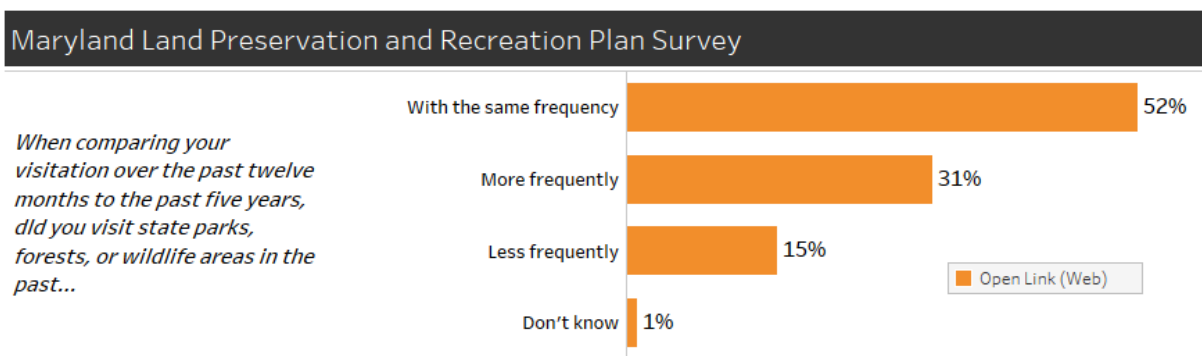
Figure 43



Source: RRC Associates and Greenplay

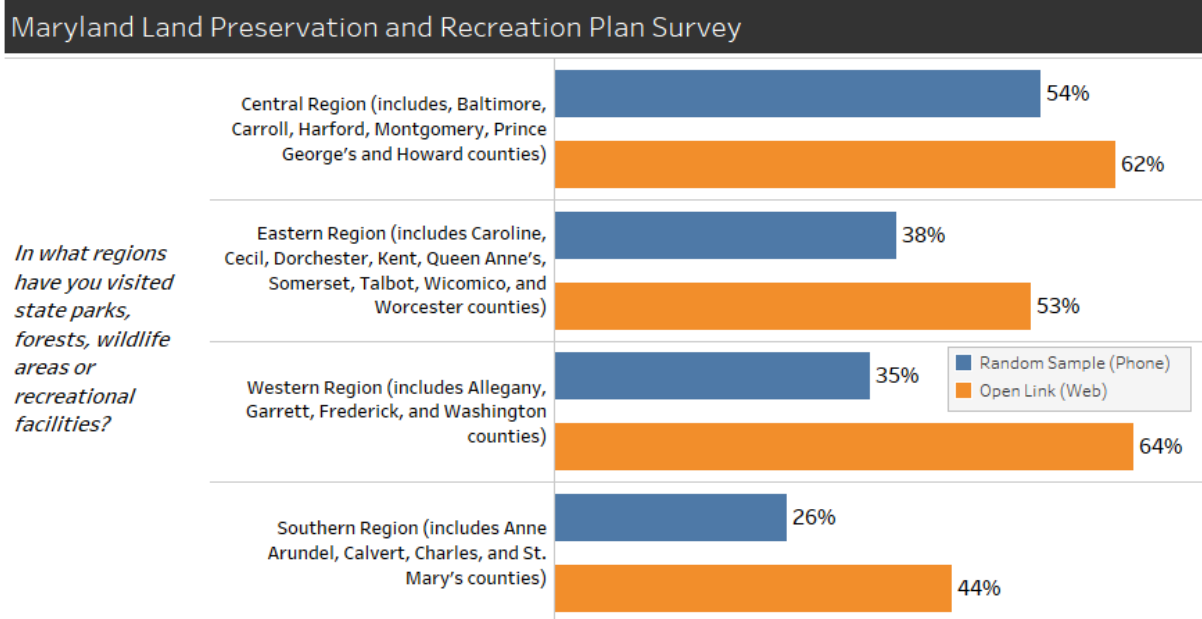
- Online survey respondents were asked to what extent their visitation of state outdoor recreation areas has changed over the past five years. Roughly half have visited with the same frequency (52 percent), 31 percent more frequently, and 15 percent less frequently.

Figure 44



Source: RRC Associates and Greenplay

- Open link respondents were about as likely to visit state parks, forest, wildlife areas or recreational facilities in the Western (64 percent) and Central Regions (62 percent). They were more likely to visit each of the regions than phone survey respondents, and were particularly more likely to visit the Western Region (64 percent vs. 35 percent).

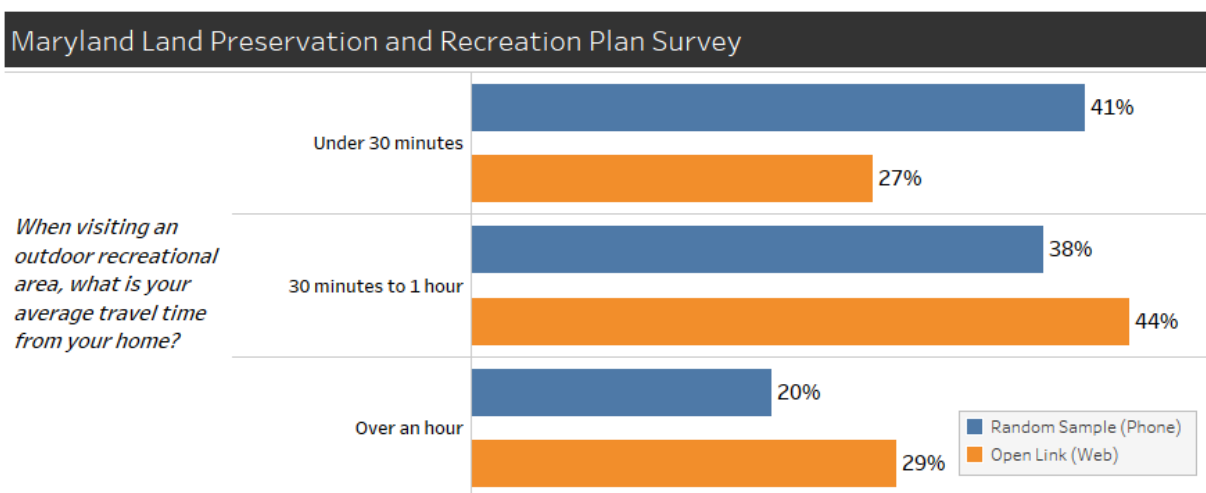
Figure 45

Source: RRC Associates and Greenplay

Travel Time

- Open link respondents are more likely (and perhaps more willing) to travel longer distances when visiting an outdoor recreational area. Seventy-three percent travel over 30 minutes, on average, as compared to 58 percent of phone survey respondents.

Figure 46

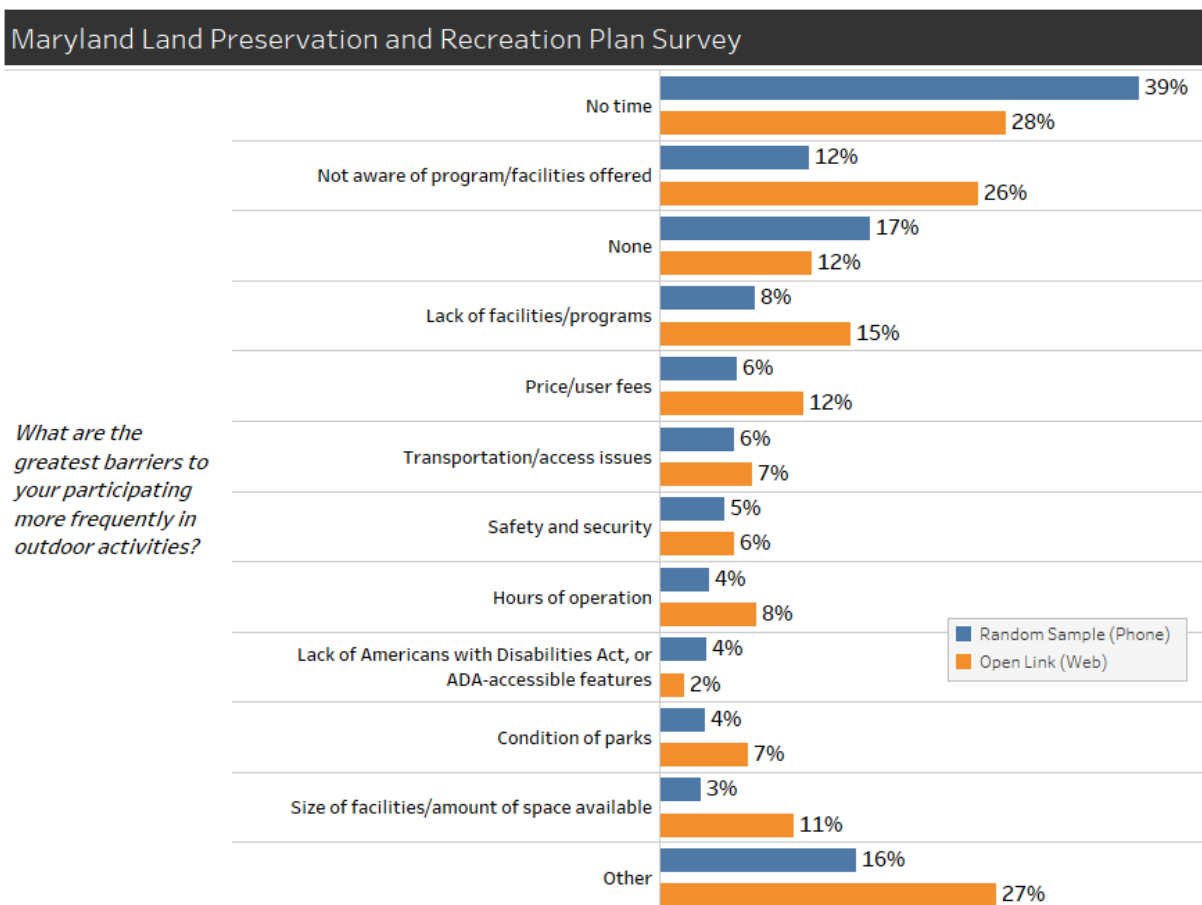


Source: RRC Associates and Greenplay

Barriers to Participating in Outdoor Recreation

- As seen below, the most common barriers among open link responders to participating more frequently in outdoor recreation include: no time/other personal issues (28 percent), not being aware of program/facilities offered (26 percent), lack of facilities/programs (15 percent), and price/users fees (12 percent). Twelve percent of open link respondents reported no barriers to participation.

Figure 47

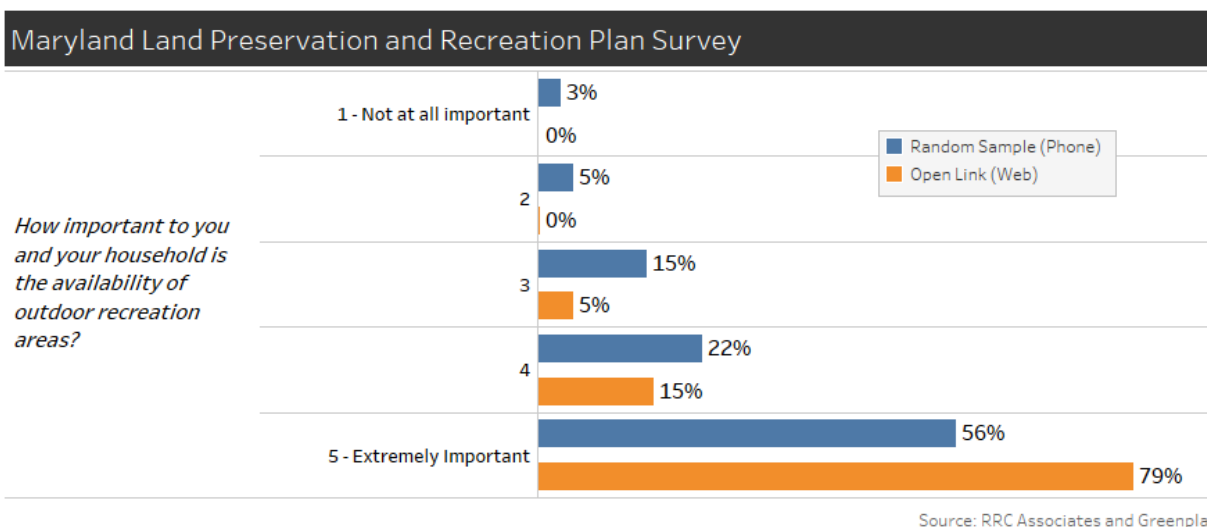


Source: RRC Associates and Greenplay

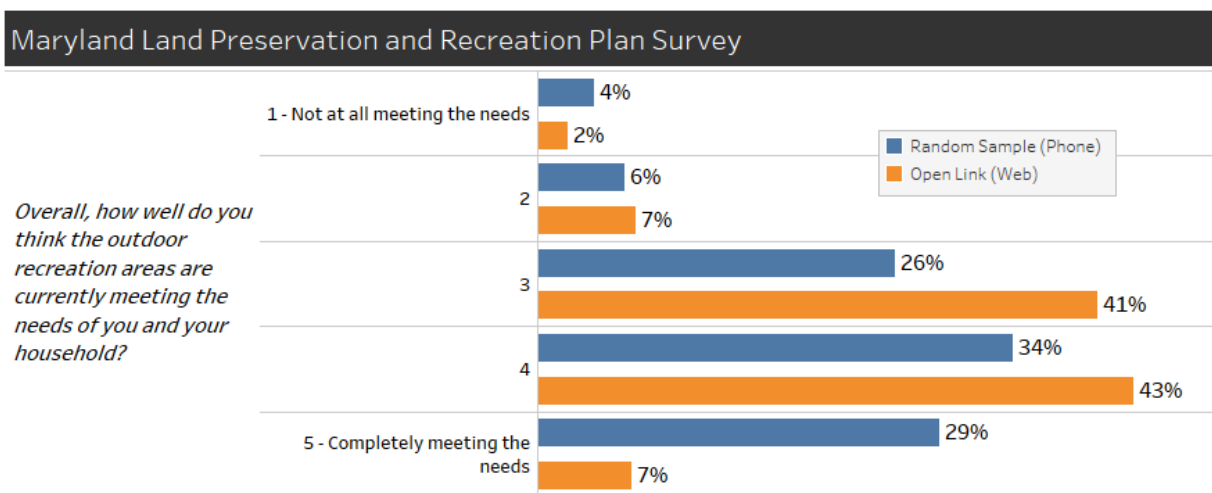
Importance of Outdoor Recreation Areas and Degree to Which Needs Are Met

- More than three-quarters of all open link respondents indicated that the availability of outdoor recreation areas is “extremely important” to their household (79 percent provided a rating of “5” on a scale from 1-5). Another 15 percent gave a rating of “4” on the 1-5 scale, for a combined total of 94 percent of open link respondents indicating that outdoor recreation area availability is important (vs. 78 percent of random sample phone survey respondents).
- Open link respondents provided an overall average importance rating of 4.7 (compared to 4.2 among phone survey respondents).

Figure 48



- In a related question, respondents were asked how well outdoor recreation areas are currently meeting their households' needs. Seven percent of open link respondents said their needs were "completely" being met (provided a rating of "5" on a scale from 1-5). Another 43 percent gave a rating of "4," for a combined total of 50 percent of open link respondents indicating that their households' needs are currently being met (vs. 63 percent of phone survey respondents).
- Nine percent of open link respondents indicated that their needs are not being met (gave a rating of "1" or "2") and 41 percent provided a rating of "3." Overall, results highlight that these more engaged open link respondents are more likely to report that their households' needs are not currently being met.
- Open link respondents provided an overall average needs-met rating of 3.5 (compared to 3.8 among phone survey respondents).

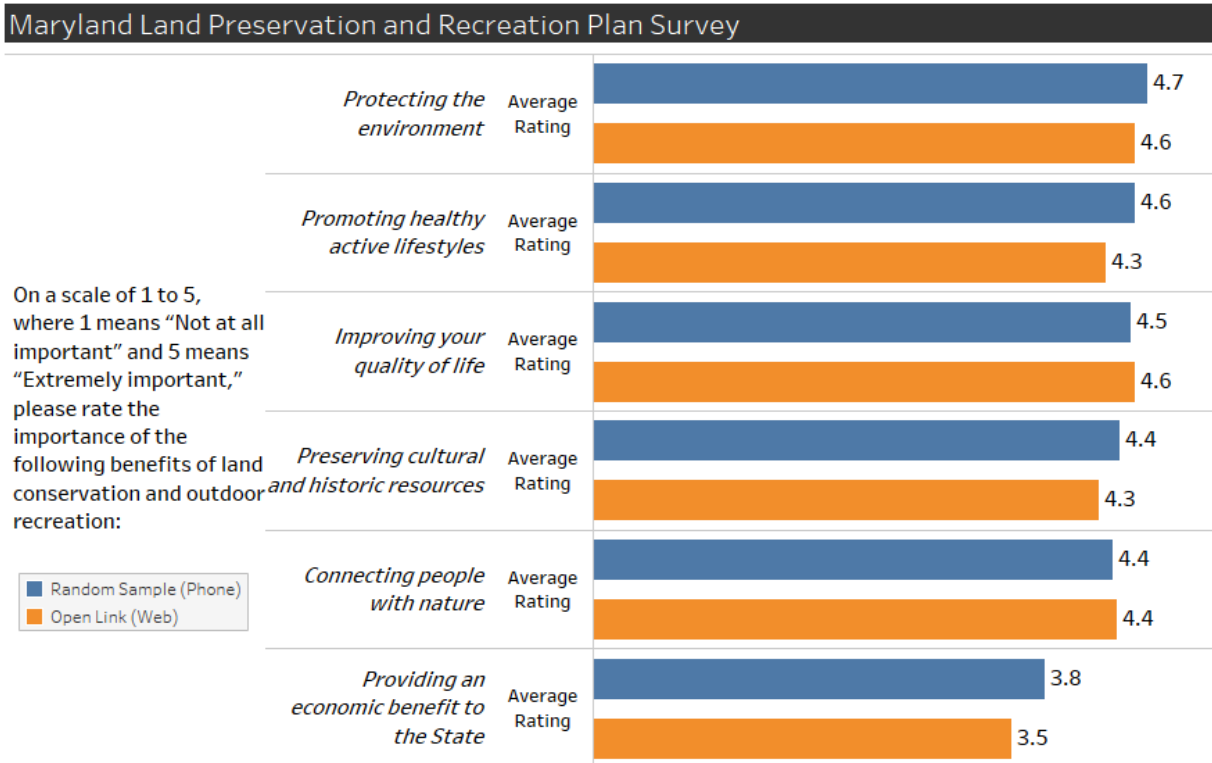
Figure 49

Source: RRC Associates and Greenplay

Benefits of Land Conservation and Outdoor Recreation

- Open link respondents were most likely to identify protecting the environment and improving your quality of life as the two most important benefits of land conservation and outdoor recreation (each receiving an average rating of 4.6). Random sample respondents were more likely than open link respondents to rate promoting healthy active lifestyles (4.6 vs. 4.3) and providing an economic benefit to the state (3.8 vs. 3.5) as important benefits.

Figure 50

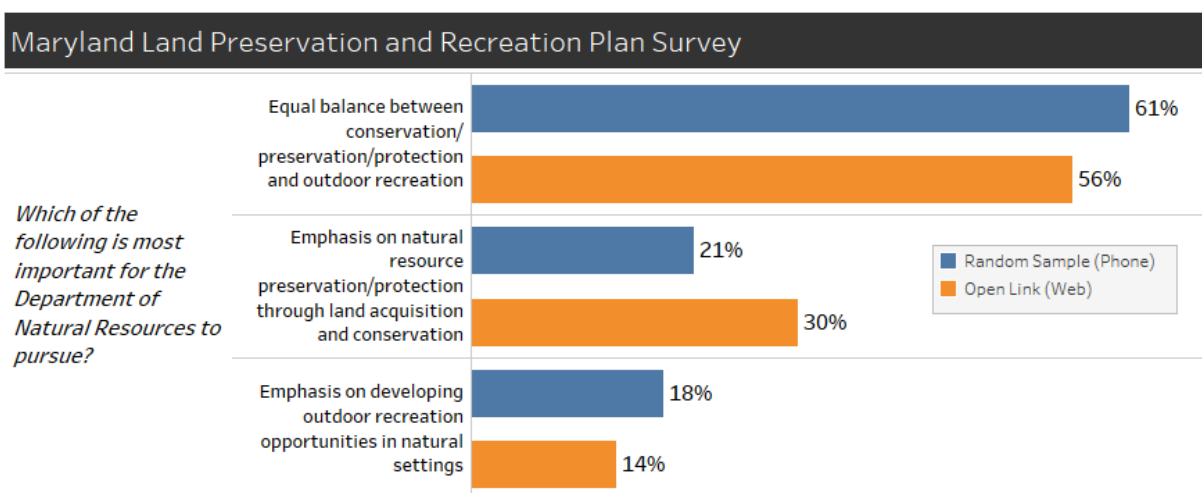


Source: RRC Associates and Greenplay

Emphasis of the DNR

- Most open link respondents (56 percent) feel that the DNR should pursue an equal balance between conservation/ preservation/protection and developing outdoor recreation opportunities in natural settings. The remaining respondents gravitate toward either on emphasis on preservation/protection (30 percent) or on developing outdoor recreation (14 percent). As compared to phone survey respondents, open link respondents were more in favor of an emphasis toward natural resource preservation/protection through land acquisition and conservation (30 percent vs. 21 percent).

Figure 51

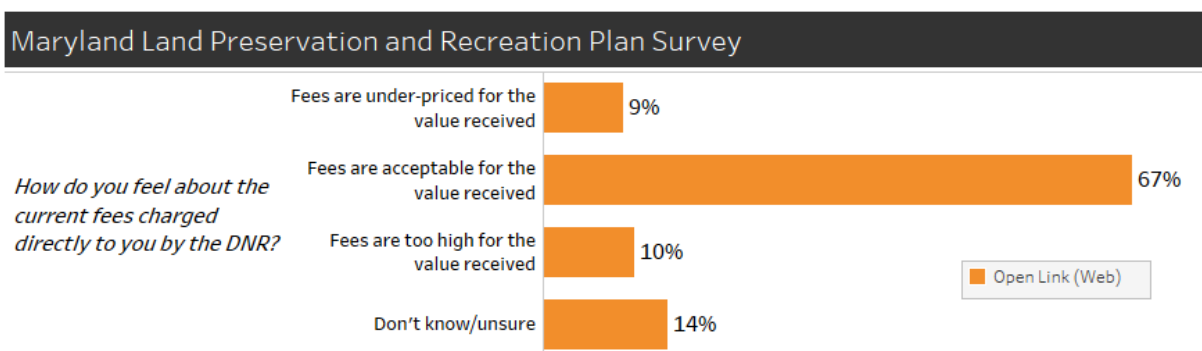


Source: RRC Associates and Greenplay

Fees Charged by the DNR

- Roughly two-thirds of open link respondents consider fees to be acceptable for the value received (67 percent). About equal shares cite they are underpriced (9 percent) or too high (10 percent) for the value received and 14 percent are unsure.

