

APPENDIX A: PROJECT GREEN CLASSROOMS ACCESS GOALS

PROJECT GREEN CLASSROOMS RECOMMENDATIONS

On June 8, 2017, Governor Larry Hogan signed a new [Executive Order](#)⁶³ 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



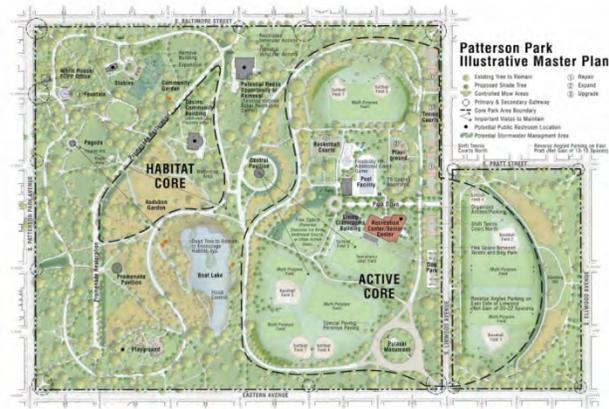
baybackpack.com
Sub Goal #4

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

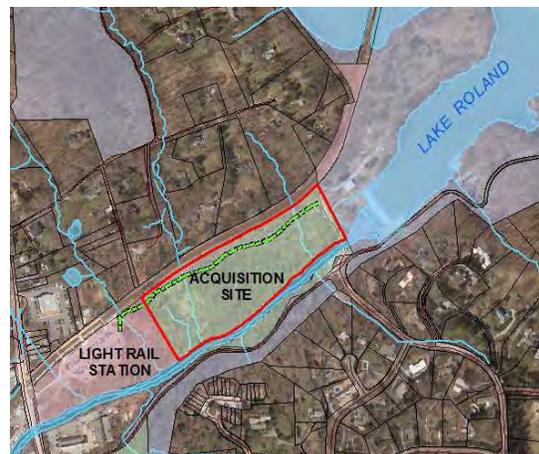


taimages.railstotrails.org

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.*”

Western Regional Park, Howard County MD-- kci.com



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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Maryland - Department of Natural Resources

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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.

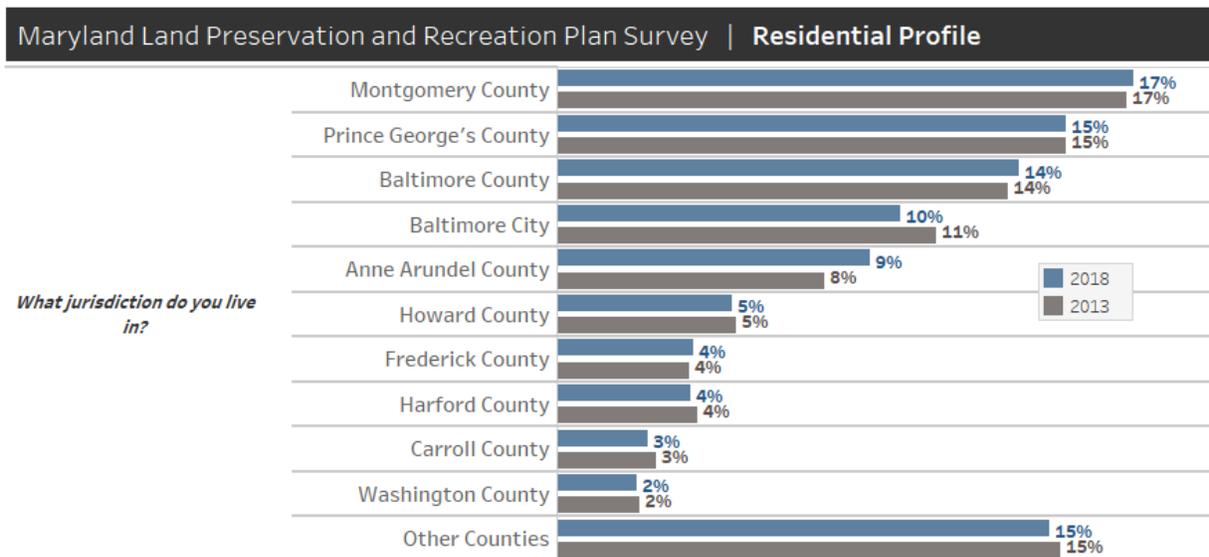
- The top two areas in which residents would like to see additions or improvements are trail-based recreation (e.g., hiking, biking, running, horseback riding, off-road vehicle use; selected by 34 percent of respondents as one of their top two priorities) and park outdoor activities (e.g., playgrounds, 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.