Figure 52

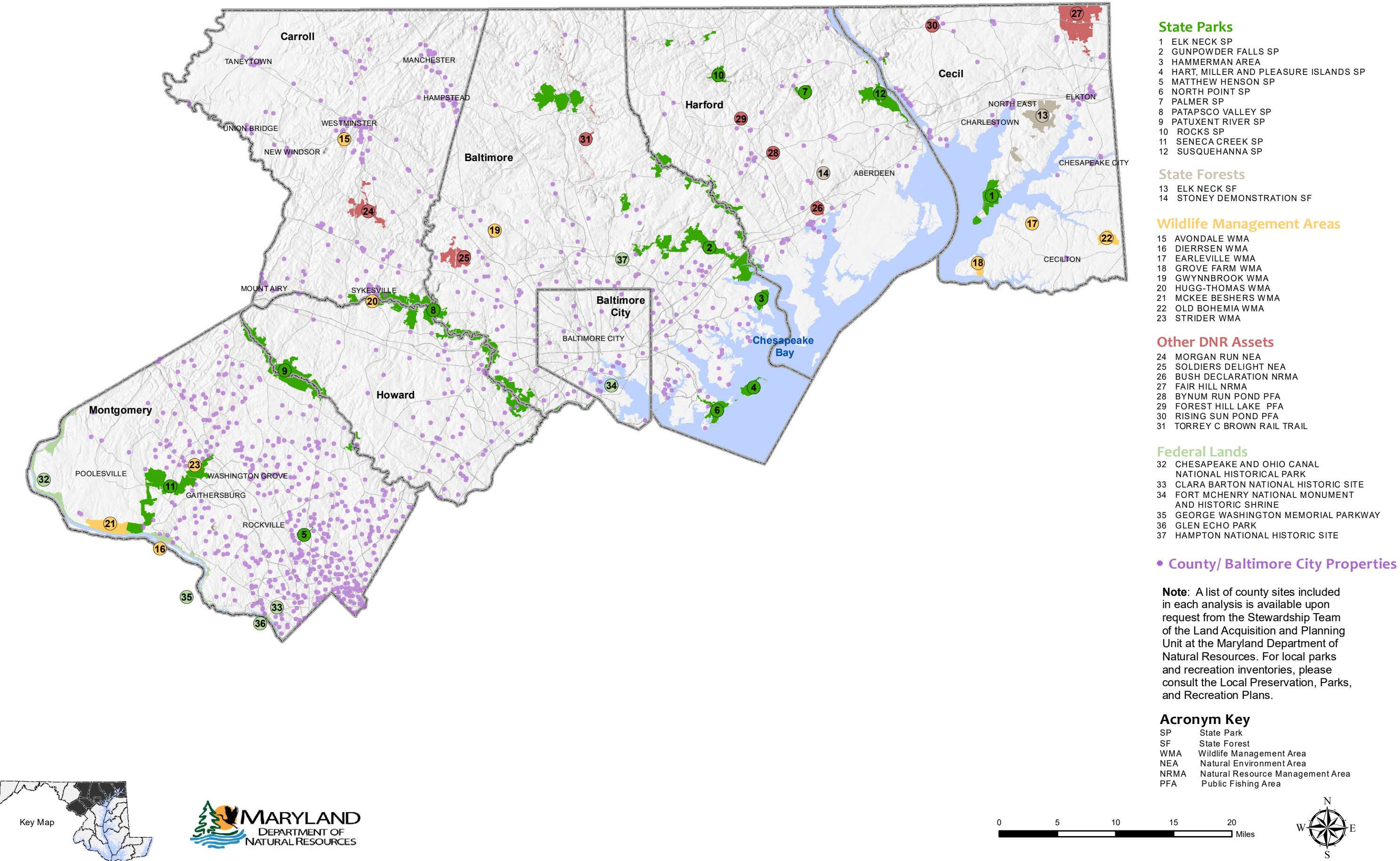


Source: RRC Associates and Greenplay

APPENDIX C: INVENTORY MAPS

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Map 1: Central Region Inventory



Map 2: Eastern Region Inventory

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JANES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLVILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

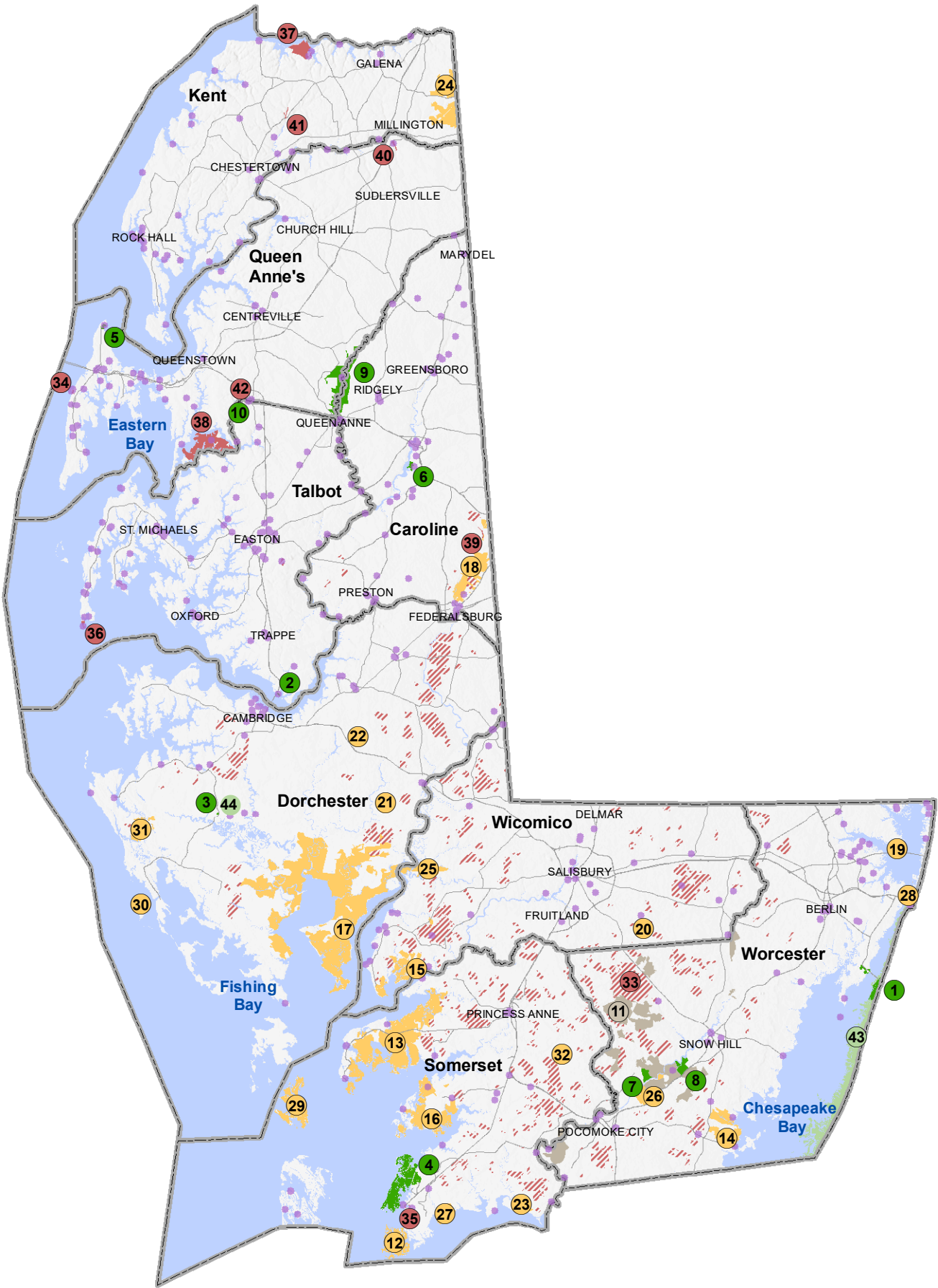
- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

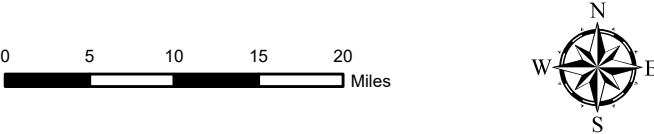
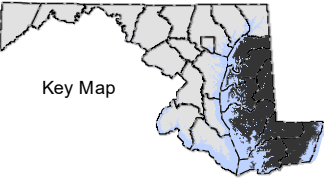
County Properties



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

SP	State Park
SF	State Forest
WMA	Wildlife Management Area
NEA	Natural Environment Area
NRMA	Natural Resource Management Area
PFA	Public Fishing Area



Map 3: Southern Region Inventory

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

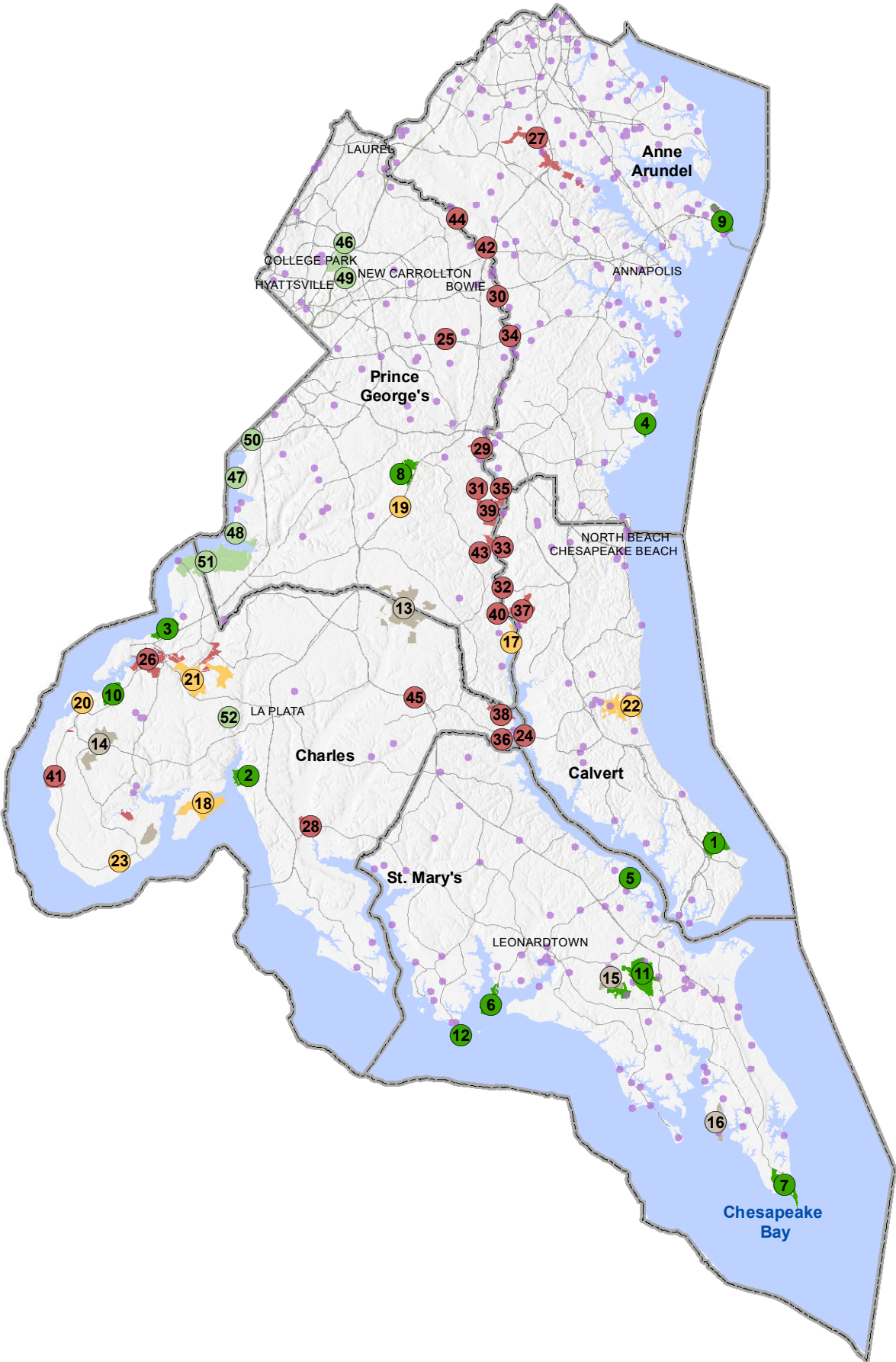
Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

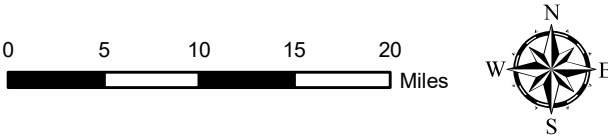
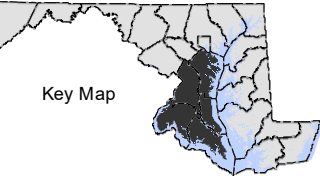
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

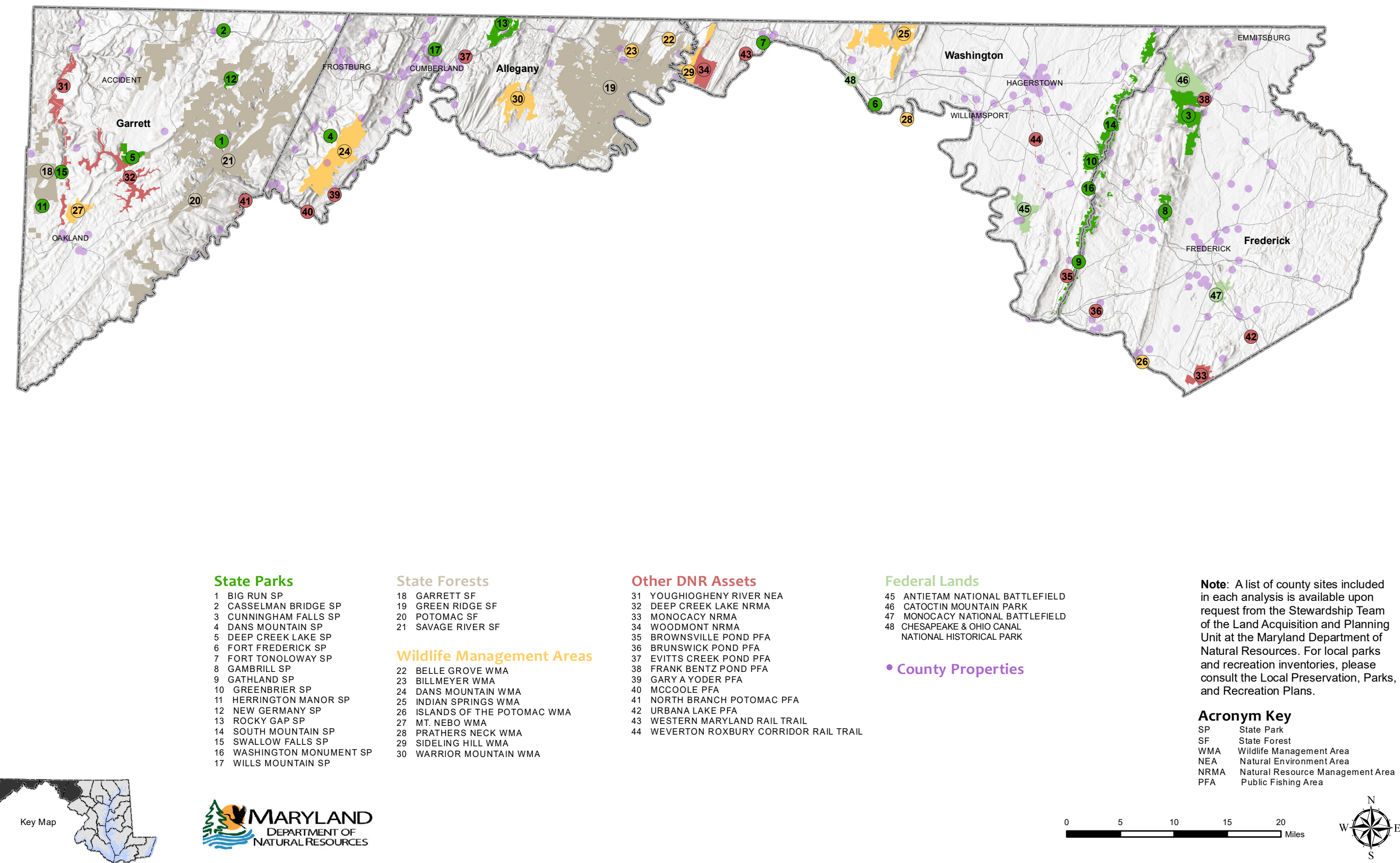


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

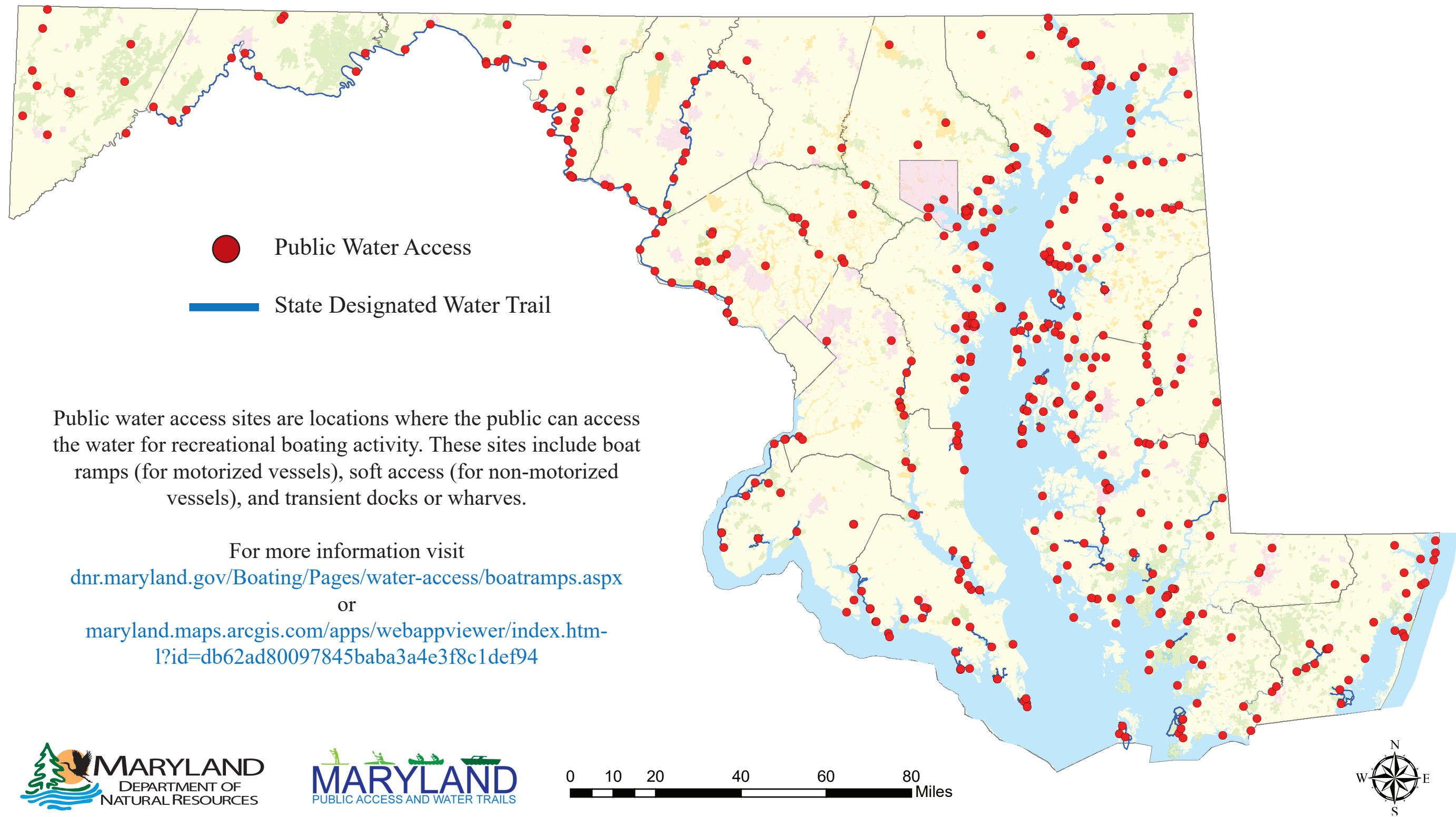
Acronym Key	
SP	State Park
SF	State Forest
WMA	Wildlife Management Area
NEA	Natural Environment Area
NRMA	Natural Resource Management Area
PFA	Public Fishing Area



Map 4: Western Region Inventory



Statewide Water Access and Water Trails



APPENDIX D: INVENTORY AND LEVEL OF SERVICE METHODOLOGY

This update to the Level of Service analysis builds on the 2014 Maryland Land Preservation and Recreation Plan. It presents a snapshot of recreation amenities available on public lands in Maryland. The 2014 analysis focused on properties owned and managed by the Maryland Department of Natural Resources and National Park Service. For this update, recreation amenities provided by all Maryland counties and the City of Baltimore have also been included to provide a more complete understanding than in the previous effort.

Recreation data was gathered in a GIS database, processed in a 5-mile proximity analysis, and mapped side-by-side with user participation results from the statistically valid surveys for comparison. If you would like a listing of all the county and city amenities that were included in the plan proximity analyses, please contact the Department of Natural Resources, Land Acquisition and Planning Unit's Stewardship Team.

INVENTORY

The inventory for this update started with the 2014 Land Preservation and Recreation Plan dataset for state and federal lands. This original dataset had been assembled with input from land managers statewide and reflected all publicly accessible Department of Natural Resources lands and waters as well as federal lands in the state. Data gathering in 2014 included an array of recreation amenities, public resources such as natural areas or beaches, facilities such as shelters or boat ramps, site uses like swimming or mountain biking, and/or state licensed fee-based activities of hunting and fishing.

Additional data was added for this 2019 update to include recreation data from all 23 Maryland counties and the City of Baltimore. Data requests to county and city parks and recreation and GIS staff were simplified to streamline the process.

Data gathering was based on several criteria:

- 1) The site is publicly accessible
- 2) The site provides natural resource-based recreation
- 3) The site offers at least one of the following amenities:
 - A. Natural Area: An undeveloped area with natural resource value
 - B. Water Recreation: Includes swimming, paddling, motor boating, sailing, and/or fishing
 - C. Picnicking: At least one picnic table in a natural resource-based environment
 - D. Trail: Any path or trail that may be used for walking or hiking, cycling, mountain biking, or by equestrians
 - E. Hunting: Designated areas for hunting
 - F. Fishing: Designated areas for fishing

Only sites that offer natural resource-based recreation were included in the inventory and excluded athletic facilities, cultural attractions, or other types of site uses. Focus amenities were chosen based on public demand as indicated in results of a statistically valid survey and public input from regional workshops. The focus amenities analyzed for this update are mostly consistent with those studied in 2014 Land Preservation and Recreation Plan.

ANALYSIS

Analyses were conducted for each focus amenity. All locations with a particular type of amenity, such as picnicking, were isolated and analyzed as a batch using specialized GIS tools developed to assess recreation. This toolkit is part of a methodology known as GRASP® (Geo-Referenced Amenities Standards Program).

Methodology

All analyses utilized a single point, call a centroid, to represent each site included. Property boundaries were only referenced in the creation of each of these centerpoints. Each centroid was attributed with any amenity types available at that site to be utilized in specific analyses. If you would like a listing of all the county and city amenities that were included in the Plan proximity analyses, please contact the Department of Natural Resources, Land Acquisition and Planning Unit's Stewardship Team.

All analyses conducted for the 2019 Maryland Land Preservation and Recreation Plan update are proximity analyses. A proximity analysis examines the extent to which recreation amenities are available within a specific distance from the source, called a catchment. A catchment of five miles, essentially a circle of 10 miles was applied to each location being analyzed then overlapped with catchments from other sites. This type of analysis reveals how many instances of an amenity are available within that specified five-mile distance statewide.

The results are then quantified and mapped to indicate greater or lesser proximity to a specific type of amenity across the state. It should be noted that these analyses show proximity to the centroid, or center point, of a site that offers an amenity and do not indicate proximity to that actual amenity.

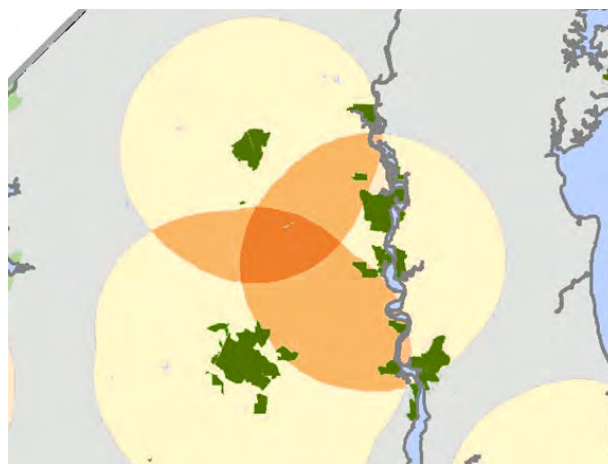
A 5-mile catchment was used for all analyses, a distance that corresponds to a 10-15 minute drive. This is well within the one-hour or less drive-time respondents to the 2018 Statewide Outdoor Recreation Survey indicated that they were willing to travel to access outdoor recreation opportunities.

Proximity vs. Access

A distinction must be made between proximity and access. The analyses conducted for the Land Preservation and Recreation Plan are intended to solely indicate areas of greater or lesser proximity

to amenities within the state. These should not be read to suggest better or worse access, as that implies a host of other considerations beyond the scope of this study.

Further, any indication of proximity to more or fewer amenities is relative to other areas of the State of Maryland.



This graphic illustrates the concept of proximity. Each land unit is overlaid with a ring 5 miles from its center point, or centroid. These rings, called catchments, are then overlaid and symbolized to reflect a total number in a specific area. Darker tones indicate proximity a greater number of sites within five miles. Gray shaded areas indicate no proximity.

MAPPING

Two types of maps were produced for the Maryland Land Preservation and Recreation Plan. Inventory maps serve as tools for reference. Proximity maps display analysis results and speak in particular to the question of supply and demand for outdoor recreation in the state.

Inventory Maps

Inventory maps were produced for each of four Maryland regions:

1. Central
2. Eastern
3. Southern
4. Western

Analysis B: 5-Mile Proximity to Water Recreation
Water recreation includes any location with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming. Participation maps are based on survey responses that indicate participation in “water based recreation.”

Analysis C: 5-Mile Proximity to Picnicking
This analysis focused on all inventory locations with at least one picnic table. Participation rates are based on respondent participation in “picnicking” as an activity.

Analysis D: 5-Mile Proximity to Hunting
Hunting is a fee-based activity requiring a license in Maryland. The hunting analysis is based on all locations with designated hunting areas and survey respondent participation in “hunting.”

Analysis E: 5-Mile Proximity to Fishing
Fishing is a fee-based activity requiring a license in Maryland. The fishing analysis is based on all locations with designated fishing areas and survey respondent participation in “fishing.”

Analysis F: 5-Mile Proximity to Trails
Any sites with a path or trail that may be used for walking or hiking, cycling, mountain biking, by equestrians, or for off-highway vehicle (OHV) use were included in this analysis. Participation in trail-based activities from survey respondents was included.