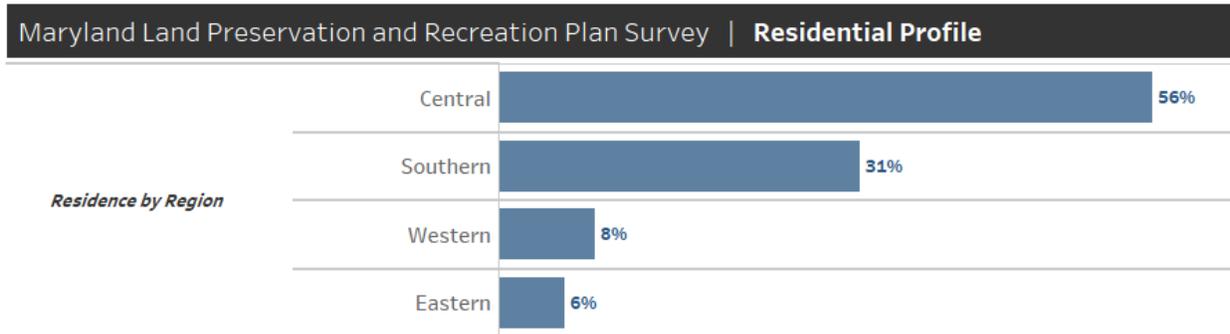
Figure 1



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

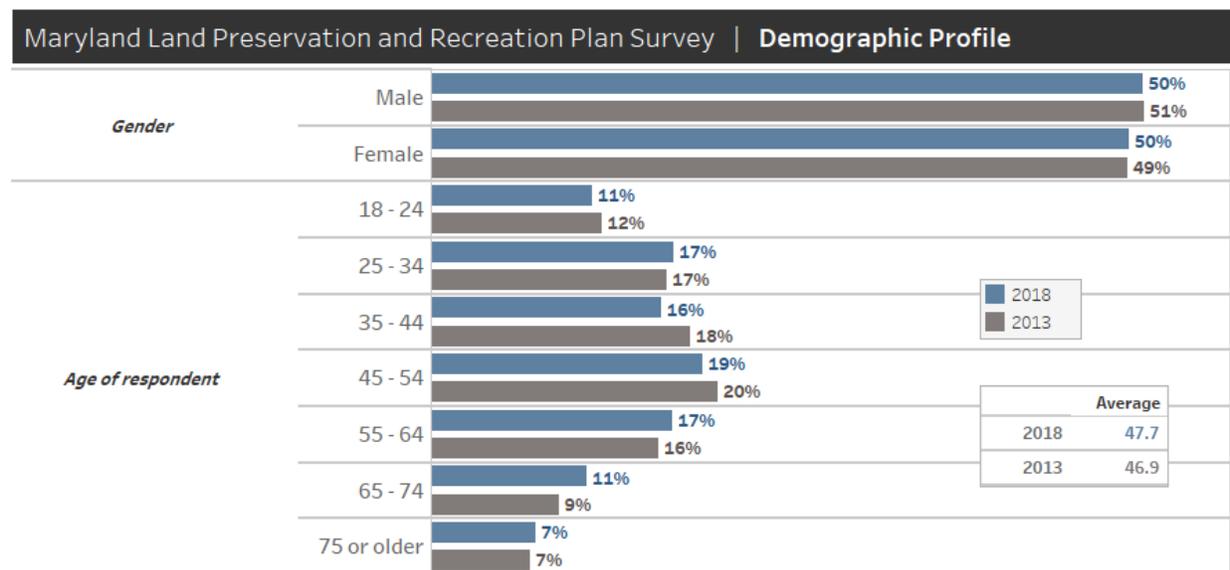
- The figure to follow shows share of respondents residing in each of the four regions of Maryland. As shown, most respondents live within either the Central (56 percent) or Southern (31 percent) Regions. Much smaller shares of respondents live in either the Western (8 percent) or Eastern (6 percent) region of the state.