FINDINGS

Mapping these results yields information that may directly inform and help guide future planning decisions for public outdoor recreation in the State of Maryland. As indicators of supply and demand respectively, proximity and participation rates are useful in determining areas within the State of Maryland where level of service may be improved. These maps may be used by various stakeholders to study specific topics or focus on particular areas of the state, including at county or even more local scales.

Findings can also be revealing about the strengths and deficiencies of the analysis itself. Ultimately these analyses are based on a GIS model with many inherent assumptions. These assumptions will color the results in certain ways. Use of these maps by reviewers familiar with recreation providers and local assets may prove surprising both for the insights they reveal or the clear omissions they present.

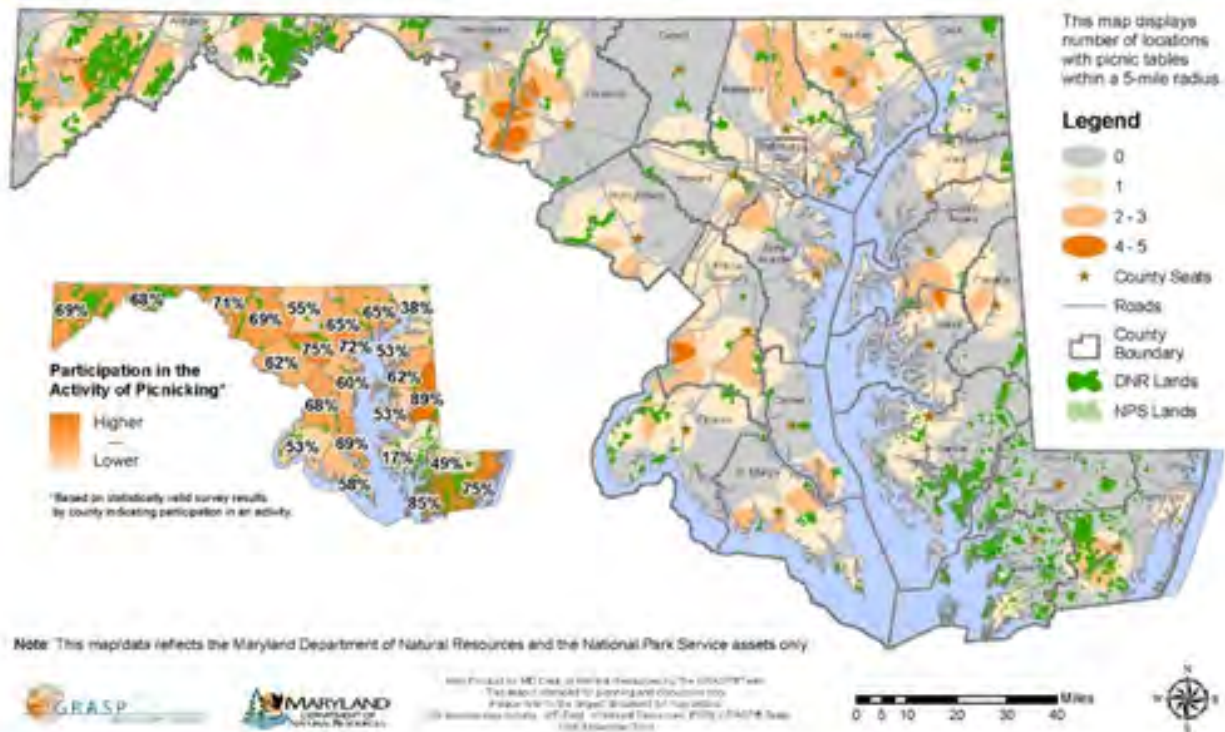
An example will illustrate this point. An examination of Map 3A shows that proximity to water recreation in St. Mary’s County is the lowest in the entire the region. However, it also shows that 74% of St. Mary’s County residents participate in water based recreation, more by far than any other county in the Southern Region. This highlights a couple of insights. First, it may be likely that enthusiasts of water recreation living in St. Mary’s County are willing to travel further than five miles to use water amenities in neighboring counties. Or it is possible that many residents use private amenities not included in the analysis. Most likely both scenarios are true.

The expanded inventory and regional focus for this update to the Level of Service analysis is significant. The addition of local data from all counties and Baltimore City was a major accomplishment and the impact is apparent. For example, a quick glance back at the 2014 picnicking analysis shows just how impactful this is by comparison with Map 1C that shows picnicking in the Central Region. In this region, all areas with coverage gaps in 2014 are “hot spots” in the 2019 map updates, a phenomenon driven by the inclusion of local inventory data.

It should also be noted, that some of this data may need to be better vetted. Based on the analysis criteria, picnic amenities must be in a natural context. However, a further look at Map 1C shows high level of service for picnic amenities in well developed, urbanized parts of the region including the City of Baltimore. It may be unlikely for all of these urban areas to provide a natural resource-based environment. This is simply another qualification and limitation of the GIS data model built for this analysis.

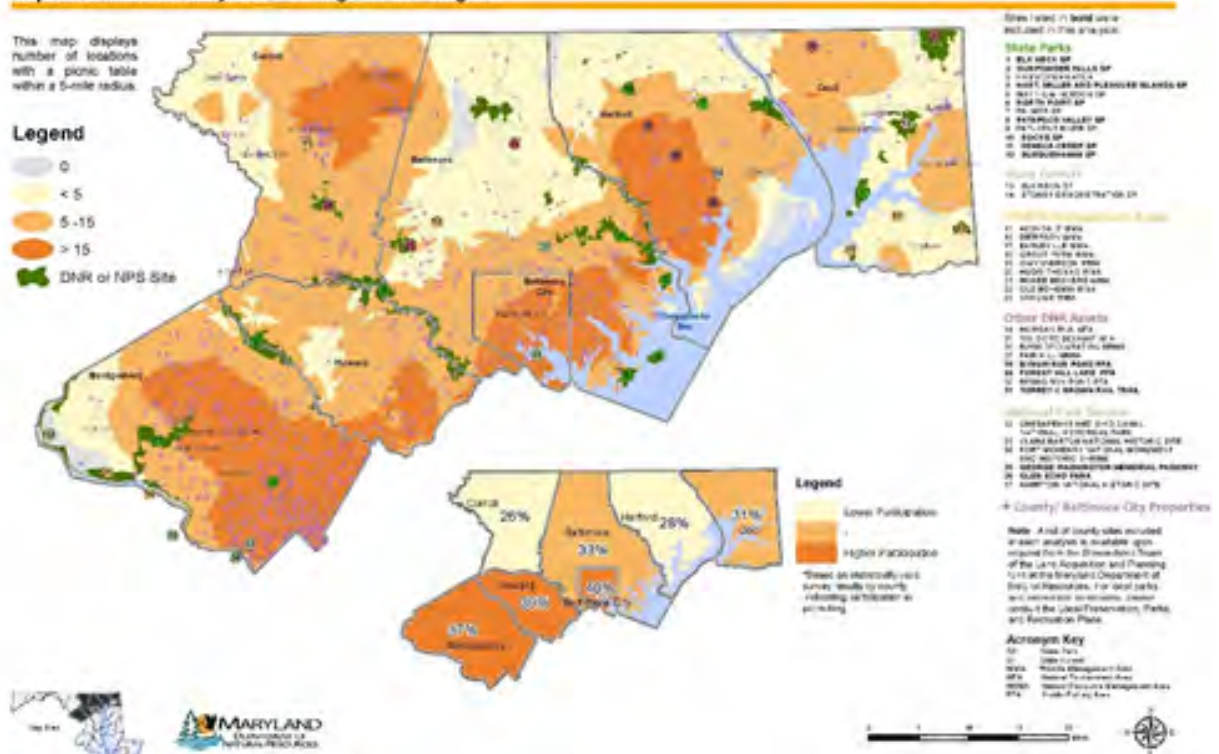
Perspective Map C: 5-Mile Proximity to Picnicking

Connecting People and Places



Maryland Department of Natural Resources: 2019 Land Preservation and Recreation Plan

Map 1C: 5-Mile Proximity to Picnicking - Central Region



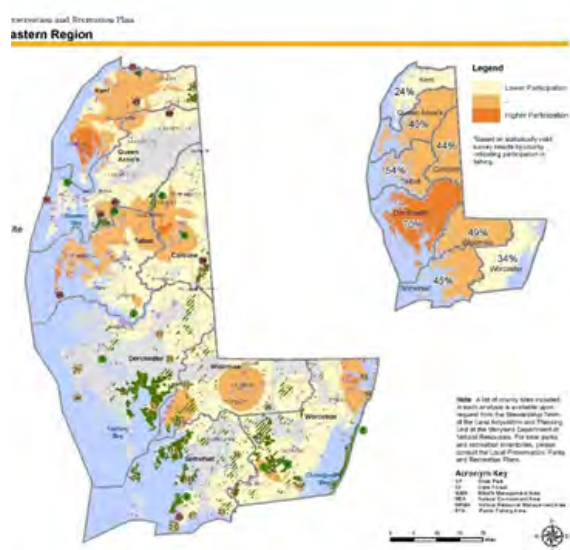
A comparison between picnicking maps from the 2014 Land Preservation and Recreation Plan (top) and 2019 Land Preservation and Recreation Plan (bottom) is not “apples to apples” due to variations in the site inventory, analysis methodology, and map scale. However, it does reveal the added value of County and Baltimore City GIS data to the project. In this comparison major “gap areas” with no available picnic amenities shown in 2014 have the highest service levels in 2019, a dynamic driven entirely by inclusion of county and city data.

Despite a focus on similar types of amenities it should be noted that analyses for this update differ substantially from those in the 2014 Land Preservation and Recreation Plan. The inclusion of county and city properties for this update expanded the inventory from 179 sites to 2,263. The regional focus also differs from the statewide focus in the last plan. Further, the use of a centroid as the basis for the current analyses yields distinct results that vary greatly from the 2014 Land Preservation and Recreation Plan analyses that relied on land unit boundaries.

Use of a site centroid typically shows lesser coverage than a land unit boundary analysis. This was preferred to prevent results that inflate the level of service, common to the other approach. One major limitation of the use of a centroid, however, is that it underestimates the impact of large property. This is apparent on some maps, most often for Department of Natural Resources properties with large acreages such as state forests, state parks, wildlife management areas, and other expansive land units.

For example, on Map 2E, the limitations of a centroid based analysis is apparent at Fishing Bay Wildlife Management Area. Due to the large size of this land unit, at more than 46 square miles, a 5-mile proximity catchment does not adequately reflect the coverage it provides. As a result, the level of service indicated for the area is particularly low for the region.

Even with the limitations discussed, the analysis maps are valuable tools. Map 4F (**Figure 28**), showing trails in the Western Region, is illustrative of this in several ways. Based on comparison with other regions, it can be determined that participation in trail-based recreation in this region is highest on average statewide. Upon review of the proximity map, this is supported in the five-mile coverage for trails. “Hot spots” emerge, nodes of trail availability local to each county. Surrounding these concentrated areas of higher service is broad coverage that indicates at a minimum a low level of proximity for most of the region. This likely indicates users have local trails available to them within five miles of home for most of the region. Beyond that, if users are willing to travel a few miles further within the county they live in they have a far greater number of trails available. These findings are particularly significant in this region as it is home to the greatest levels of trail use statewide.

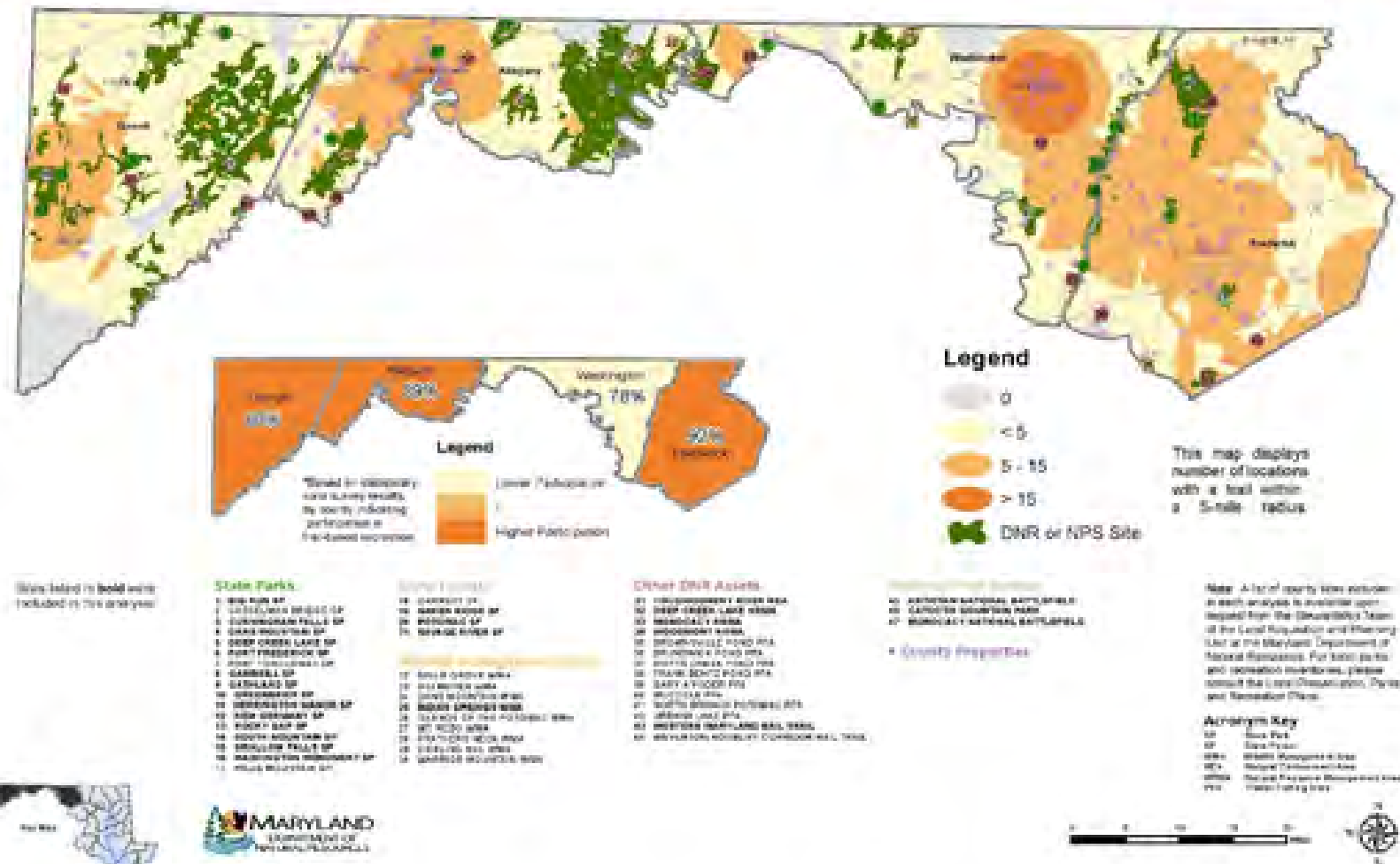


A centroid based analysis skews service coverage for large sites. On Map 2E fishing in the Eastern Region is shown to be particularly limited near Fishing Bay WMA in Dorchester County, despite that this site does offer various fishing sites in several different locations.

Figure 28: Map 4F 5-Mile Proximity to Trails - Western Region

Maryland Department of Natural Resources, 2019 Land Preservation and Recreation Plan

Map 4F: 5-Mile Proximity to Trails - Western Region



Map 4F yields some illustrative findings. Proximity analysis shows good coverage across the region for trails, with “hot spots” specific to each county that indicate particularly high service levels. This suggests that users in every Western region county can utilize local trails near home as well as a greater variety of trails within the county they live in. This region also has the greatest participation in trail-based recreation statewide.

These findings point to several recommendations, next steps in looking ahead to further evaluate recreational level of service for the future.

RECOMMENDATIONS

Several recommendations emerge from the 2019 Land Preservation and Recreation Plan Inventory and Level of Service Analysis:

- A. Work with County agencies to further vet their data included in the 2018 statewide GIS outdoor recreation database.
- B. Work with County and state agencies to define consistent key technical criteria and formatting needs for future outdoor recreation GIS data submission (shapefile needs, data formatting, etc.). All future outdoor recreation GIS related information should be submitted in accordance with the defined criteria. Inventory data from these and other providers would complete the statewide dataset. The dataset compiled for this plan may serve as the basis for future data gathering.
- C. State and County parks and recreation agencies should provide GIS data to define “points of access” (trailheads, parking areas, main entrance gate, etc.) to parks and sites with public outdoor recreation opportunities. This effort will allow for more accurate analysis based on access points to each site. If this is not possible due to technical constraints, another approach is to utilize multiple points in analysis for larger land units or those that include several distinct properties.
- D. State and county agencies should seek to GIS locate significant historic and cultural sites and lands within their parks and recreation systems. With some coordination, the focus on natural resource-based recreation could be expanded to include cultural resources.
- E. State and county agencies should seek to GIS locate all major recreation amenities under their stewardship.

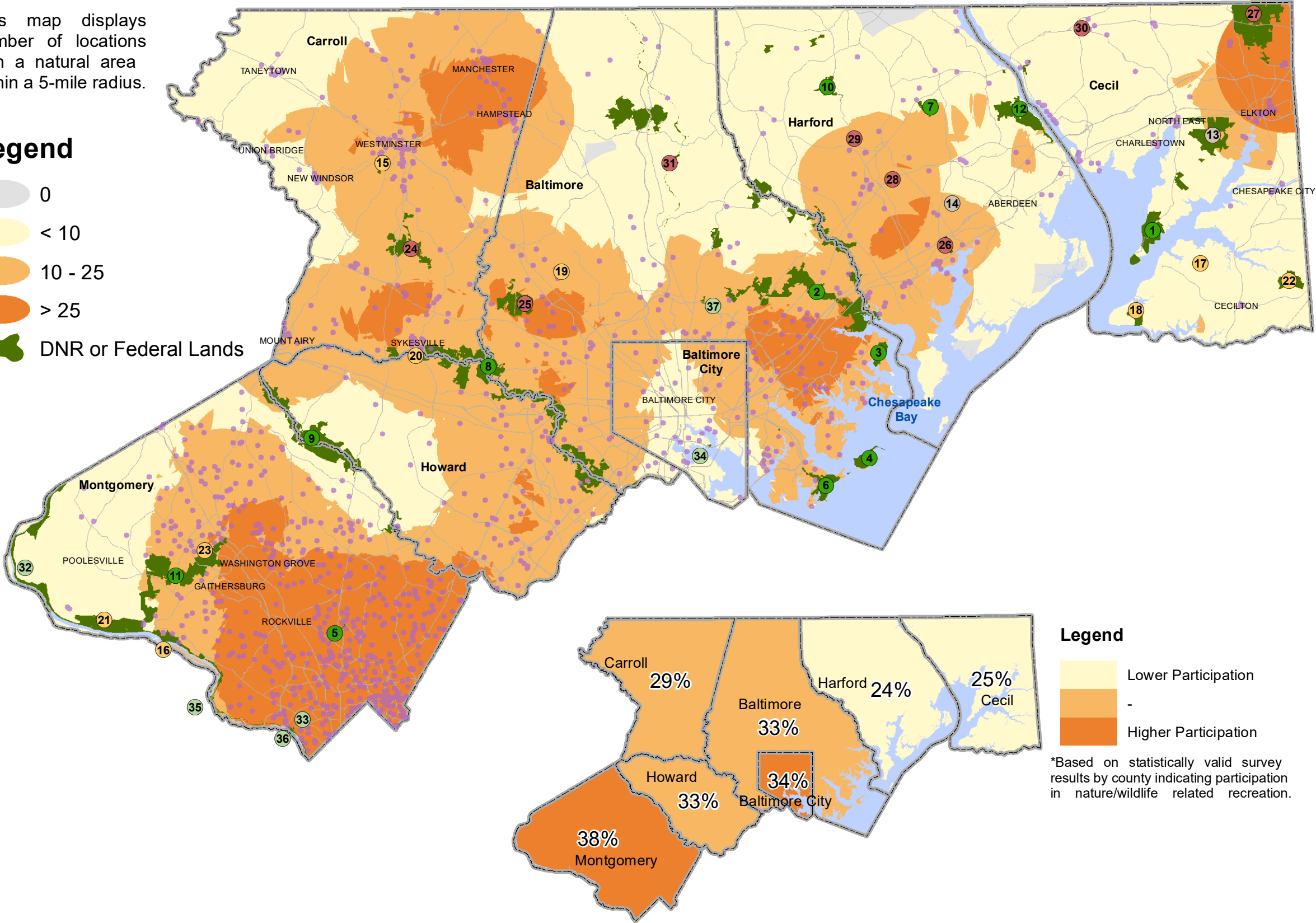
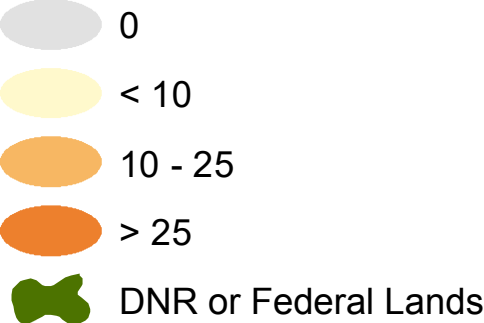
APPENDIX E: ANALYSIS MAPS

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Map 1A: 5-Mile Proximity to Natural Areas - Central Region

This map displays number of locations with a natural area within a 5-mile radius.

Legend



Sites listed in **bold** were included in this analysis:

- State Parks**
- 1 ELK NECK SP
 - 2 GUNPOWDER FALLS SP
 - 3 HAMMERMAN AREA
 - 4 HART, MILLER AND PLEASURE ISLANDS SP
 - 5 MATTHEW HENSON SP
 - 6 NORTH POINT SP
 - 7 PALMER SP
 - 8 PATAPSCO VALLEY SP
 - 9 PATUXENT RIVER SP
 - 10 ROCKS SP
 - 11 SENECA CREEK SP
 - 12 SUSQUEHANNA SP

- State Forests**
- 13 ELK NECK SF
 - 14 STONEY DEMONSTRATION SF

- Wildlife Management Areas**
- 15 AVONDALE WMA
 - 16 DIERRSEN WMA
 - 17 EARLEVILLE WMA
 - 18 GROVE FARM WMA
 - 19 GWYNNBROOK WMA
 - 20 HUGG-THOMAS WMA
 - 21 MCKEE BESHES WMA
 - 22 OLD BOHEMIA WMA
 - 23 STRIDER WMA

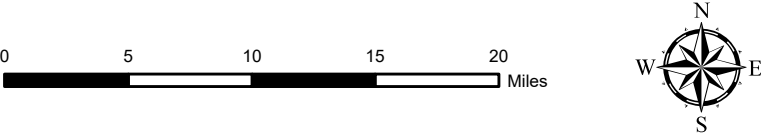
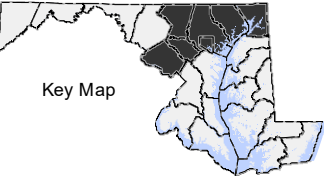
- Other DNR Assets**
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL

- Federal Lands**
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
 - 33 CLARA BARTON NATIONAL HISTORIC SITE
 - 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
 - 35 GEORGE WASHINGTON MEMORIAL PARKWAY
 - 36 GLEN ECHO PARK
 - 37 HAMPTON NATIONAL HISTORIC SITE

• **County/ Baltimore City Properties**

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

- Acronym Key**
- SP State Park
 - SF State Forest
 - WMA Wildlife Management Area
 - NEA Natural Environment Area
 - NRMA Natural Resource Management Area
 - PFA Public Fishing Area



Map 2A: 5-Mile Proximity to Natural Areas - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JANES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLWILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with a natural area within a 5-mile radius.

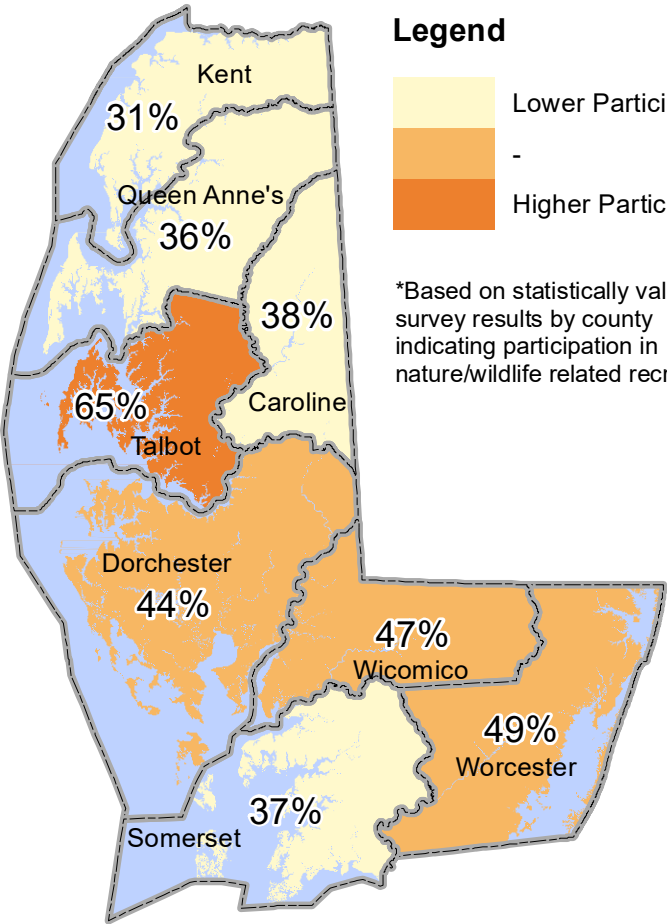
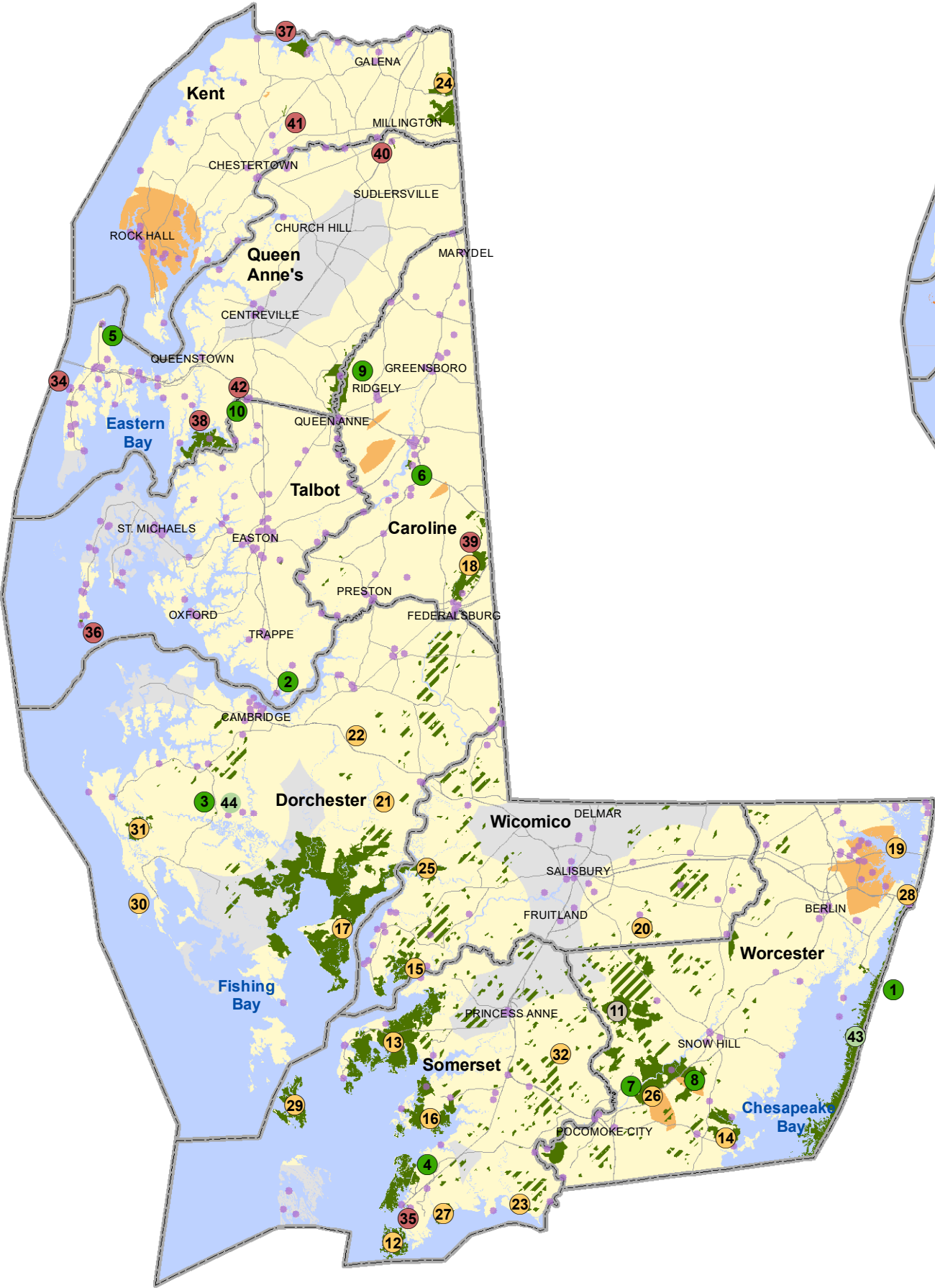
Legend

- 0
- < 10
- 10 - 25
- > 25
- DNR or Federal Lands

Legend

- Lower Participation
-
- Higher Participation

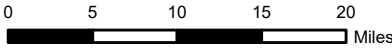
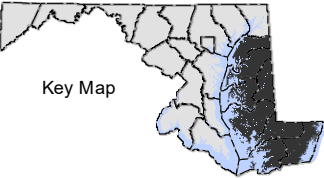
*Based on statistically valid survey results by county indicating participation in nature/wildlife related recreation.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3A: 5-Mile Proximity to Natural Areas - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

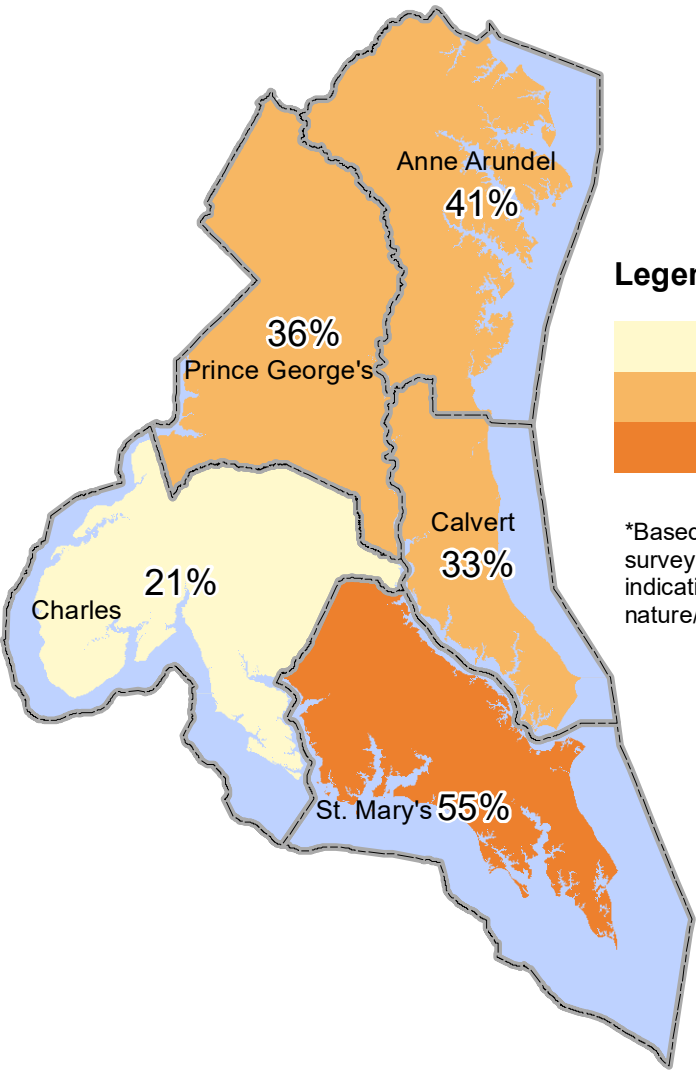
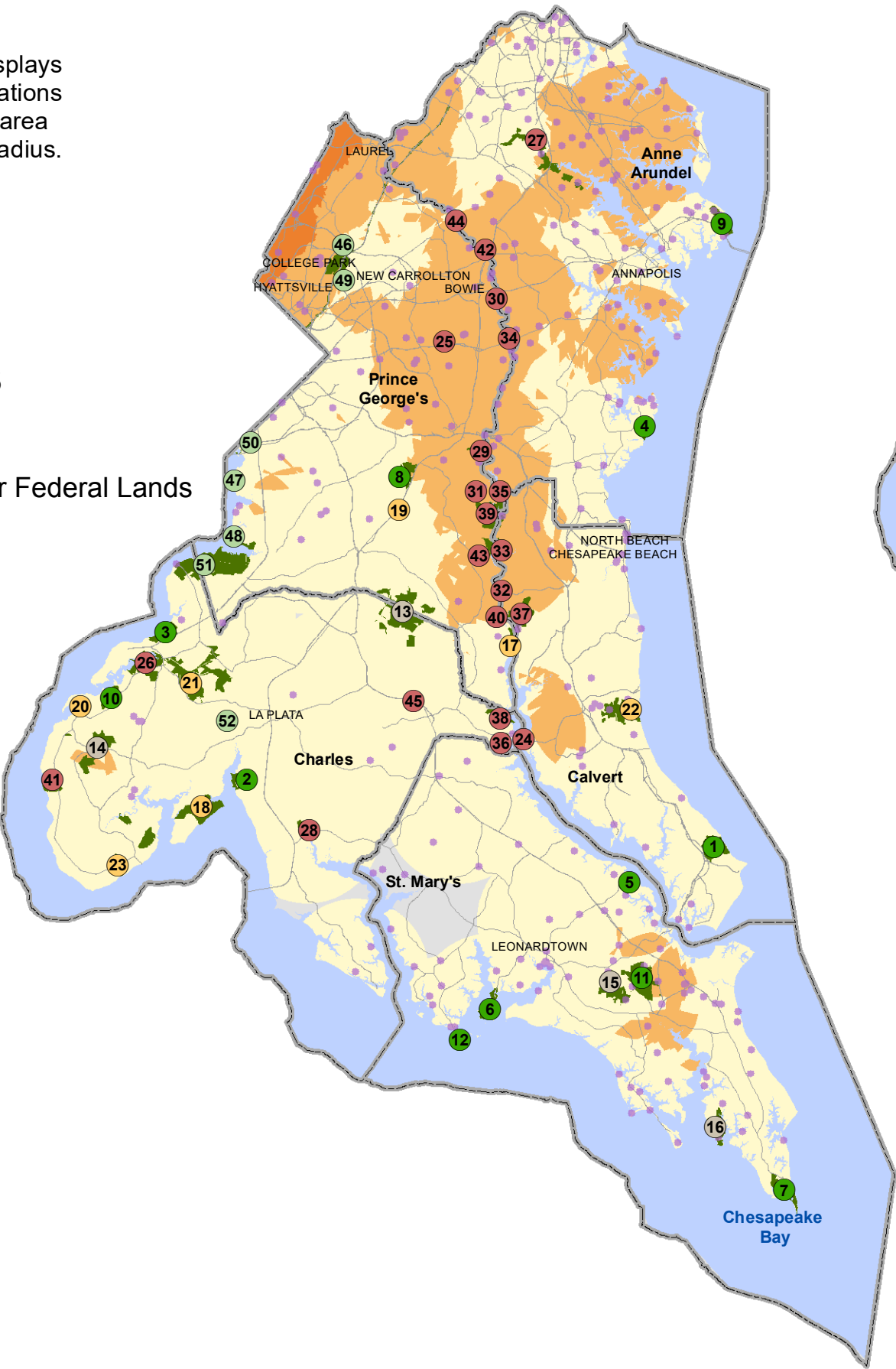
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with a natural area within a 5-mile radius.

Legend

- 0
- < 10
- 10 - 25
- > 25
- DNR or Federal Lands



Legend

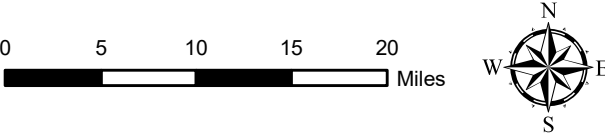
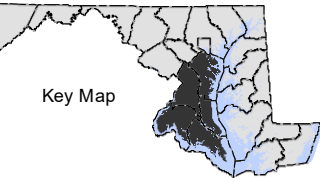
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in nature/wildlife related recreation.

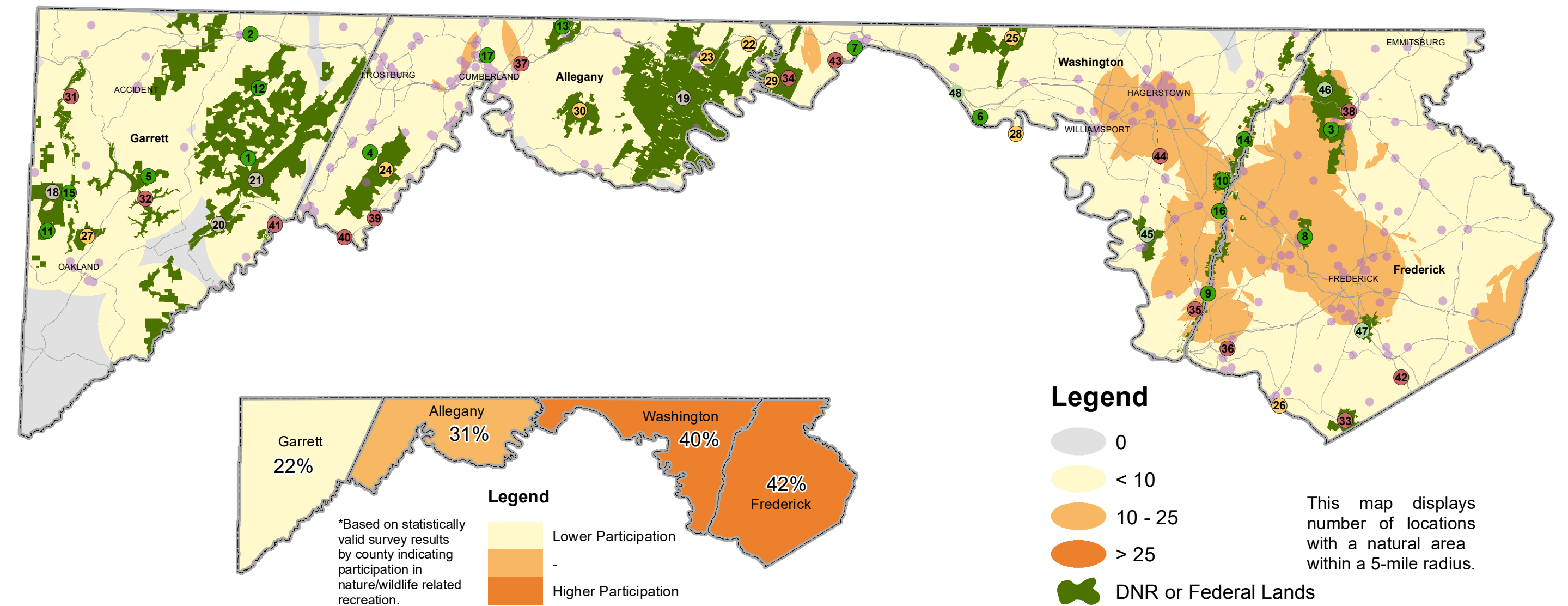
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4A: 5-Mile Proximity to Natural Areas - Western Region



This map displays number of locations within a 5-mile radius.

Sites listed in **bold** were included in this analysis:

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 GREEN RIDGE SF
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 MONOCACY NRMA
- 34 WOODMONT NRMA
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

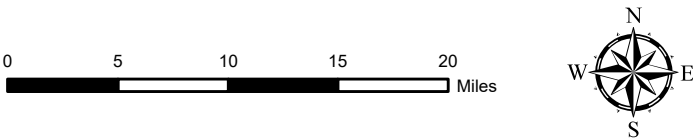
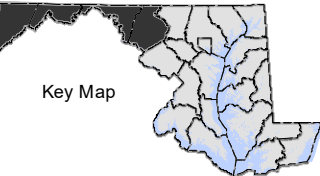
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key







- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area

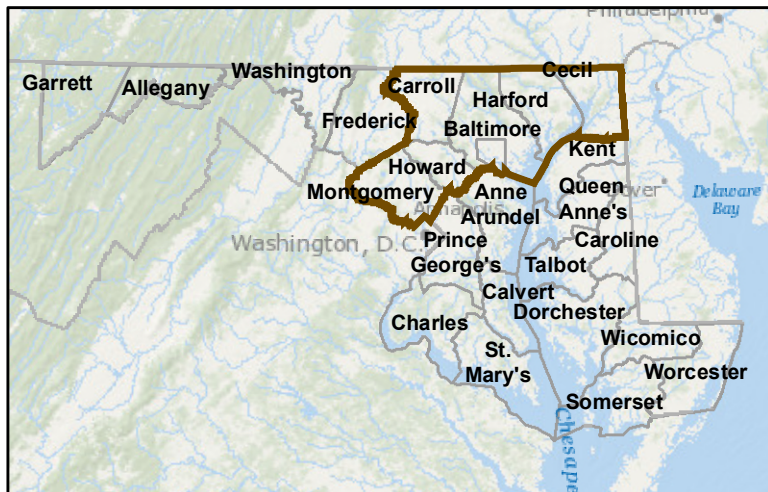




MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

LEGEND

-  0 Sites
-  < 5 Sites
-  5-15 Sites
-  > 15 Sites
-  DNR or FEDERAL LANDS
-  COUNTY PROTECTED LANDS



5-Mile Proximity to Water Recreation - Eastern Region



This map displays number of locations with water recreation* within a 5-mile radius.

LEGEND

0 Sites

< 5 Sites

5-15 Sites

> 15 Sites

DNR or FEDERAL LANDS

COUNTY PROTECTED LANDS

Legend

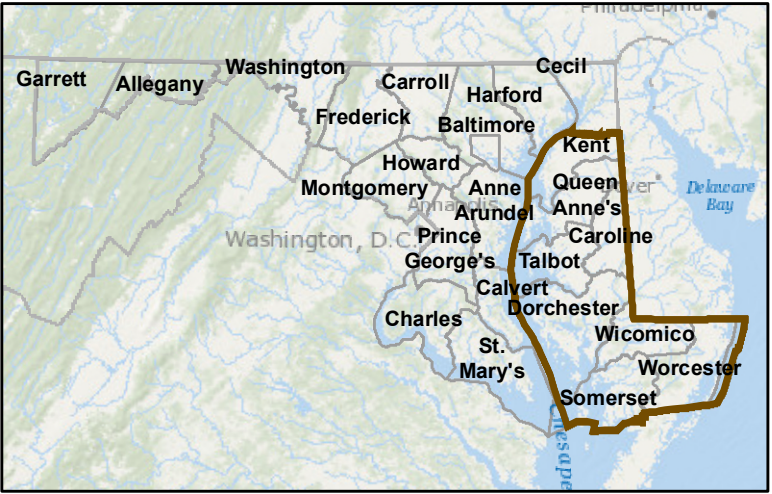
Lower Participation

Higher Participation

*Based on statistically valid survey results by county indicating participation in water based recreation.

*Water recreation includes locations with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming.

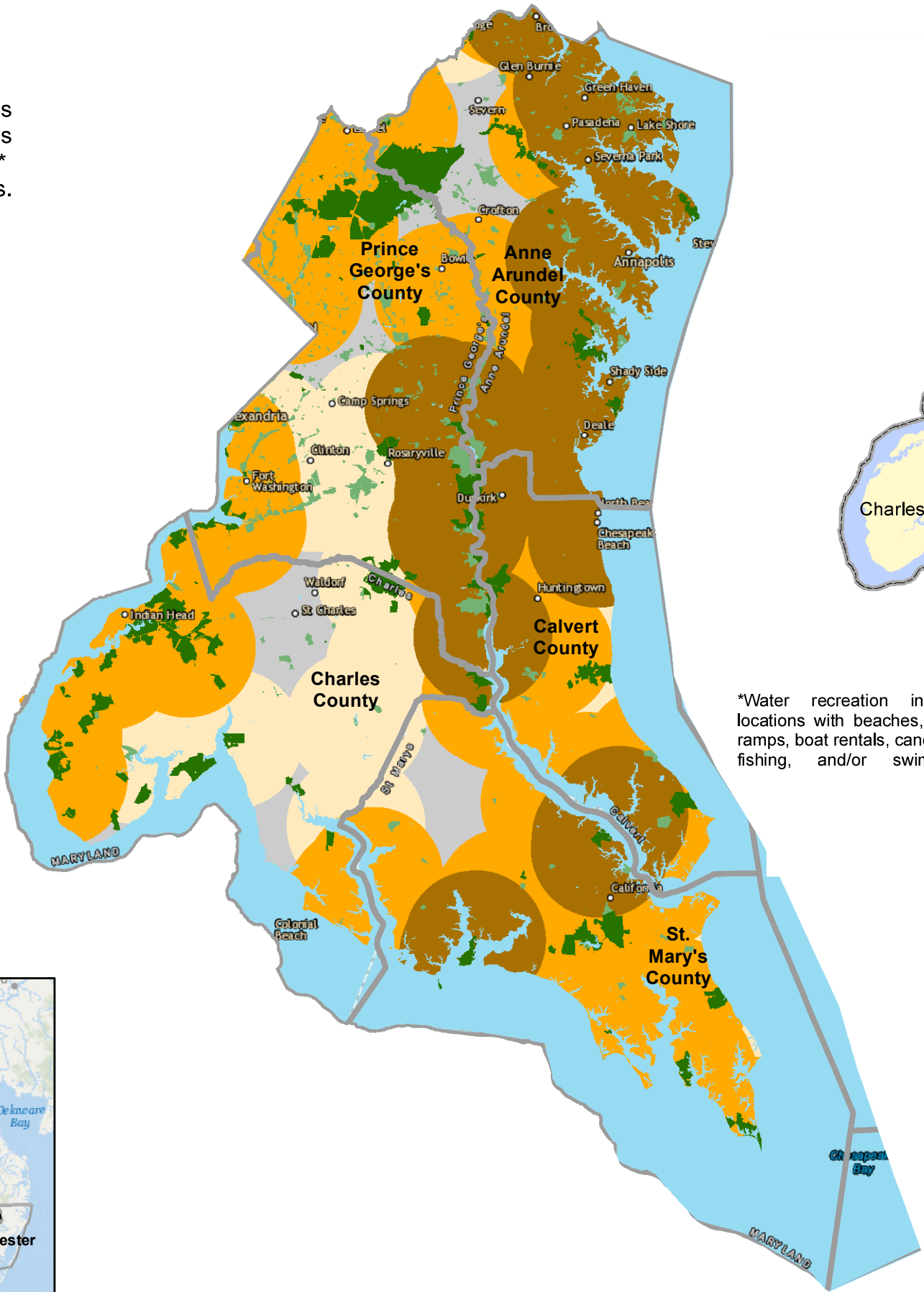
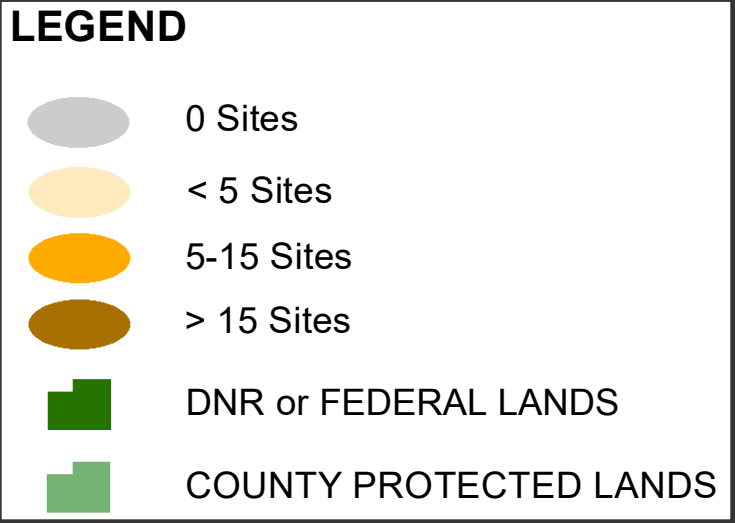
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.



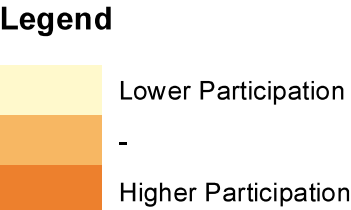
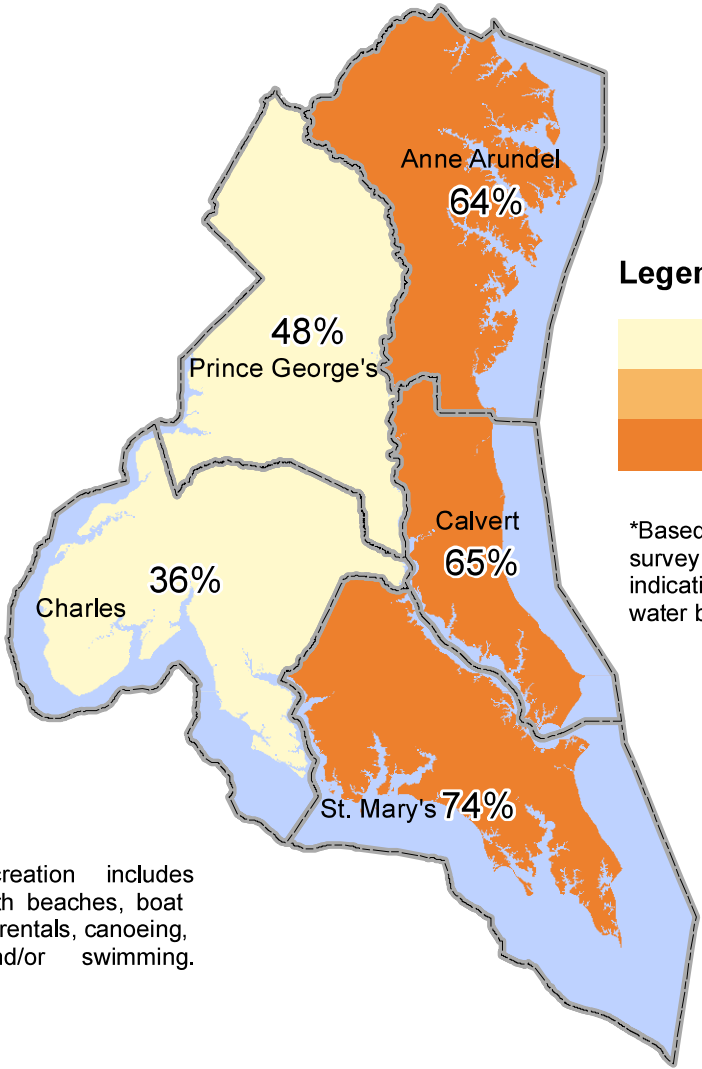
5-Mile Proximity to Water Recreation - Southern Region



This map displays number of locations with water recreation* within a 5-mile radius.