Figure 2



- 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.

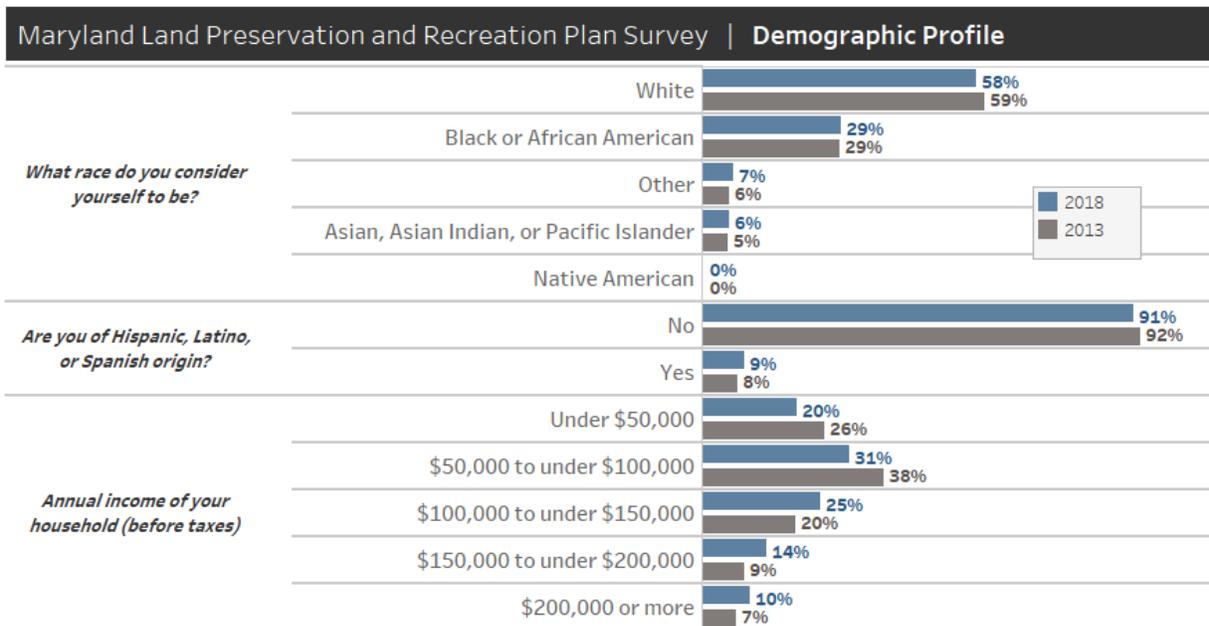
Figure 3



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

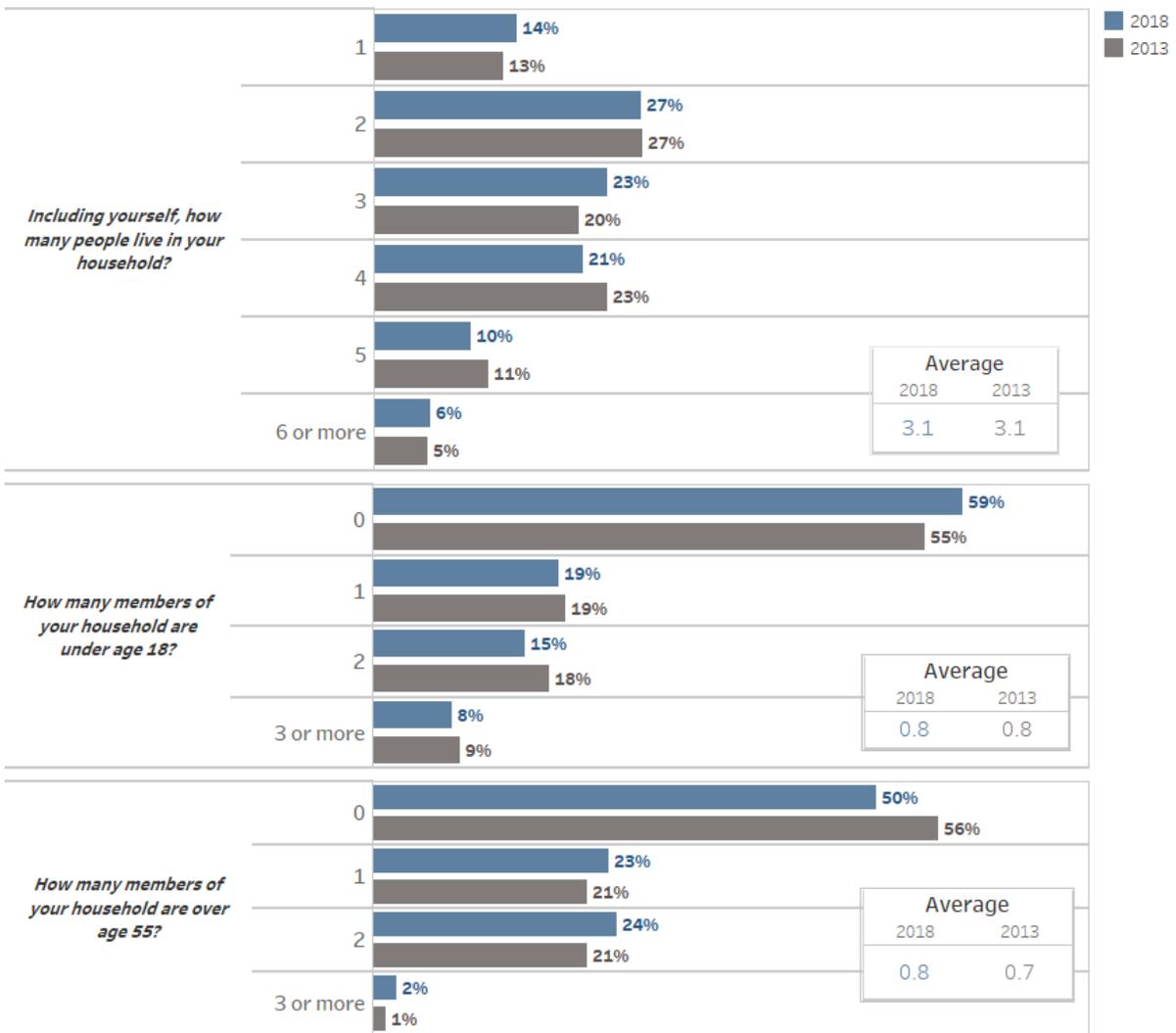