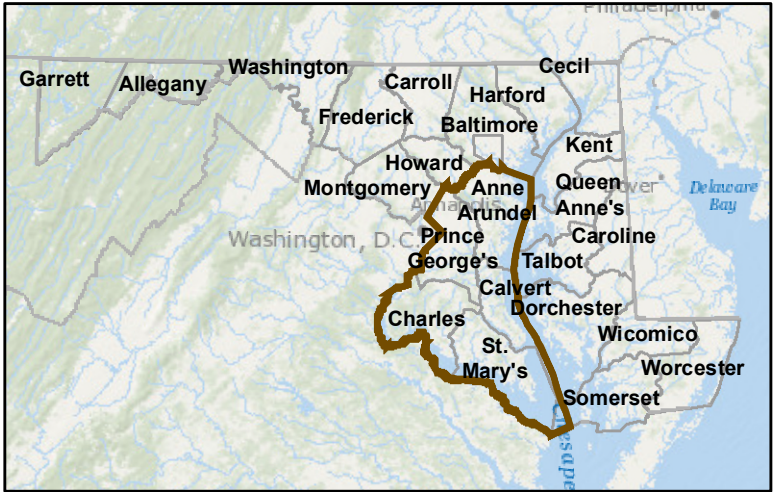


*Water recreation includes locations with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming.



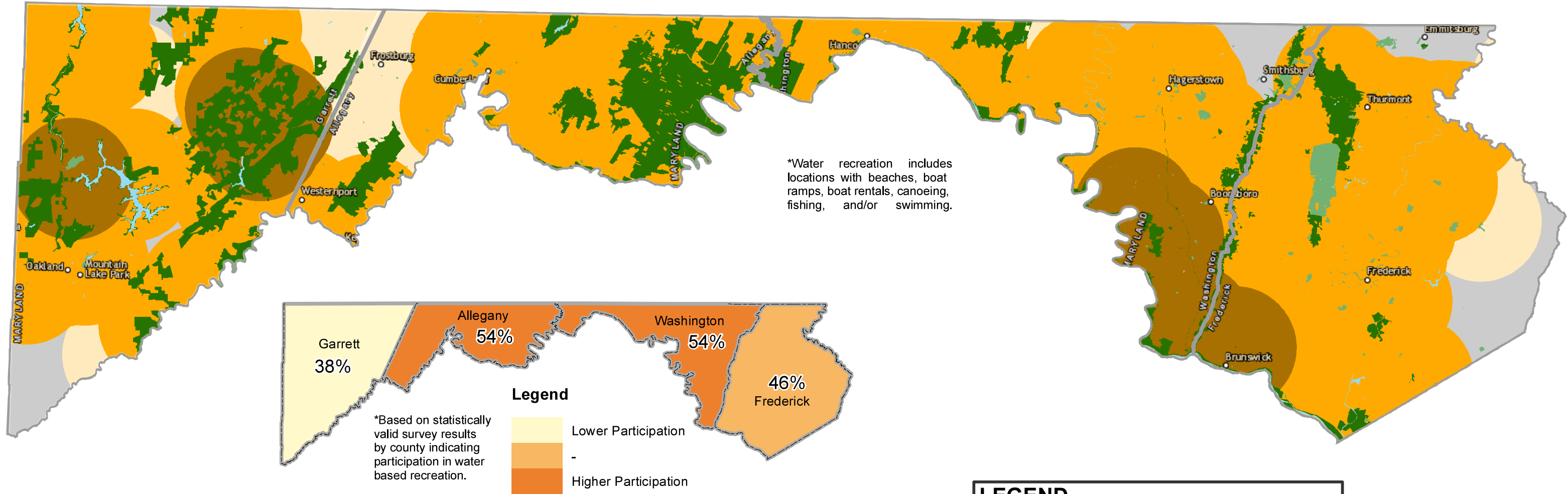
*Based on statistically valid survey results by county indicating participation in water based recreation.

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

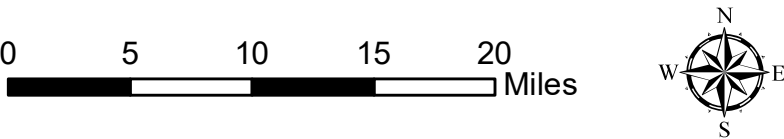
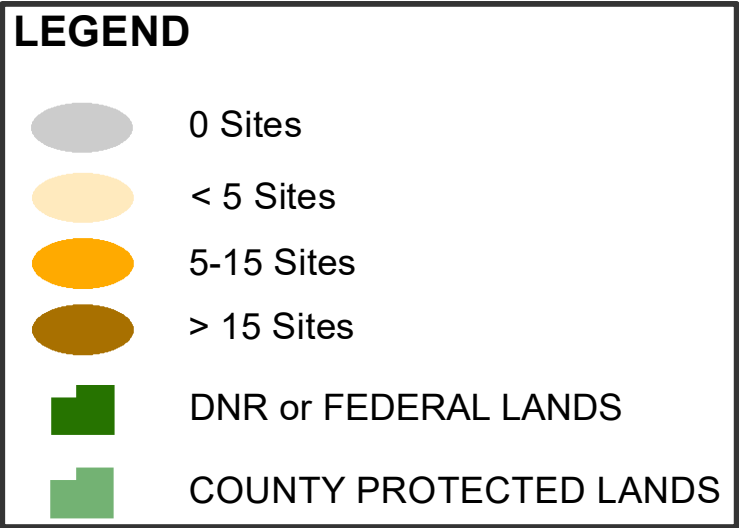


5-Mile Proximity to Water Recreation - Western Region

This map displays number of locations with water recreation* within a 5-mile radius.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

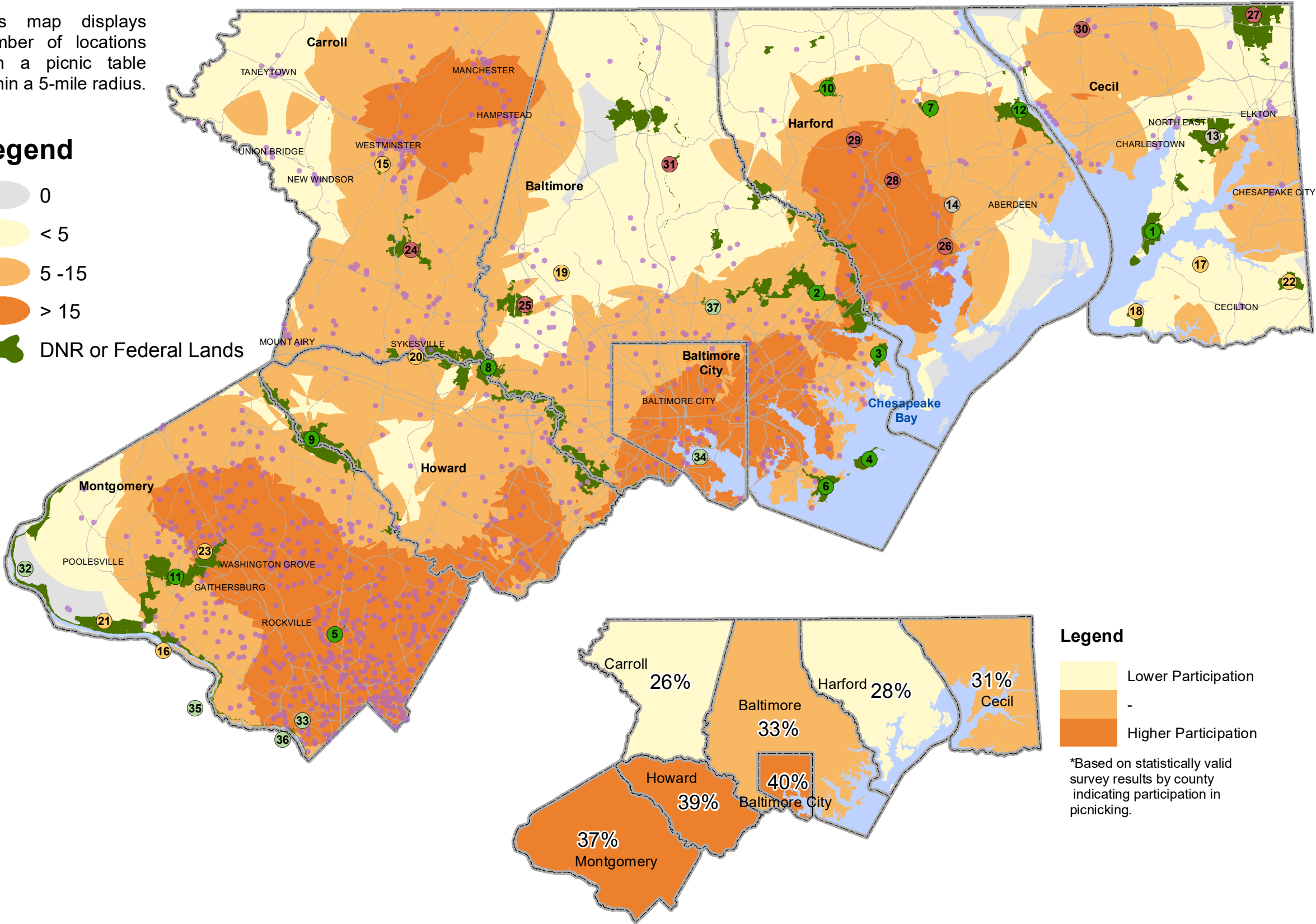


Map 1C: 5-Mile Proximity to Picnicking - Central Region

This map displays number of locations with a picnic table within a 5-mile radius.

Legend

- 0
- < 5
- 5 -15
- > 15
- DNR or Federal Lands



Sites listed in **bold** were included in this analysis:

- State Parks**
- 1 ELK NECK SP**
 - 2 GUNPOWDER FALLS SP**
 - 3 HAMMERMAN AREA
 - 4 HART, MILLER AND PLEASURE ISLANDS SP**
 - 5 MATTHEW HENSON SP
 - 6 NORTH POINT SP**
 - 7 PALMER SP
 - 8 PATAPSCO VALLEY SP**
 - 9 PATUXENT RIVER SP
 - 10 ROCKS SP**
 - 11 SENECA CREEK SP**
 - 12 SUSQUEHANNA SP**

- State Forests**
- 13 ELK NECK SF
 - 14 STONEY DEMONSTRATION SF

- Wildlife Management Areas**
- 15 AVONDALE WMA
 - 16 DIERSEN WMA
 - 17 EARLEVILLE WMA
 - 18 GROVE FARM WMA
 - 19 GWYNNBROOK WMA
 - 20 HUGG-THOMAS WMA
 - 21 MCKEE BESHES WMA
 - 22 OLD BOHEMIA WMA
 - 23 STRIDER WMA

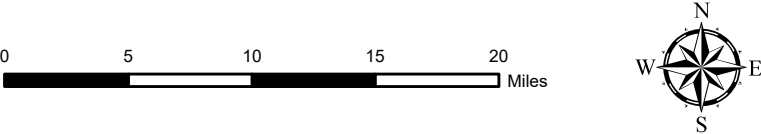
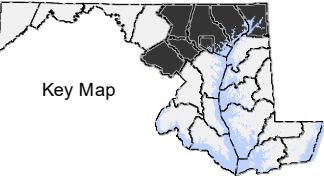
- Other DNR Assets**
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL

- Federal Lands**
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
 - 33 CLARA BARTON NATIONAL HISTORIC SITE
 - 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
 - 35 GEORGE WASHINGTON MEMORIAL PARKWAY
 - 36 GLEN ECHO PARK
 - 37 HAMPTON NATIONAL HISTORIC SITE

• **County/ Baltimore City Properties**

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

- Acronym Key**
- SP State Park
 - SF State Forest
 - WMA Wildlife Management Area
 - NEA Natural Environment Area
 - NRMA Natural Resource Management Area
 - PFA Public Fishing Area



Map 2C: 5-Mile Proximity to Picnicking - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JANES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLVILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with a picnic table within a 5-mile radius.

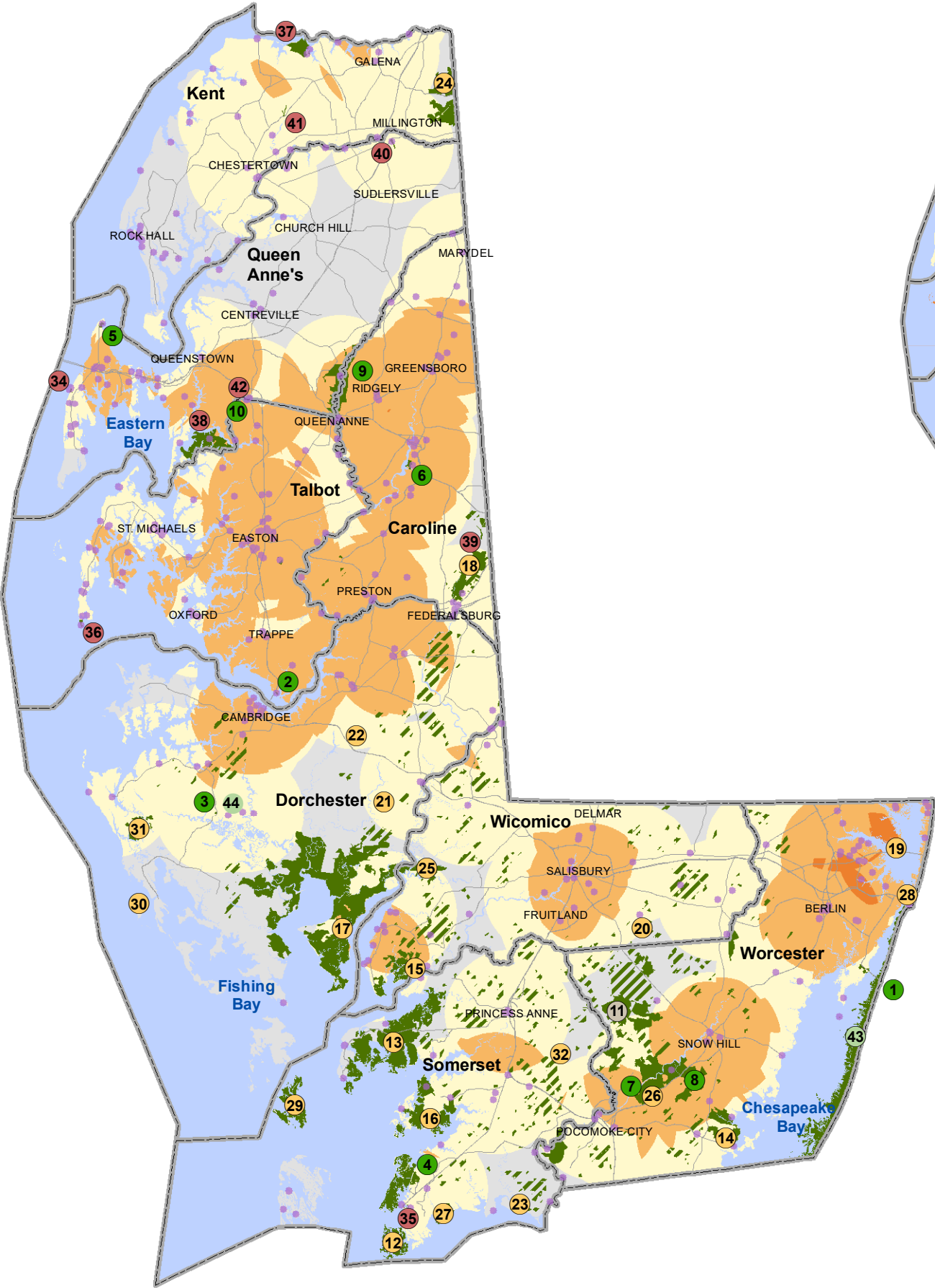
Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Lands

Legend

- Lower Participation
-
- Higher Participation

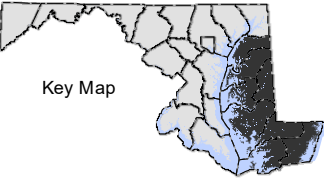
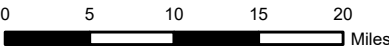
*Based on statistically valid survey results by county indicating participation in picnicking.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3C: 5-Mile Proximity to Picnicking - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

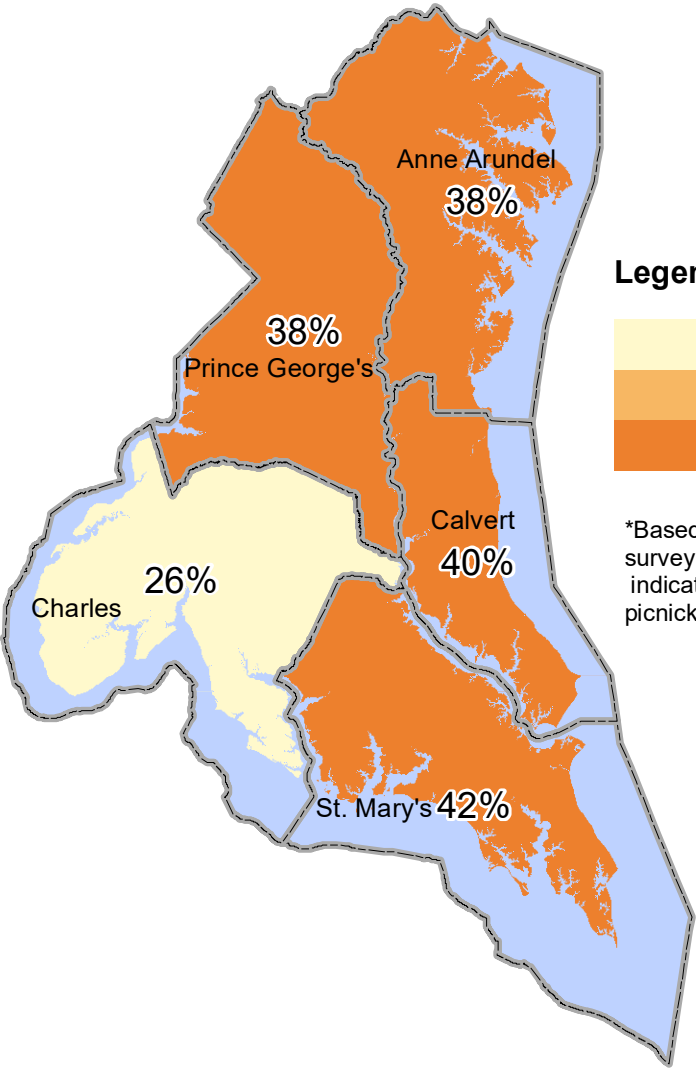
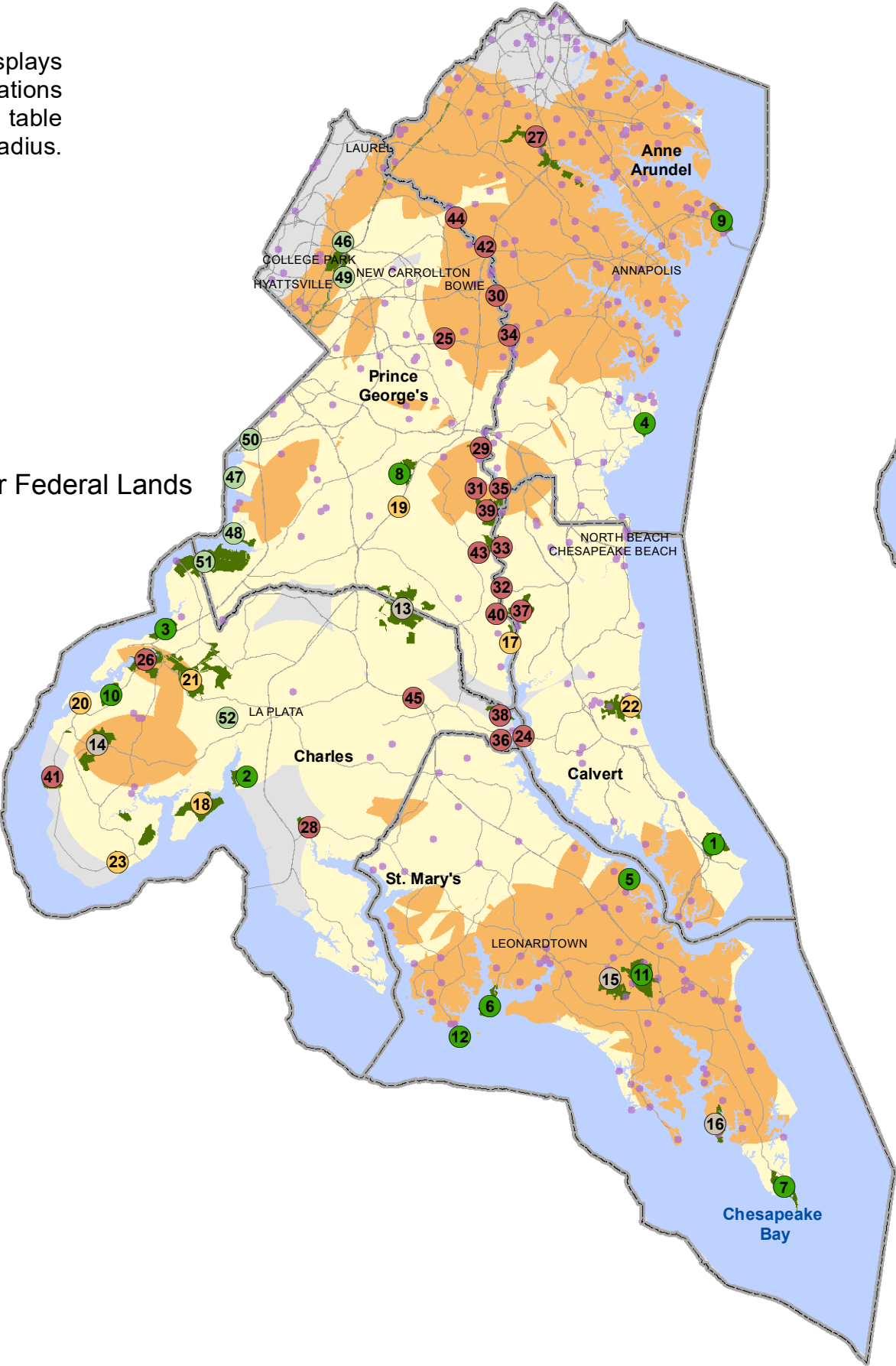
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with a picnic table within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Lands



Legend

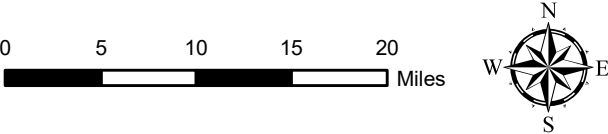
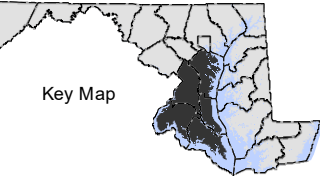
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in picnicking.

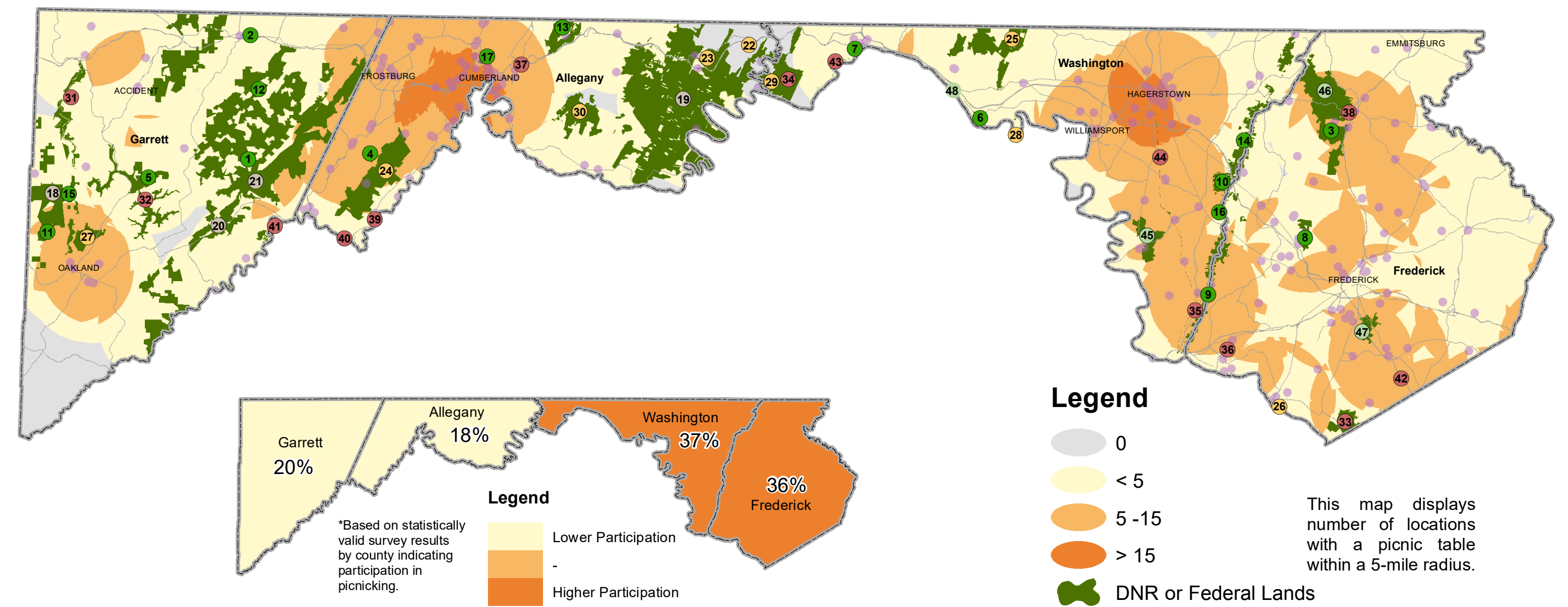
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4C: 5-Mile Proximity to Picnicking - Western Region



Sites listed in **bold** were included in this analysis:

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 GREEN RIDGE SF
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 MONOCACY NRMA
- 34 WOODMONT NRMA
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

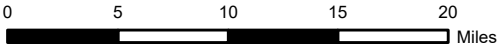
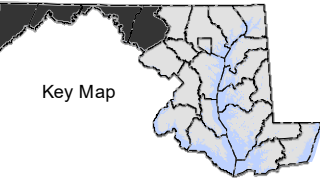
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
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- PFA Public Fishing Area

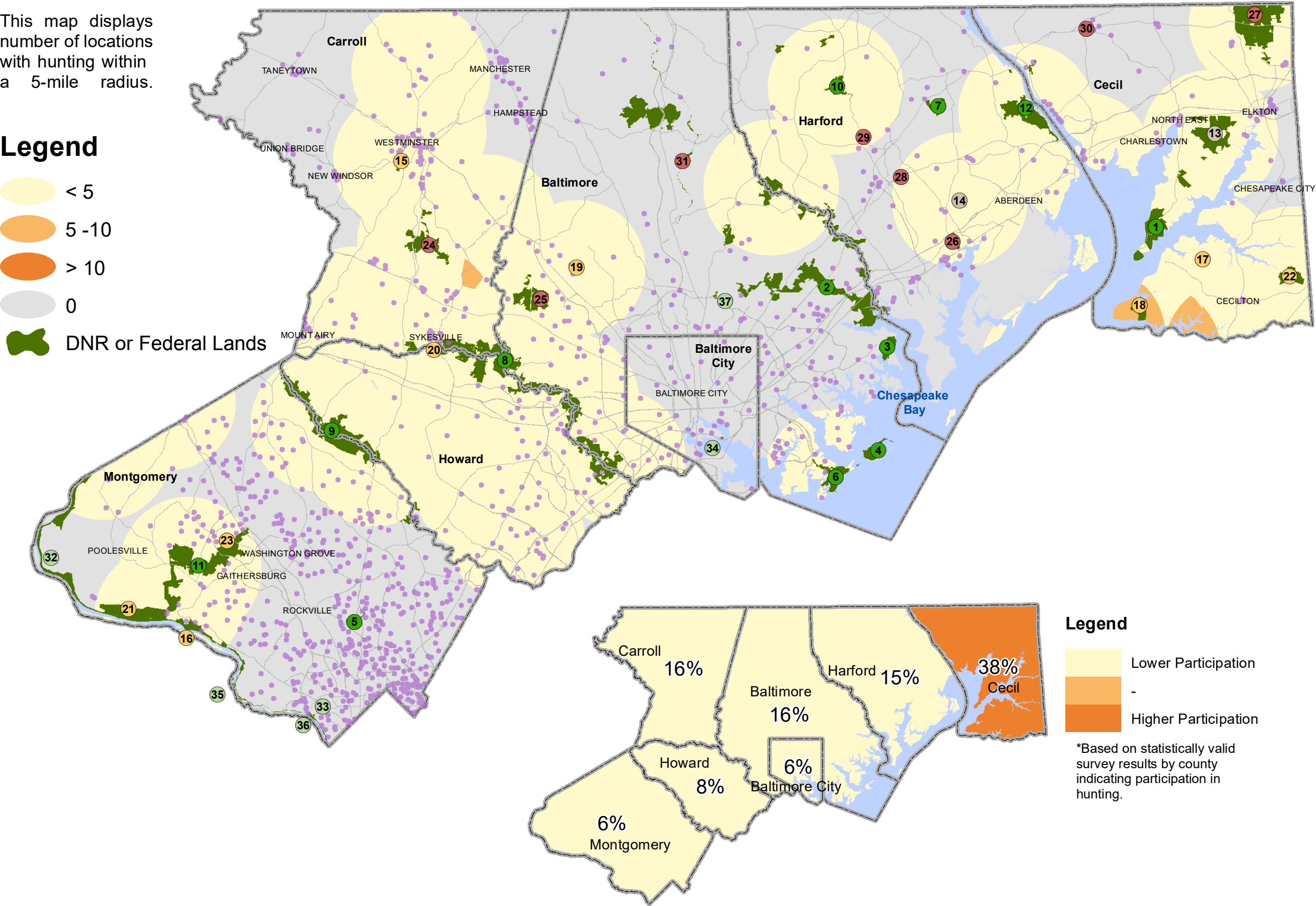


Map 1D: 5-Mile Proximity to Hunting - Central Region

This map displays number of locations with hunting within a 5-mile radius.

Legend

- < 5
- 5 -10
- > 10
- 0
- DNR or Federal Lands



Sites listed in **bold** were included in this analysis:

- State Parks**
- 1 ELK NECK SP
 - 2 GUNPOWDER FALLS SP
 - 3 HAMMERMAN AREA
 - 4 HART, MILLER AND PLEASURE ISLANDS SP
 - 5 MATTHEW HENSON SP
 - 6 NORTH POINT SP
 - 7 PALMER SP
 - 8 PATAPSCO VALLEY SP
 - 9 PATUXENT RIVER SP
 - 10 ROCKS SP
 - 11 SENECA CREEK SP
 - 12 SUSQUEHANNA SP

- State Forests**
- 13 ELK NECK SF
 - 14 STONEY DEMONSTRATION SF

- Wildlife Management Areas**
- 15 AVONDALE WMA
 - 16 DIERRSEN WMA
 - 17 EARLEVILLE WMA
 - 18 GROVE FARM WMA
 - 19 GWYNNBROOK WMA
 - 20 HUGG-THOMAS WMA
 - 21 MCKEE BESHES WMA
 - 22 OLD BOHEMIA WMA
 - 23 STRIDER WMA

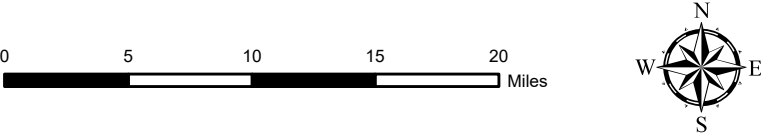
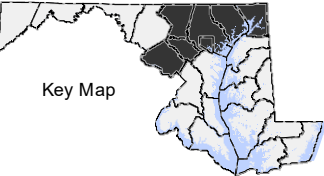
- Other DNR Assets**
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL

- Federal Lands**
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
 - 33 CLARA BARTON NATIONAL HISTORIC SITE
 - 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
 - 35 GEORGE WASHINGTON MEMORIAL PARKWAY
 - 36 GLEN ECHO PARK
 - 37 HAMPTON NATIONAL HISTORIC SITE

• **County/ Baltimore City Properties**

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

- Acronym Key**
- SP State Park
 - SF State Forest
 - WMA Wildlife Management Area
 - NEA Natural Environment Area
 - NRMA Natural Resource Management Area
 - PFA Public Fishing Area



Map 2D: 5-Mile Proximity to Hunting - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JAMES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLVILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with hunting within a 5-mile radius.

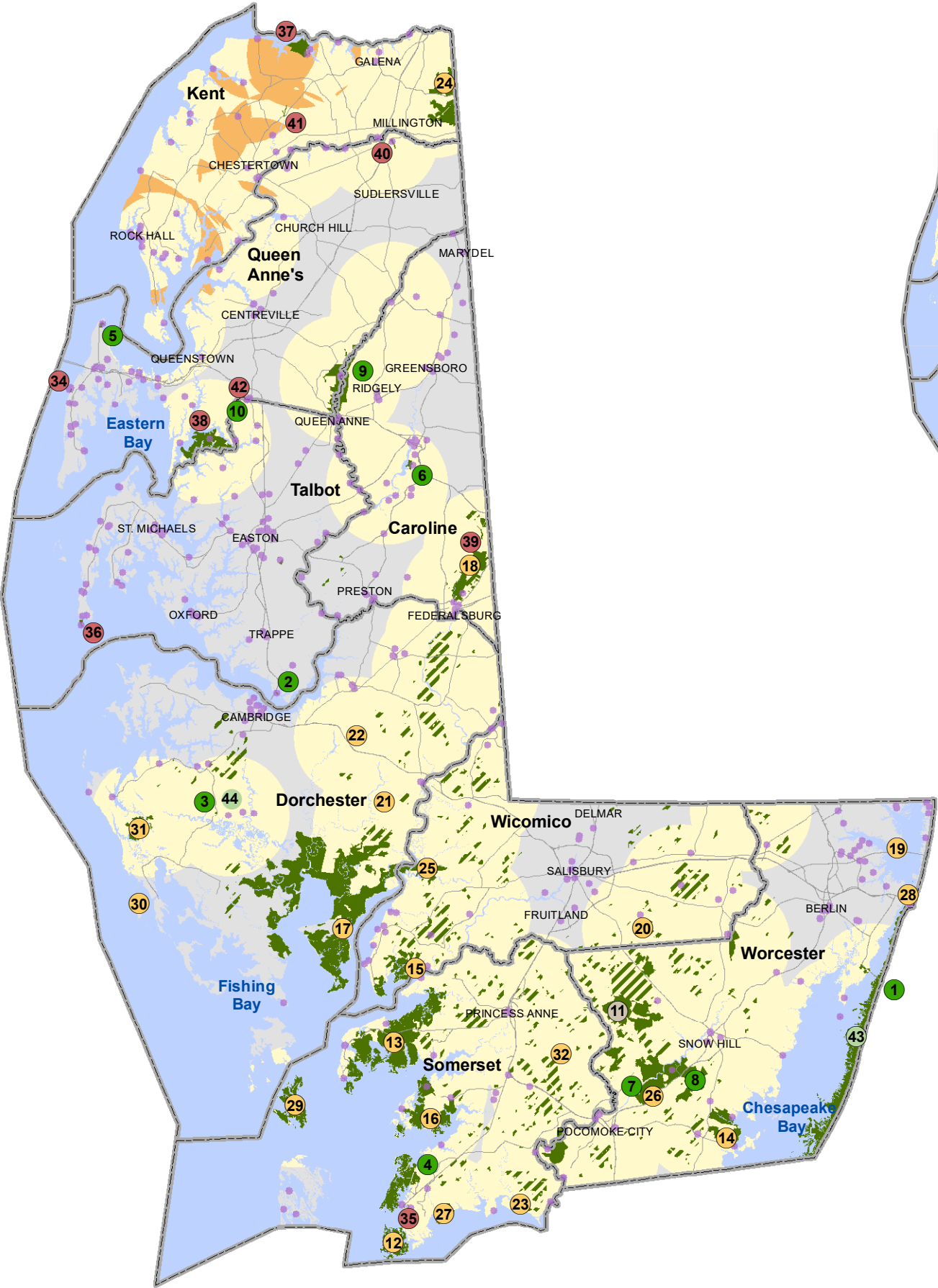
Legend

- < 5
- 5 - 10
- > 10
- 0
- DNR or Federal Lands

Legend

- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in hunting.

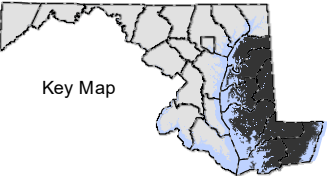


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area

0 5 10 15 20 Miles



Map 3D: 5-Mile Proximity to Hunting - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 **BELT WOODS NEA**
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 **ZEKIAH SWAMP NEA**
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 **INDIAN CREEK NRMA**
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILTOWN LANDING NRMA
- 41 **NANJEMOY NRMA**
- 42 PRIDE FINANCE NRMA
- 43 **SPICE CREEK NRMA**
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

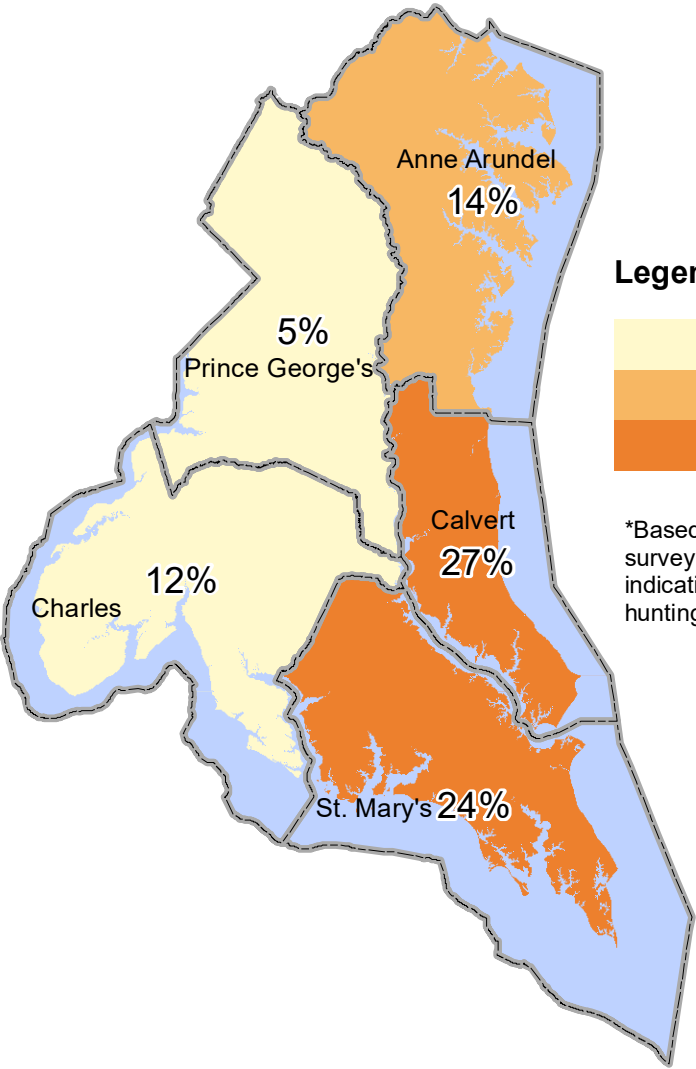
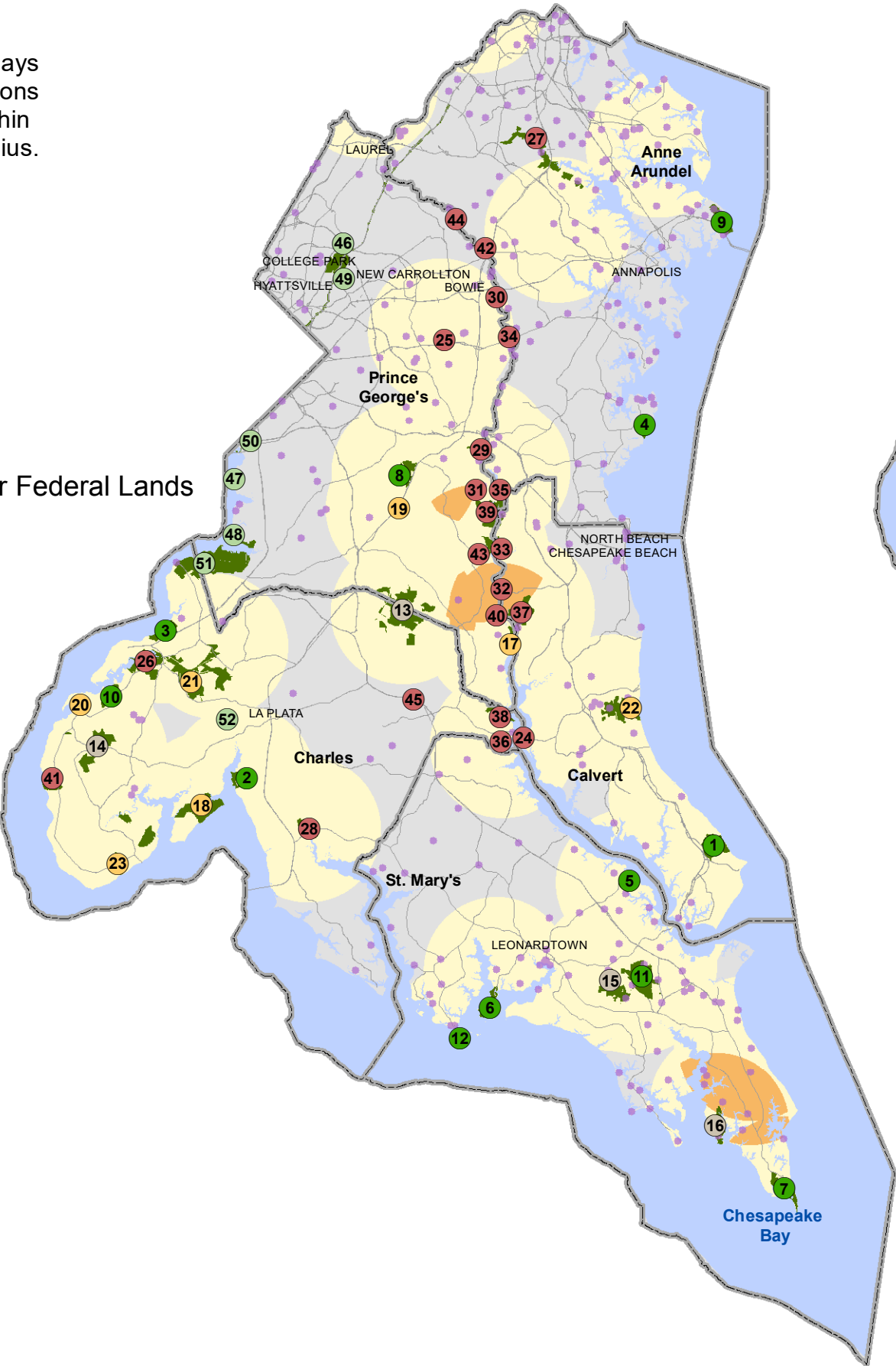
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with hunting within a 5-mile radius.

Legend

- 0
- < 5
- 5 -10
- > 10
- DNR or Federal Lands



Legend

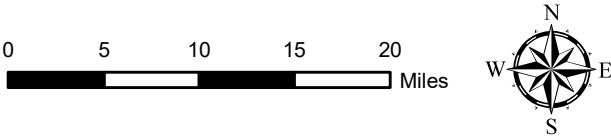
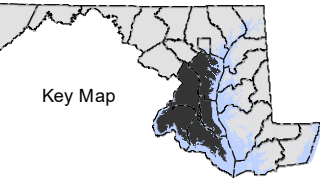
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in hunting.

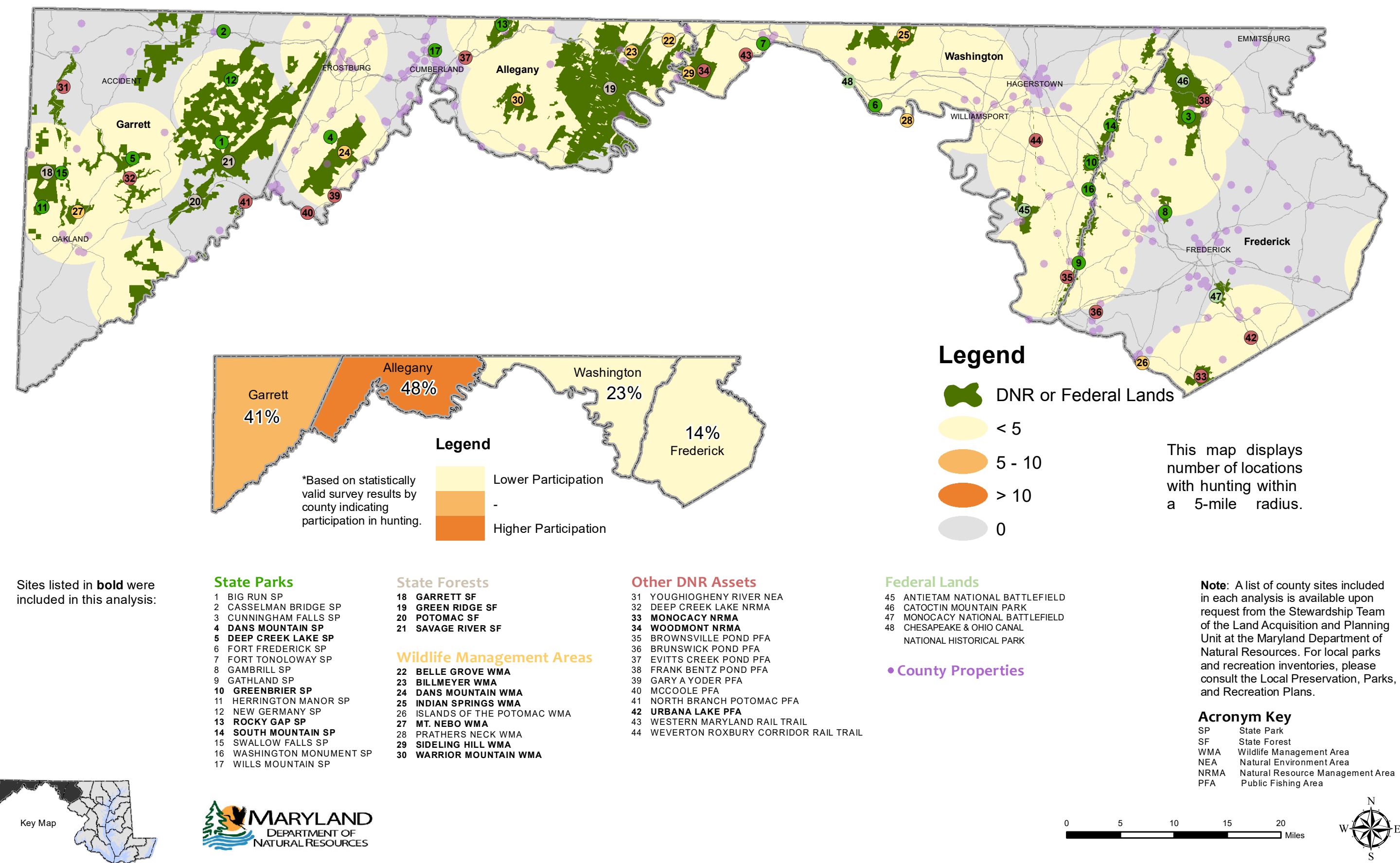
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4D: 5-Mile Proximity to Hunting - Western Region