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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

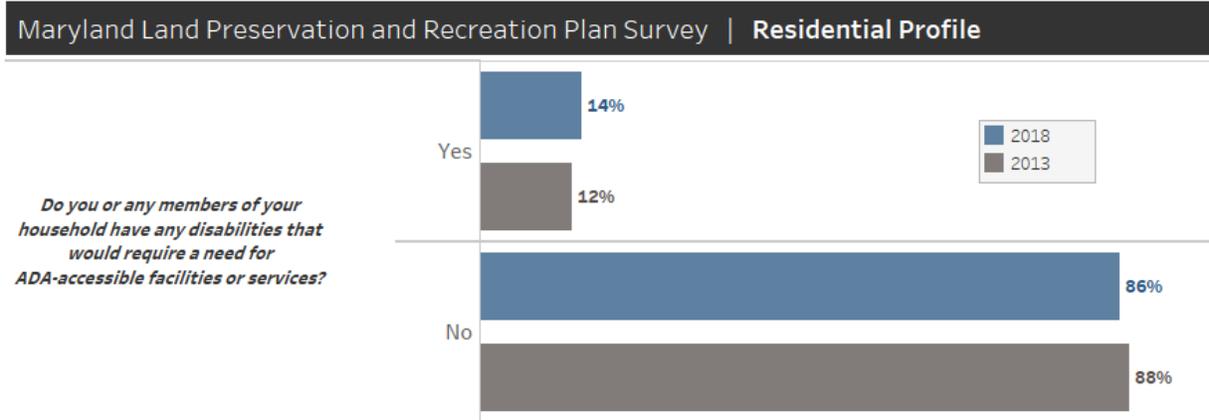
Maryland Land Preservation and Recreation Plan Survey | Residential Profile