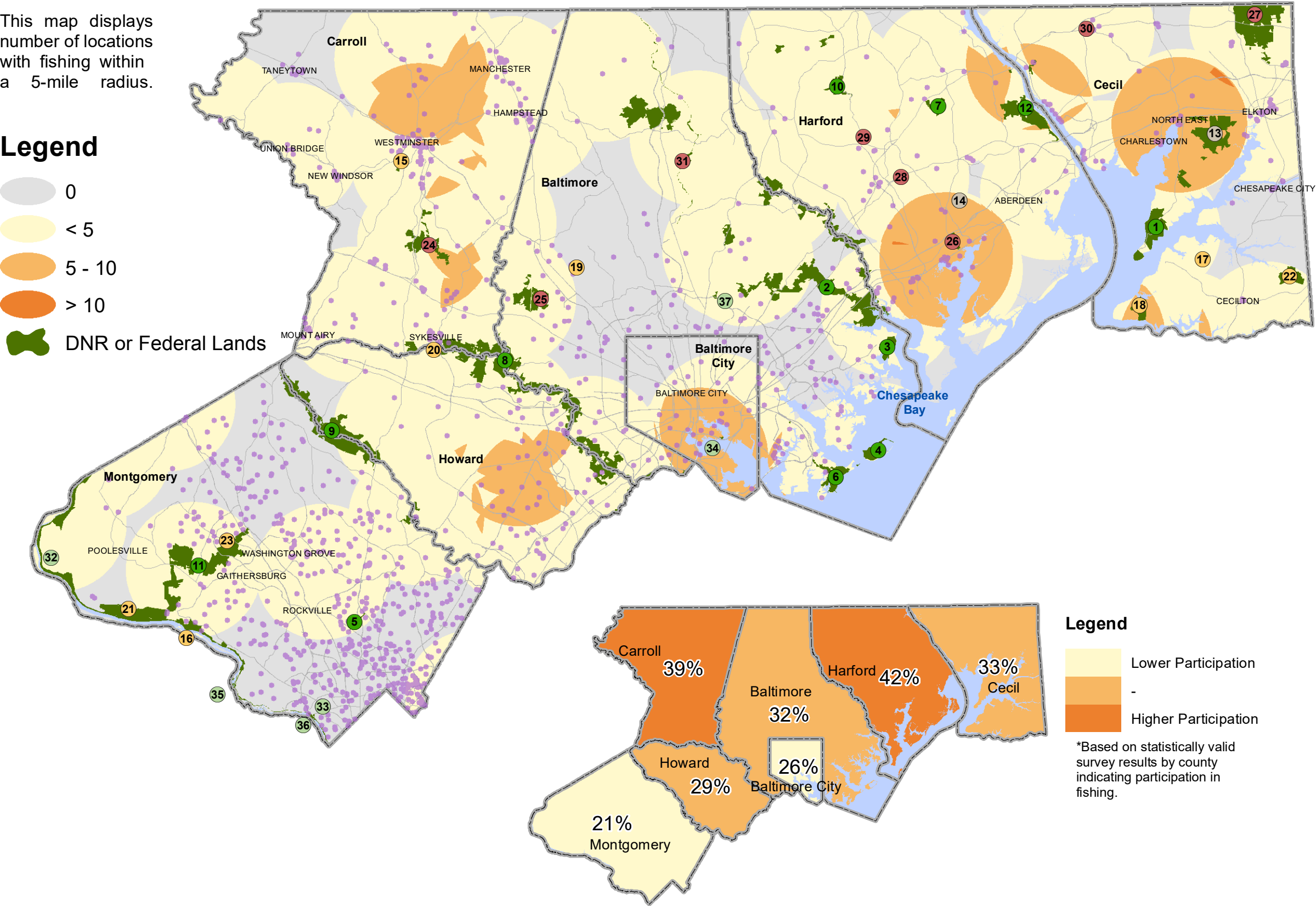


Map 1E: 5-Mile Proximity to Fishing - Central Region

This map displays number of locations with fishing within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



Sites listed in **bold** were included in this analysis:

- State Parks**
- 1 ELK NECK SP**
 - 2 GUNPOWDER FALLS SP**
 - 3 HAMMERMAN AREA**
 - 4 HART, MILLER AND PLEASURE ISLANDS SP**
 - 5 MATTHEW HENSON SP**
 - 6 NORTH POINT SP**
 - 7 PALMER SP**
 - 8 PATAPSCO VALLEY SP**
 - 9 PATUXENT RIVER SP**
 - 10 ROCKS SP**
 - 11 SENECA CREEK SP**
 - 12 SUSQUEHANNA SP**

- State Forests**
- 13 ELK NECK SF**
 - 14 STONEY DEMONSTRATION SF**

- Wildlife Management Areas**
- 15 AVONDALE WMA**
 - 16 DIERSEN WMA**
 - 17 EARLEVILLE WMA**
 - 18 GROVE FARM WMA**
 - 19 GWYNNBROOK WMA**
 - 20 HUGG-THOMAS WMA**
 - 21 MCKEE BESHES WMA**
 - 22 OLD BOHEMIA WMA**
 - 23 STRIDER WMA**

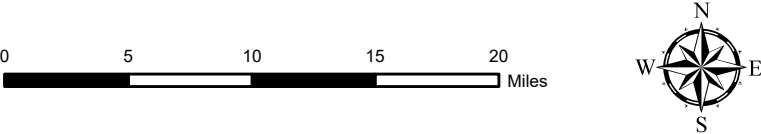
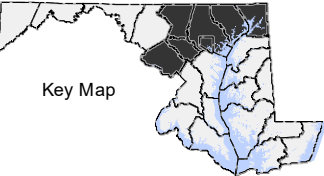
- Other DNR Assets**
- 24 MORGAN RUN NEA**
 - 25 SOLDIERS DELIGHT NEA**
 - 26 BUSH DECLARATION NRMA**
 - 27 FAIR HILL NRMA**
 - 28 BYNUM RUN POND PFA**
 - 29 FOREST HILL LAKE PFA**
 - 30 RISING SUN POND PFA**
 - 31 TORREY C BROWN RAIL TRAIL**

- Federal Lands**
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK**
 - 33 CLARA BARTON NATIONAL HISTORIC SITE**
 - 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE**
 - 35 GEORGE WASHINGTON MEMORIAL PARKWAY**
 - 36 GLEN ECHO PARK**
 - 37 HAMPTON NATIONAL HISTORIC SITE**

County/ Baltimore City Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

- Acronym Key**
- SP State Park
 - SF State Forest
 - WMA Wildlife Management Area
 - NEA Natural Environment Area
 - NRMA Natural Resource Management Area
 - PFA Public Fishing Area



Map 2E: 5-Mile Proximity to Fishing - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 HARRIET TUBMAN SP
- 4 JANES ISLAND SP
- 5 LOVE POINT SP
- 6 MARTINAK SP
- 7 MILBURN LANDING AREA
- 8 SHAD LANDING AREA
- 9 TUCKAHOE SP
- 10 WYE OAK SP

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 DEAL ISLAND WMA
- 14 E.A. VAUGHN WMA
- 15 ELLIS BAY WMA
- 16 FAIRMOUNT WMA
- 17 FISHING BAY WMA
- 18 IDYLVILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with fishing within a 5-mile radius.

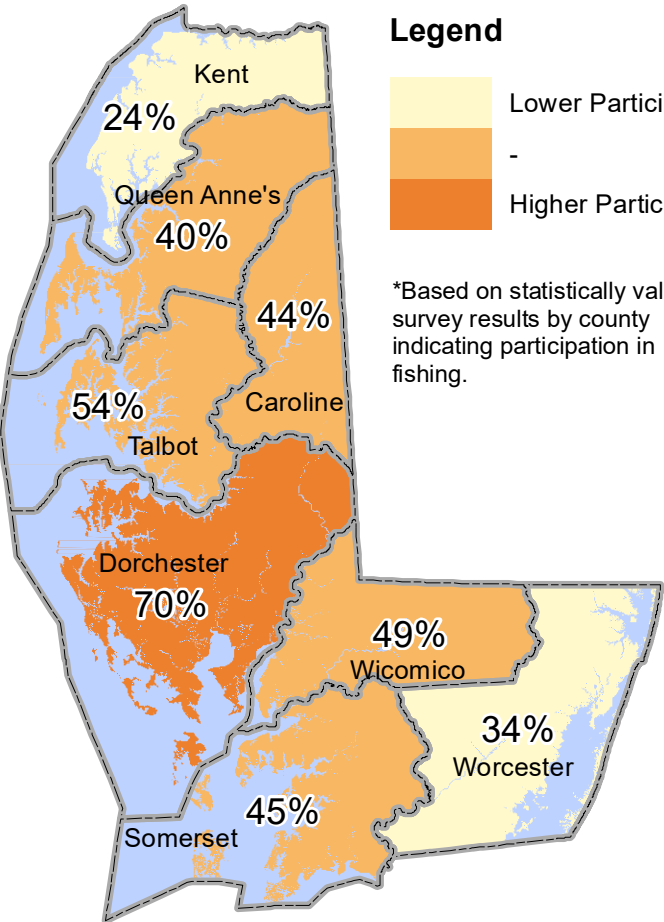
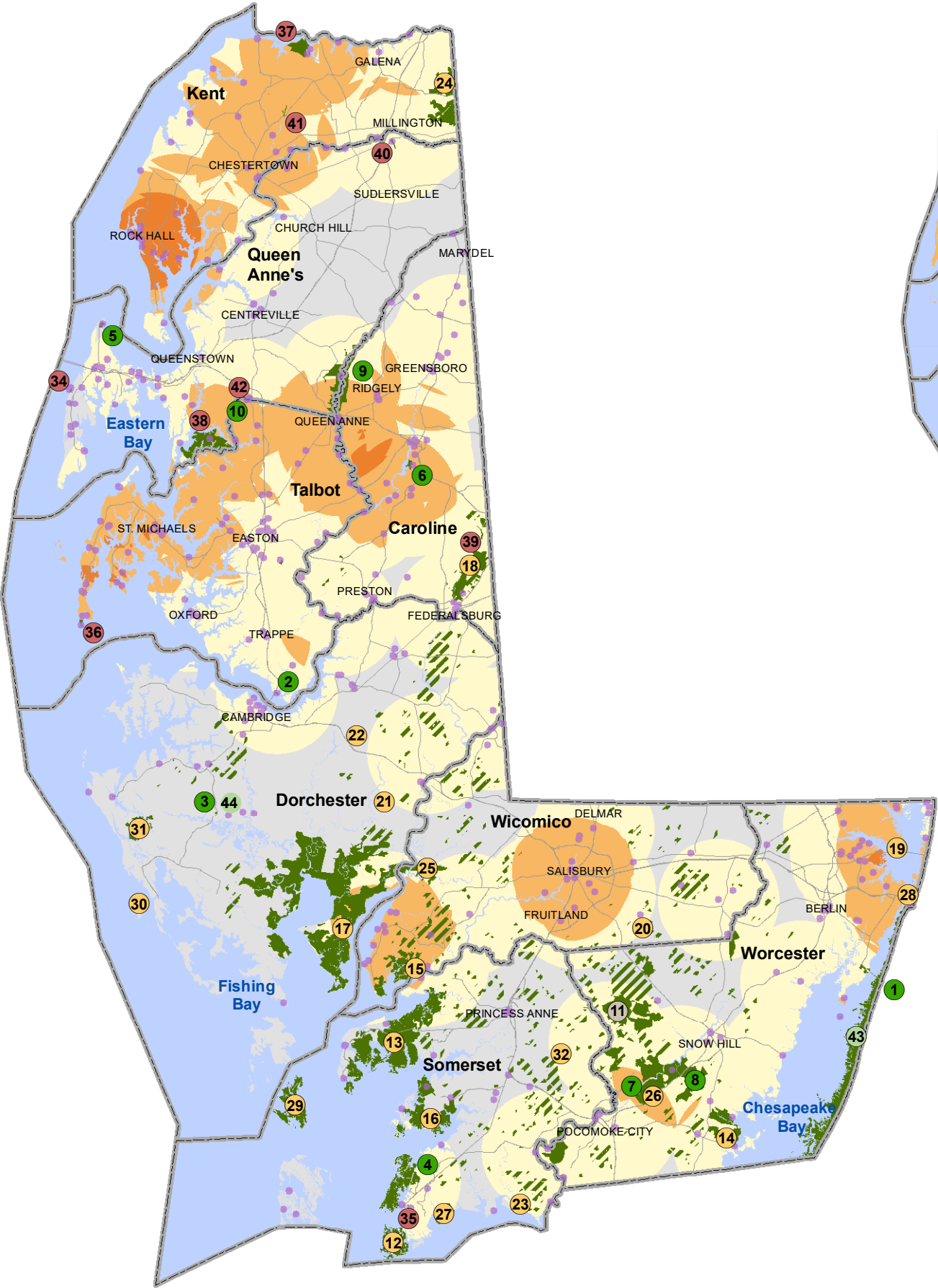
Legend

- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands

Legend

- Lower Participation
-
- Higher Participation

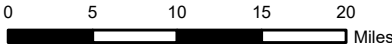
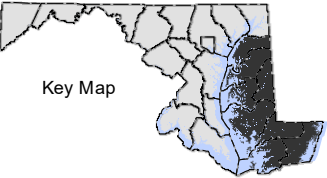
*Based on statistically valid survey results by county indicating participation in fishing.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3E: 5-Mile Proximity to Fishing - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

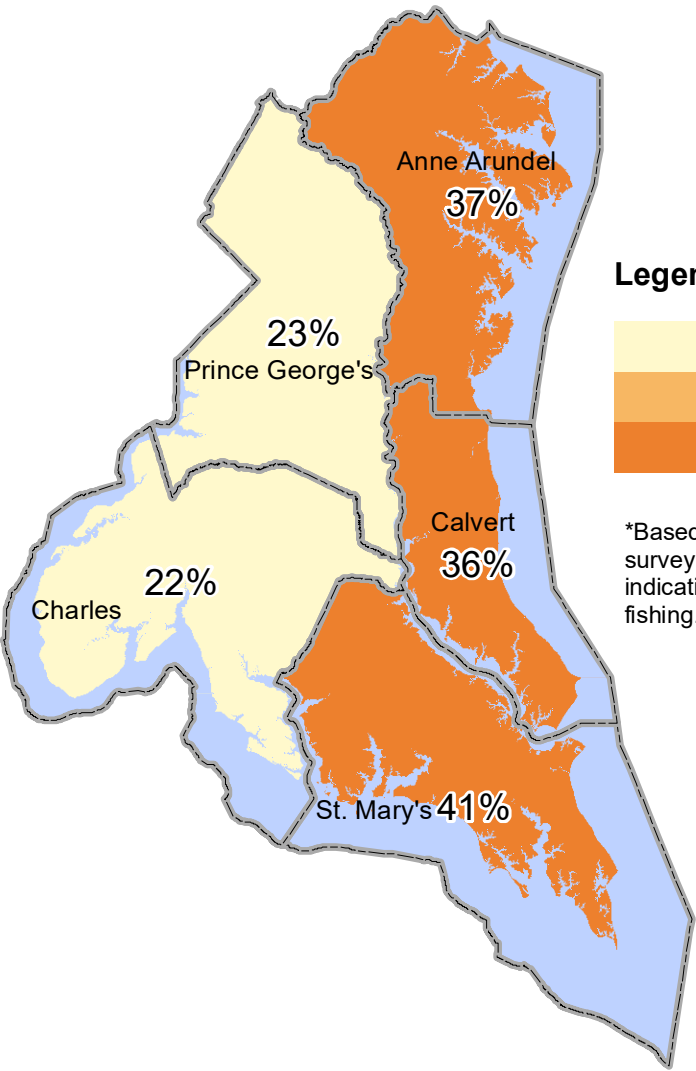
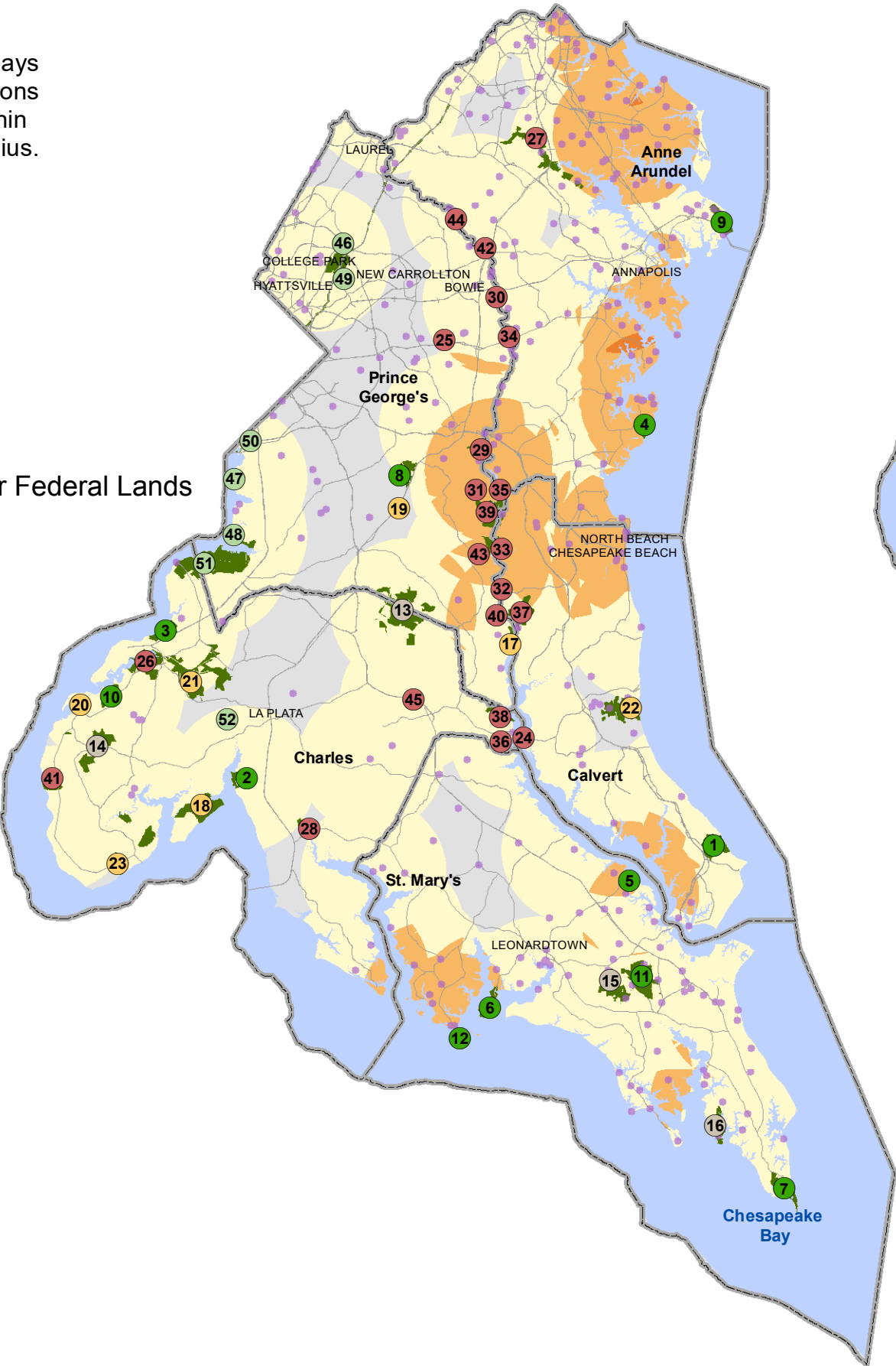
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with fishing within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



Legend

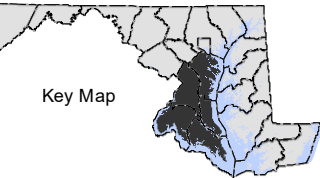
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in fishing.

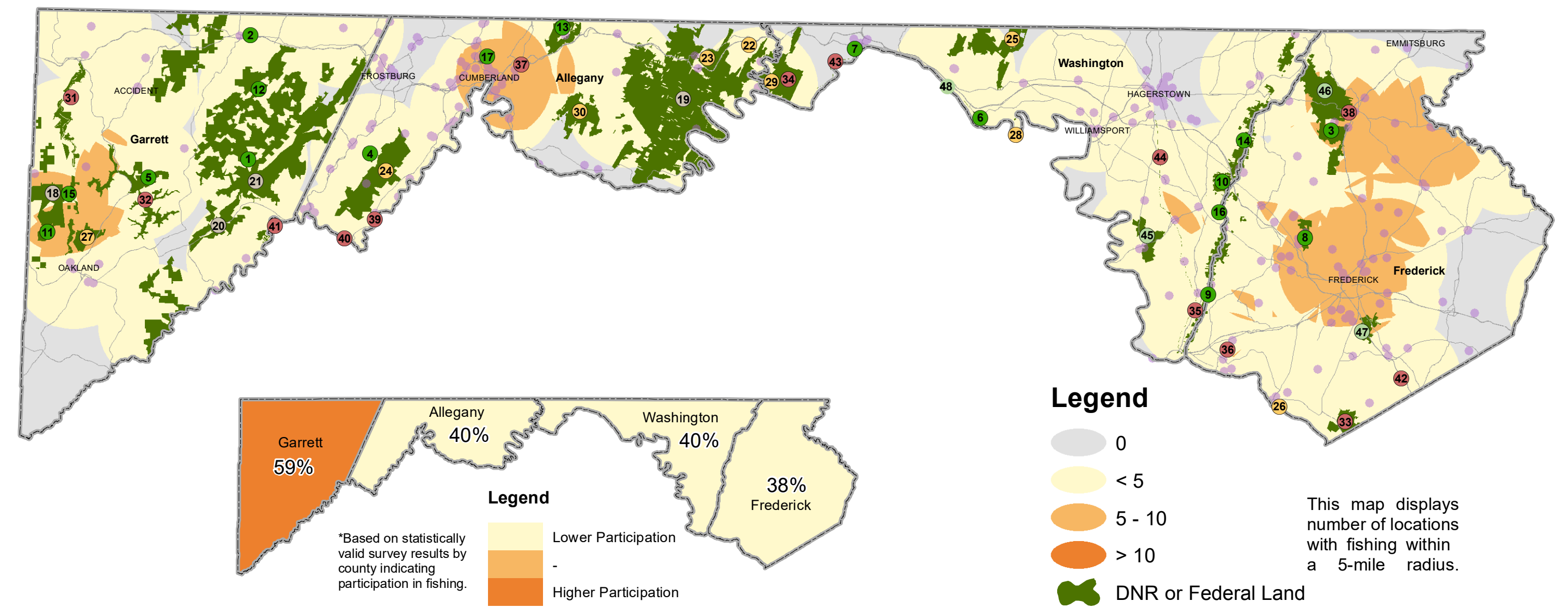
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4E: 5-Mile Proximity to Fishing - Western Region



Sites listed in **bold** were included in this analysis:

State Parks

- 1 BIG RUN SP
- 2 CASSELMAN BRIDGE SP
- 3 CUNNINGHAM FALLS SP
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 GAMBRILL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 GREEN RIDGE SF
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 INDIAN SPRINGS WMA
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 YOUGHIOGHENY RIVER NEA
- 32 DEEP CREEK LAKE NRMA
- 33 MONOCACY NRMA
- 34 WOODMONT NRMA
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 WESTERN MARYLAND RAIL TRAIL
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

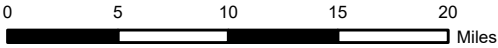
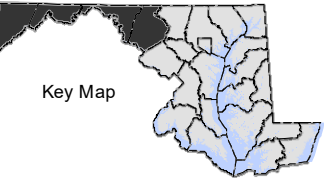
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

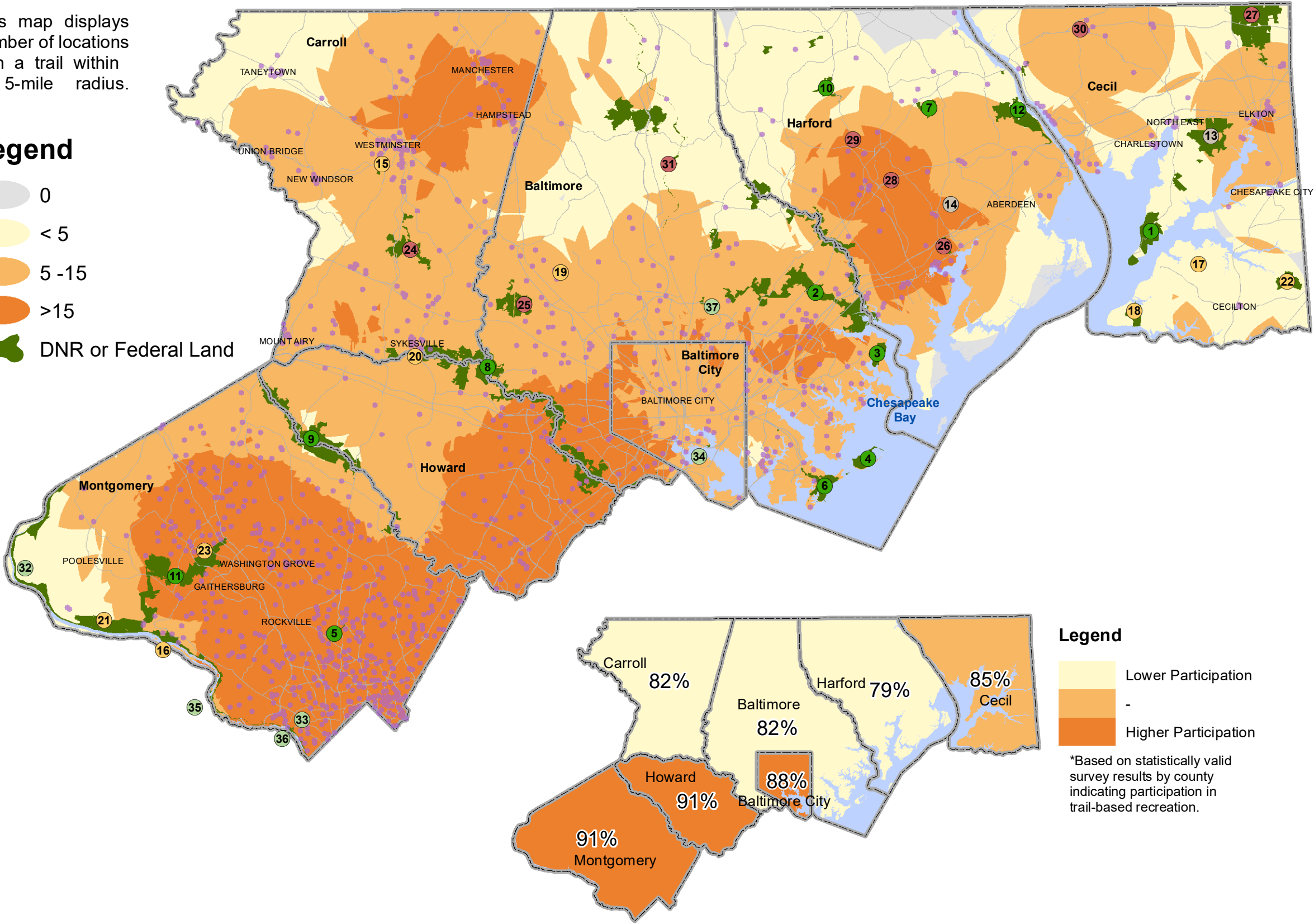
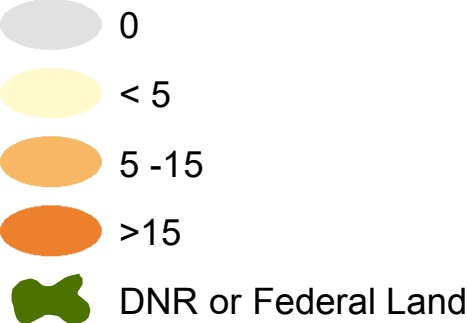
- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 1F: 5-Mile Proximity to Trails - Central Region

This map displays number of locations with a trail within a 5-mile radius.

Legend



Sites listed in **bold** were included in this analysis:

- State Parks**
- 1 ELK NECK SP
 - 2 GUNPOWDER FALLS SP
 - 3 HAMMERMAN AREA
 - 4 HART, MILLER AND PLEASURE ISLANDS SP
 - 5 MATTHEW HENSON SP
 - 6 NORTH POINT SP
 - 7 PALMER SP
 - 8 PATAPSCO VALLEY SP
 - 9 PATUXENT RIVER SP
 - 10 ROCKS SP
 - 11 SENECA CREEK SP
 - 12 SUSQUEHANNA SP

- State Forests**
- 13 ELK NECK SF
 - 14 STONEY DEMONSTRATION SF

- Wildlife Management Areas**
- 15 AVONDALE WMA
 - 16 DIERRSEN WMA
 - 17 EARLEVILLE WMA
 - 18 GROVE FARM WMA
 - 19 GWYNNBROOK WMA
 - 20 HUGG-THOMAS WMA
 - 21 MCKEE BESHES WMA
 - 22 OLD BOHEMIA WMA
 - 23 STRIDER WMA

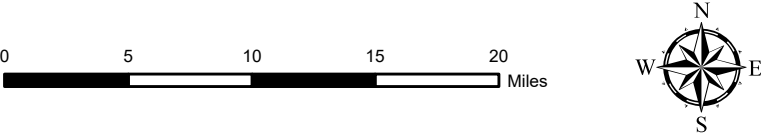
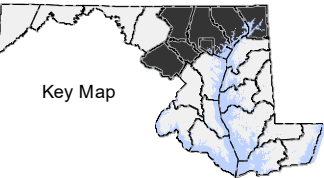
- Other DNR Assets**
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL

- Federal Lands**
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
 - 33 CLARA BARTON NATIONAL HISTORIC SITE
 - 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
 - 35 GEORGE WASHINGTON MEMORIAL PARKWAY
 - 36 GLEN ECHO PARK
 - 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

- Acronym Key**
- SP State Park
 - SF State Forest
 - WMA Wildlife Management Area
 - NEA Natural Environment Area
 - NRMA Natural Resource Management Area
 - PFA Public Fishing Area



Map 2F: 5-Mile Proximity to Trails - Eastern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 ASSATEAGUE SP
- 2 BILL BURTON SP
- 3 **HARRIET TUBMAN SP**
- 4 JANES ISLAND SP
- 5 LOVE POINT SP
- 6 **MARTINAK SP**
- 7 **MILBURN LANDING AREA**
- 8 **SHAD LANDING AREA**
- 9 **TUCKAHOE SP**
- 10 WYE OAK SP

State Forests

- 11 **POCOMOKE RIVER SF**

Wildlife Management Areas

- 12 CEDAR ISLAND WMA
- 13 **DEAL ISLAND WMA**
- 14 E.A. VAUGHN WMA
- 15 **ELLIS BAY WMA**
- 16 FAIRMOUNT WMA
- 17 **FISHING BAY WMA**
- 18 IDYLVILD WMA
- 19 ISLE OF WIGHT WMA
- 20 JOHNSON WMA
- 21 LECOMPTE WMA
- 22 LINKWOOD WMA
- 23 MARYLAND MARINE PROPERTIES WMA
- 24 MILLINGTON WMA
- 25 NANTICOKE RIVER WMA
- 26 POCOMOKE RIVER WMA
- 27 POCOMOKE SOUND WMA
- 28 SINEPUXENT BAY WMA
- 29 SOUTH MARSH ISLAND WMA
- 30 TAR BAY WMA
- 31 TAYLORS ISLAND WMA
- 32 WELLINGTON WMA

Other DNR Assets

- 33 **CHESAPEAKE FOREST LANDS***
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 **SASSAFRASS NRMA**
- 38 **WYE ISLAND NRMA**
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

This map displays number of locations with a trail within a 5-mile radius.

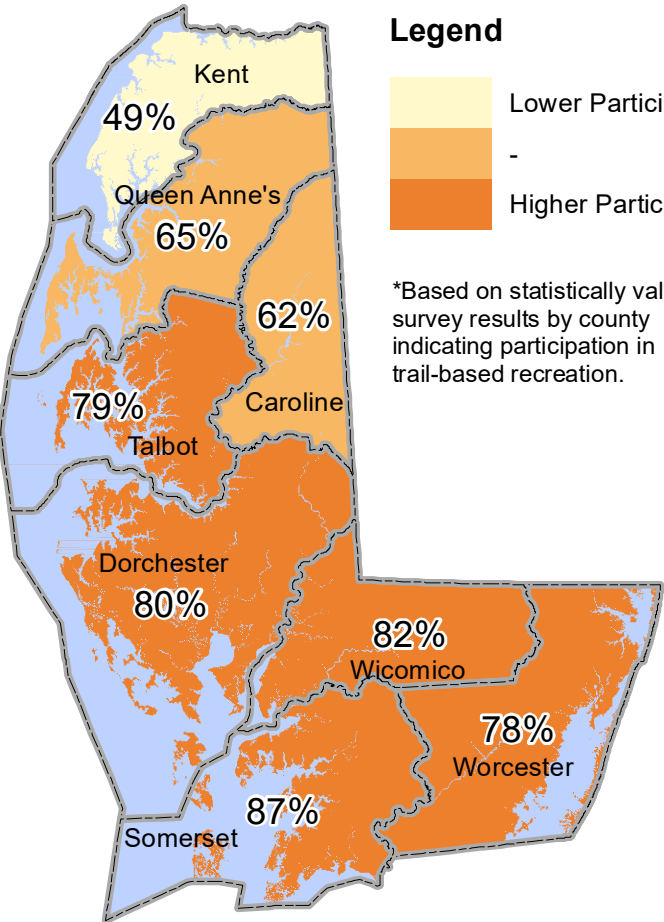
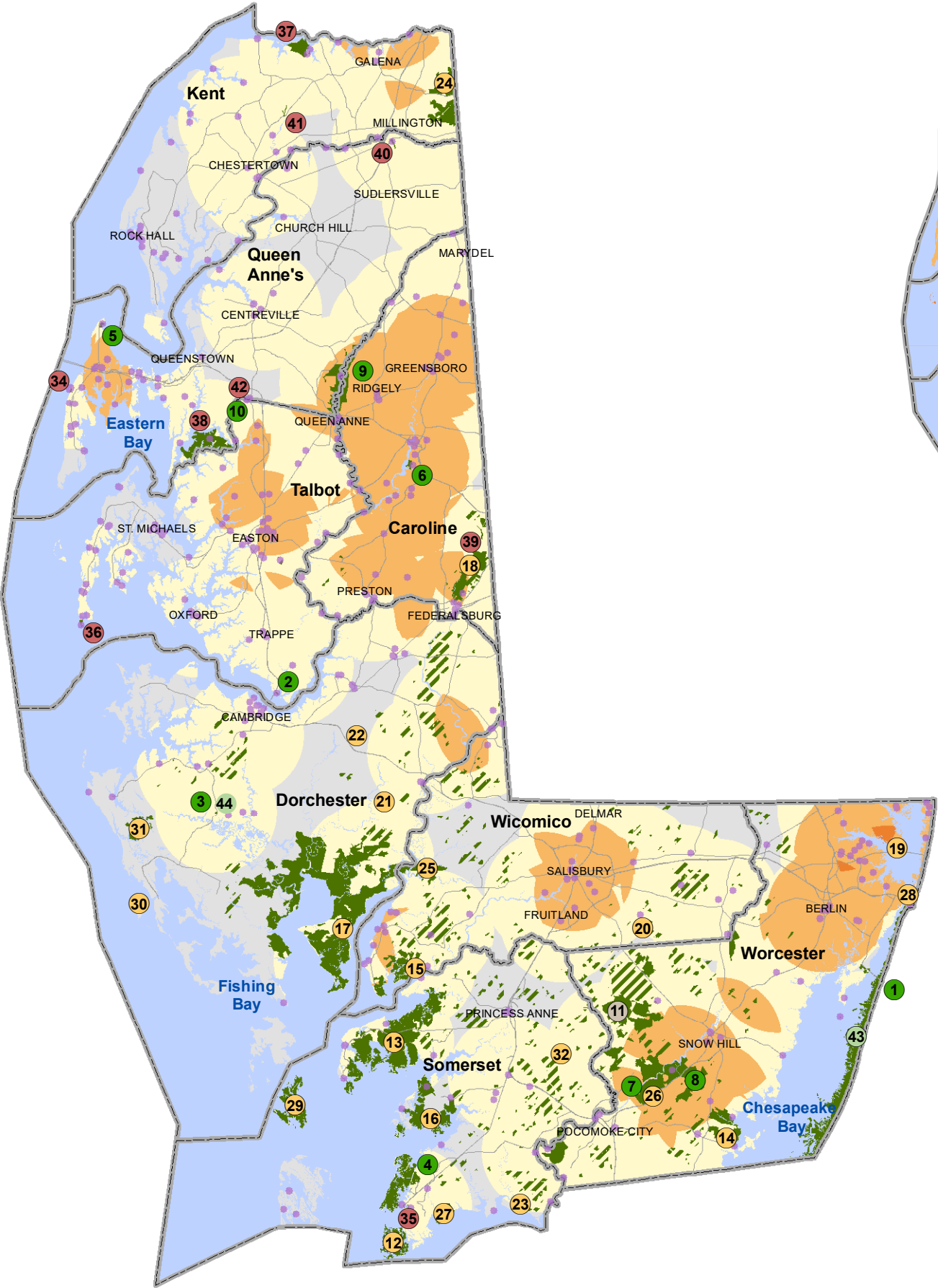
Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Land

Legend

- Lower Participation
-
- Higher Participation

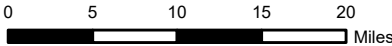
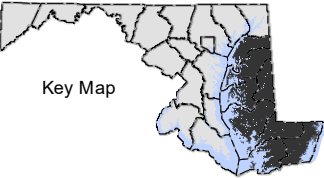
*Based on statistically valid survey results by county indicating participation in trail-based recreation.



Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 3F: 5-Mile Proximity to Trails - Southern Region

Sites listed in **bold** were included in this analysis:

State Parks

- 1 CALVERT CLIFFS SP
- 2 CHAPEL POINT SP
- 3 CHAPMAN SP
- 4 FRANKLIN POINT SP
- 5 GREENWELL SP
- 6 NEW TOWNE NECK SP
- 7 POINT LOOKOUT SP
- 8 ROSARYVILLE SP
- 9 SANDY POINT SP
- 10 SMALLWOOD SP
- 11 ST MARYS RIVER SP
- 12 ST. CLEMENTS ISLAND SP

State Forests

- 13 CEDARVILLE SF
- 14 DONCASTER DEMONSTRATION SF
- 15 SALEM SF
- 16 ST INIGOES SF

Wildlife Management Areas

- 17 BOWEN WMA
- 18 CEDAR POINT WMA
- 19 CHELTENHAM WMA
- 20 CHICAMUXEN WMA
- 21 MYRTLE GROVE WMA
- 22 PARKER CREEK WMA
- 23 RIVERSIDE WMA

Other DNR Assets

- 24 HALLOWING POINT BOAT RAMP
- 25 BELT WOODS NEA
- 26 MATTAWOMAN NEA
- 27 SEVERN RUN NEA
- 28 ZEKIAH SWAMP NEA
- 29 BILLINGSLEY NRMA
- 30 CHANEY NRMA
- 31 CROOM NRMA
- 32 FULL MILL BRANCH NRMA
- 33 HALL CREEK NRMA
- 34 HONEY BRANCH NRMA
- 35 HOUSE CREEK NRMA
- 36 INDIAN CREEK NRMA
- 37 KINGS LANDING NRMA
- 38 MAXWELL HALL NRMA
- 39 MERKLE WILDLIFE SANCTUARY NRMA
- 40 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

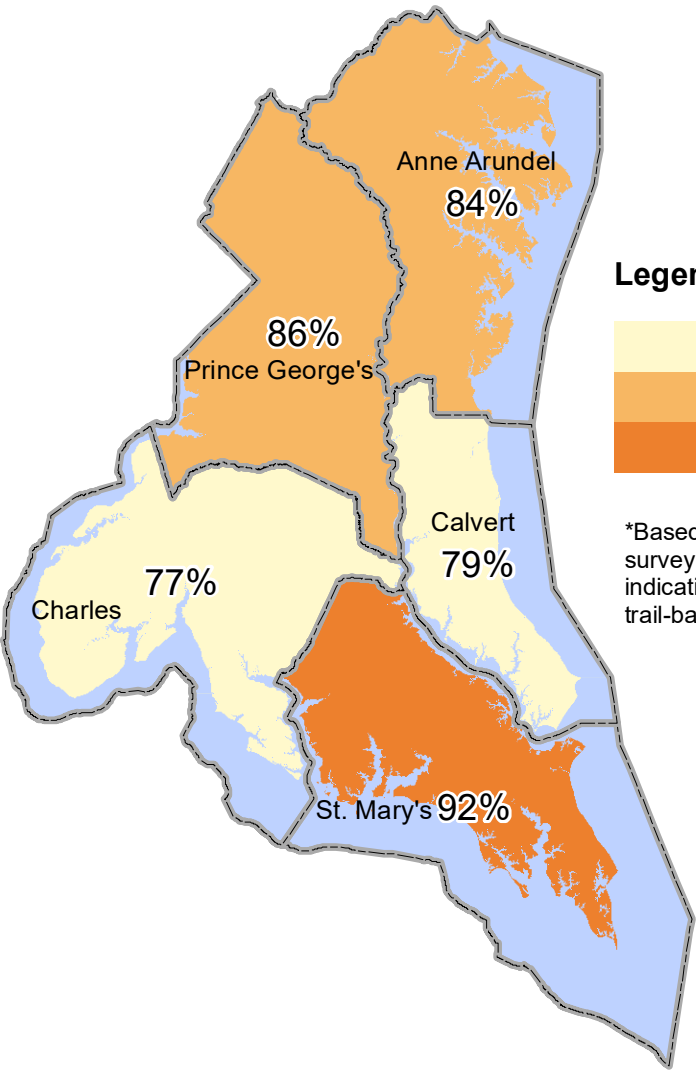
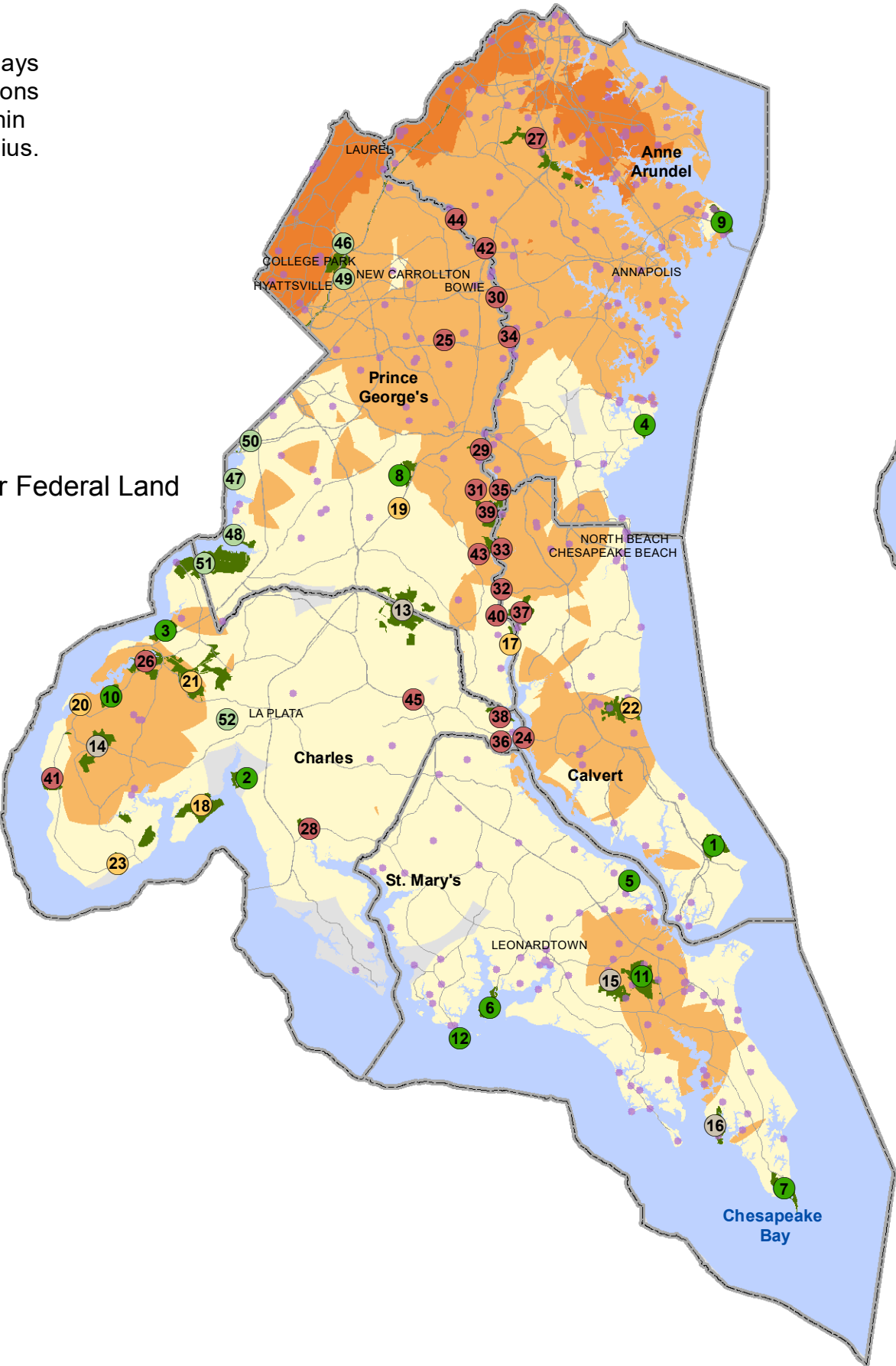
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

This map displays number of locations with a trail within a 5-mile radius.

Legend

- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Land



Legend

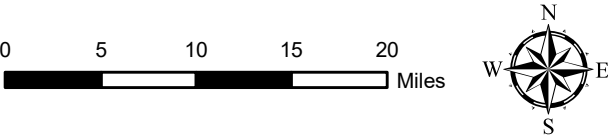
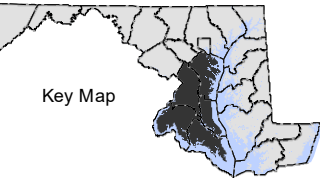
- Lower Participation
-
- Higher Participation

*Based on statistically valid survey results by county indicating participation in trail-based recreation.

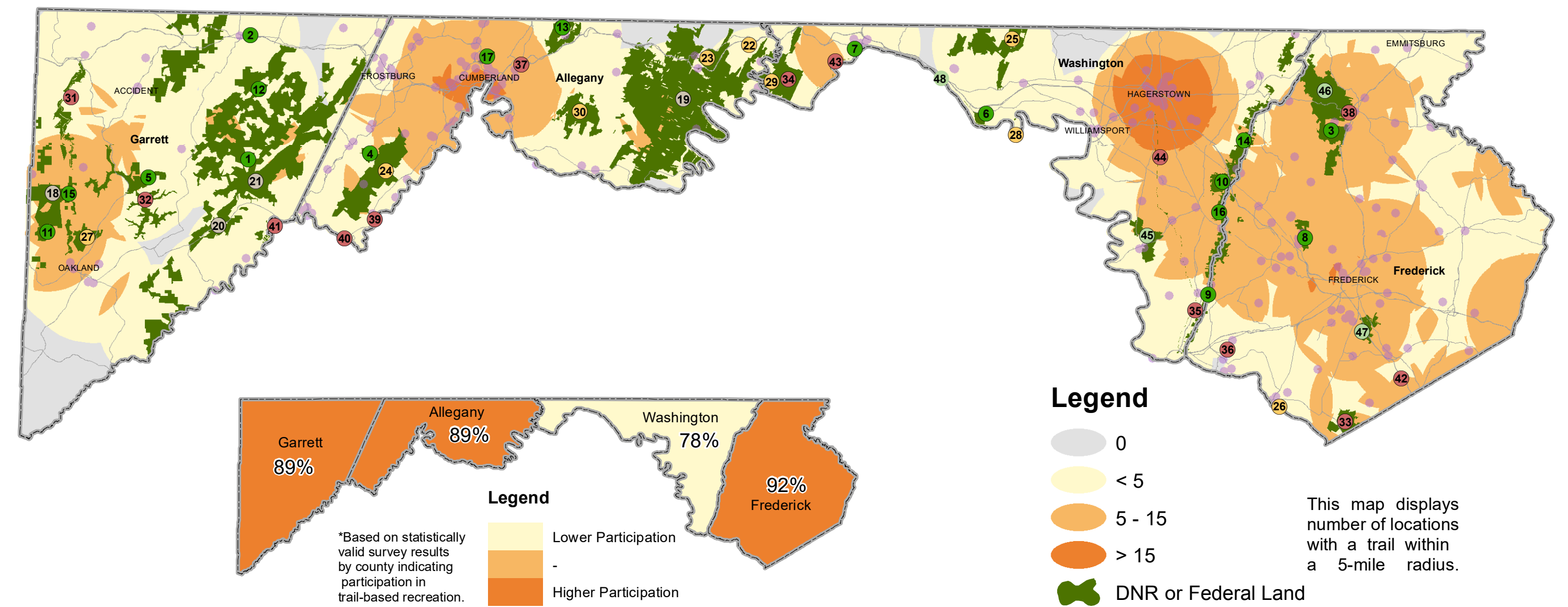
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation Plans.

Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



Map 4F: 5-Mile Proximity to Trails - Western Region



Sites listed in **bold** were included in this analysis:

State Parks

- 1 **BIG RUN SP**
- 2 CASSELMAN BRIDGE SP
- 3 **CUNNINGHAM FALLS SP**
- 4 DANS MOUNTAIN SP
- 5 DEEP CREEK LAKE SP
- 6 FORT FREDERICK SP
- 7 FORT TONOLOWAY SP
- 8 **GAMBRILL SP**
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 **WASHINGTON MONUMENT SP**
- 17 WILLS MOUNTAIN SP

State Forests

- 18 GARRETT SF
- 19 **GREEN RIDGE SF**
- 20 POTOMAC SF
- 21 SAVAGE RIVER SF

Wildlife Management Areas

- 22 BELLE GROVE WMA
- 23 BILLMEYER WMA
- 24 DANS MOUNTAIN WMA
- 25 **INDIAN SPRINGS WMA**
- 26 ISLANDS OF THE POTOMAC WMA
- 27 MT. NEBO WMA
- 28 PRATHERS NECK WMA
- 29 SIDELING HILL WMA
- 30 WARRIOR MOUNTAIN WMA

Other DNR Assets

- 31 **YOUGHIOGHENY RIVER NEA**
- 32 **DEEP CREEK LAKE NRMA**
- 33 **MONOCACY NRMA**
- 34 **WOODMONT NRMA**
- 35 BROWNSVILLE POND PFA
- 36 BRUNSWICK POND PFA
- 37 EVITTS CREEK POND PFA
- 38 FRANK BENTZ POND PFA
- 39 GARY A YODER PFA
- 40 MCCOOLE PFA
- 41 NORTH BRANCH POTOMAC PFA
- 42 URBANA LAKE PFA
- 43 **WESTERN MARYLAND RAIL TRAIL**
- 44 WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

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