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

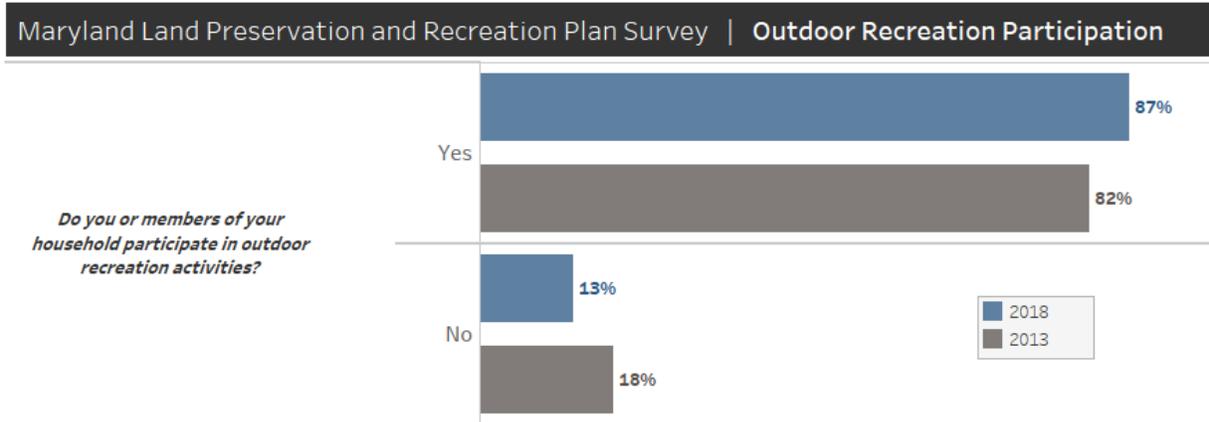


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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.

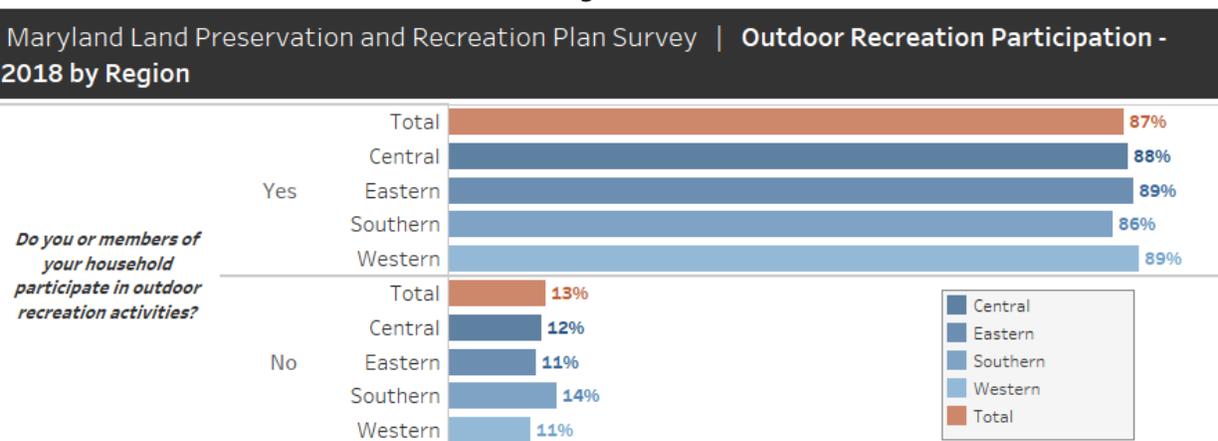
Figure 7



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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



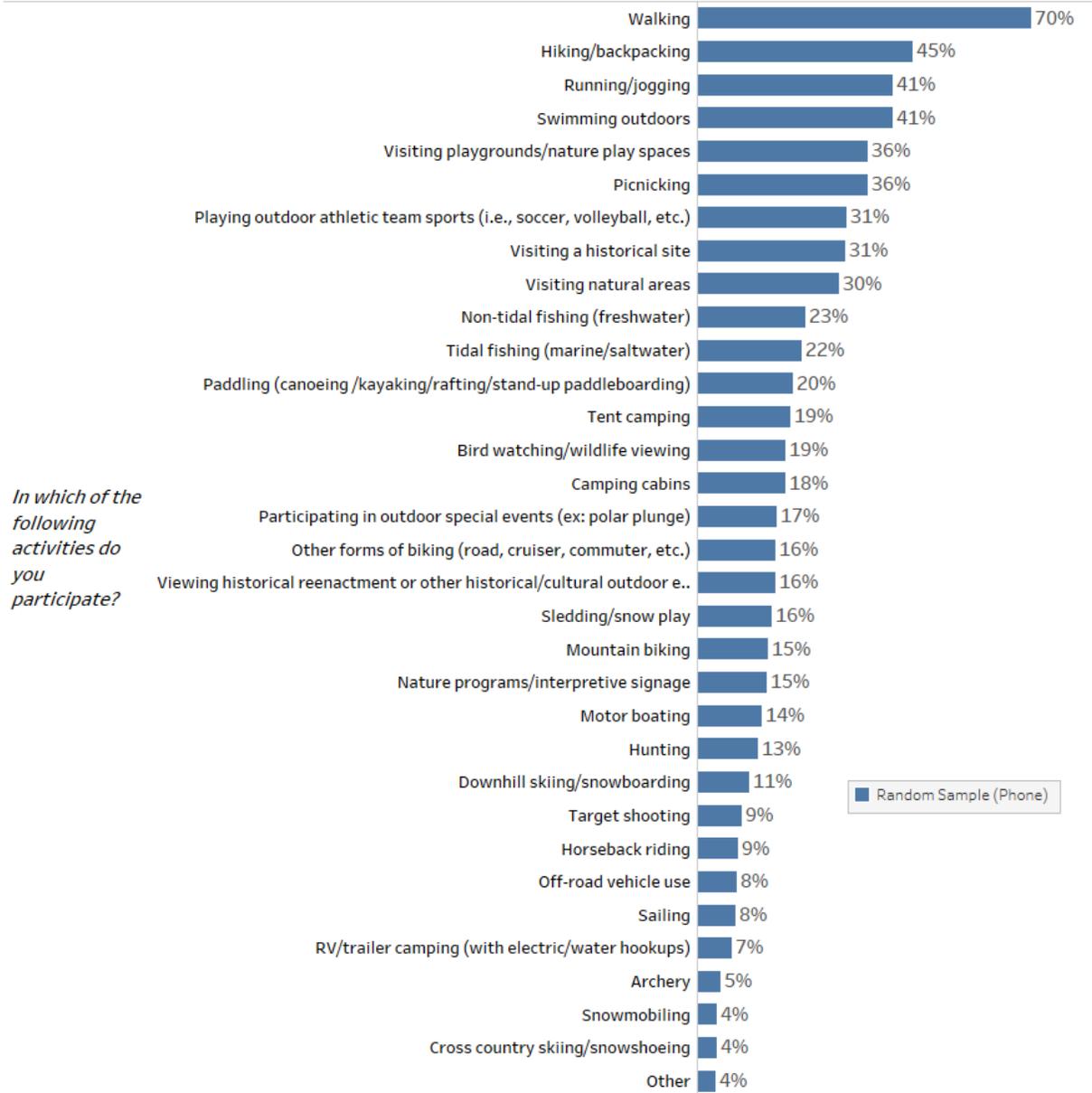
Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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

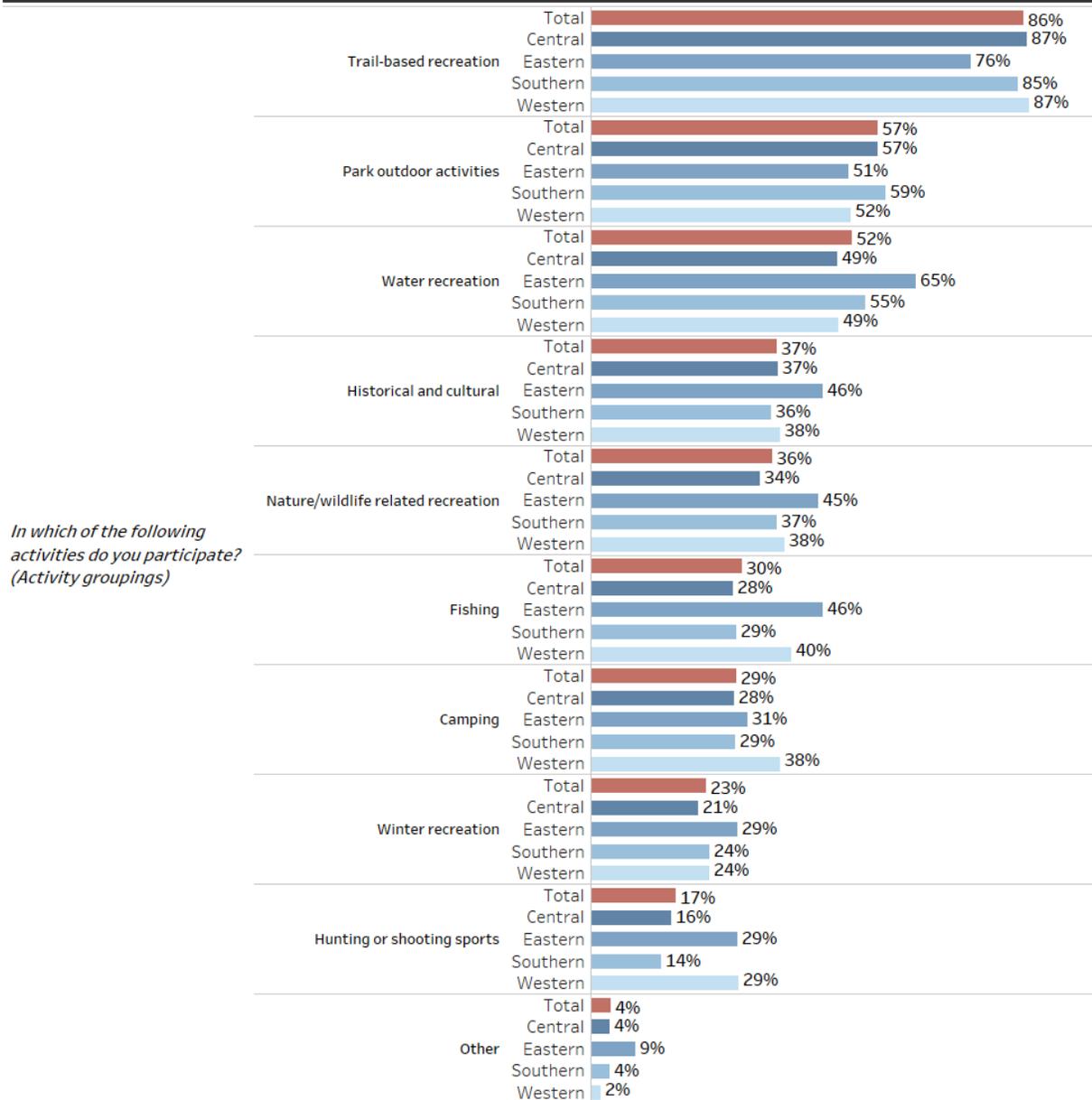
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018 Only



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 10

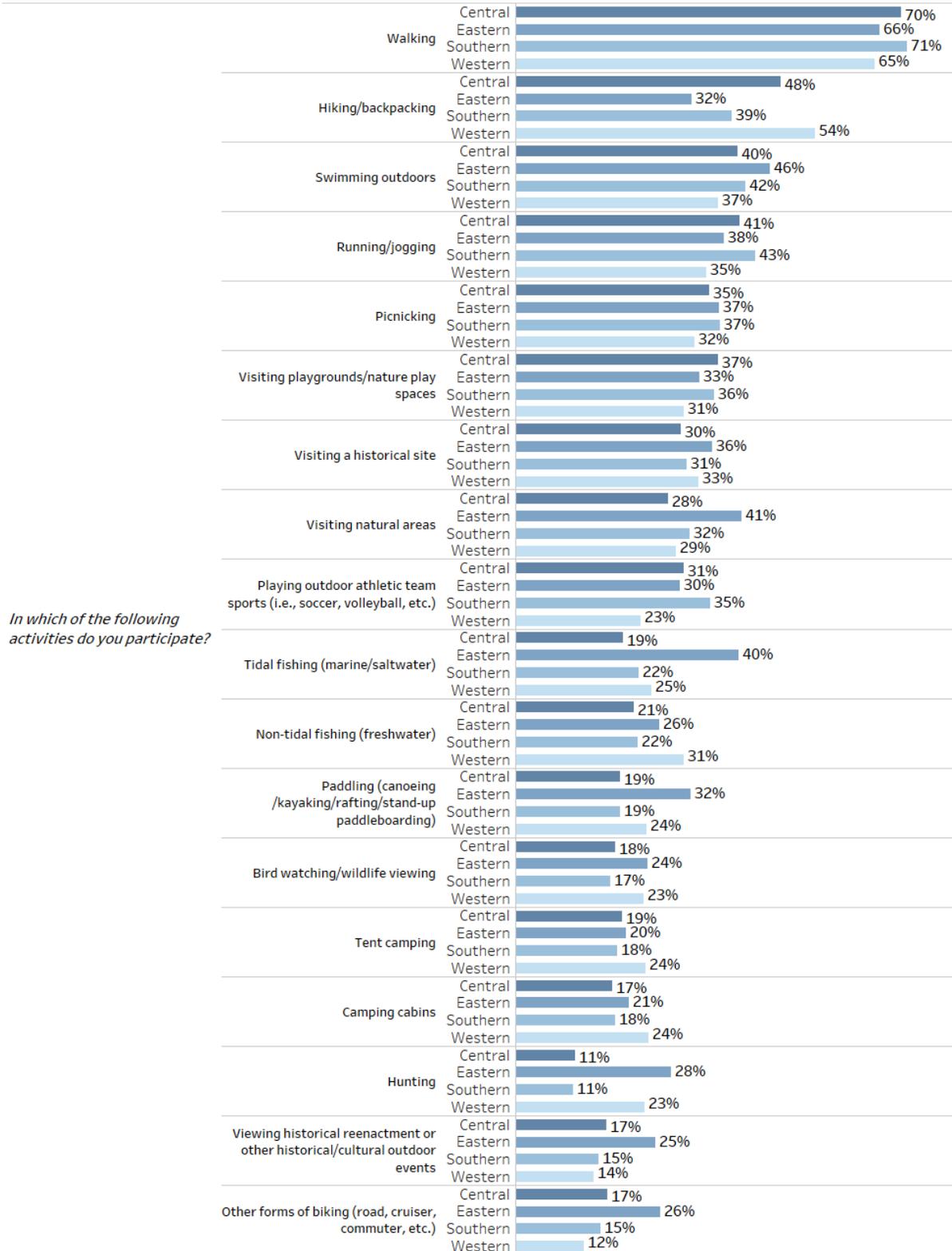
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Participation - 2018 by Region



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

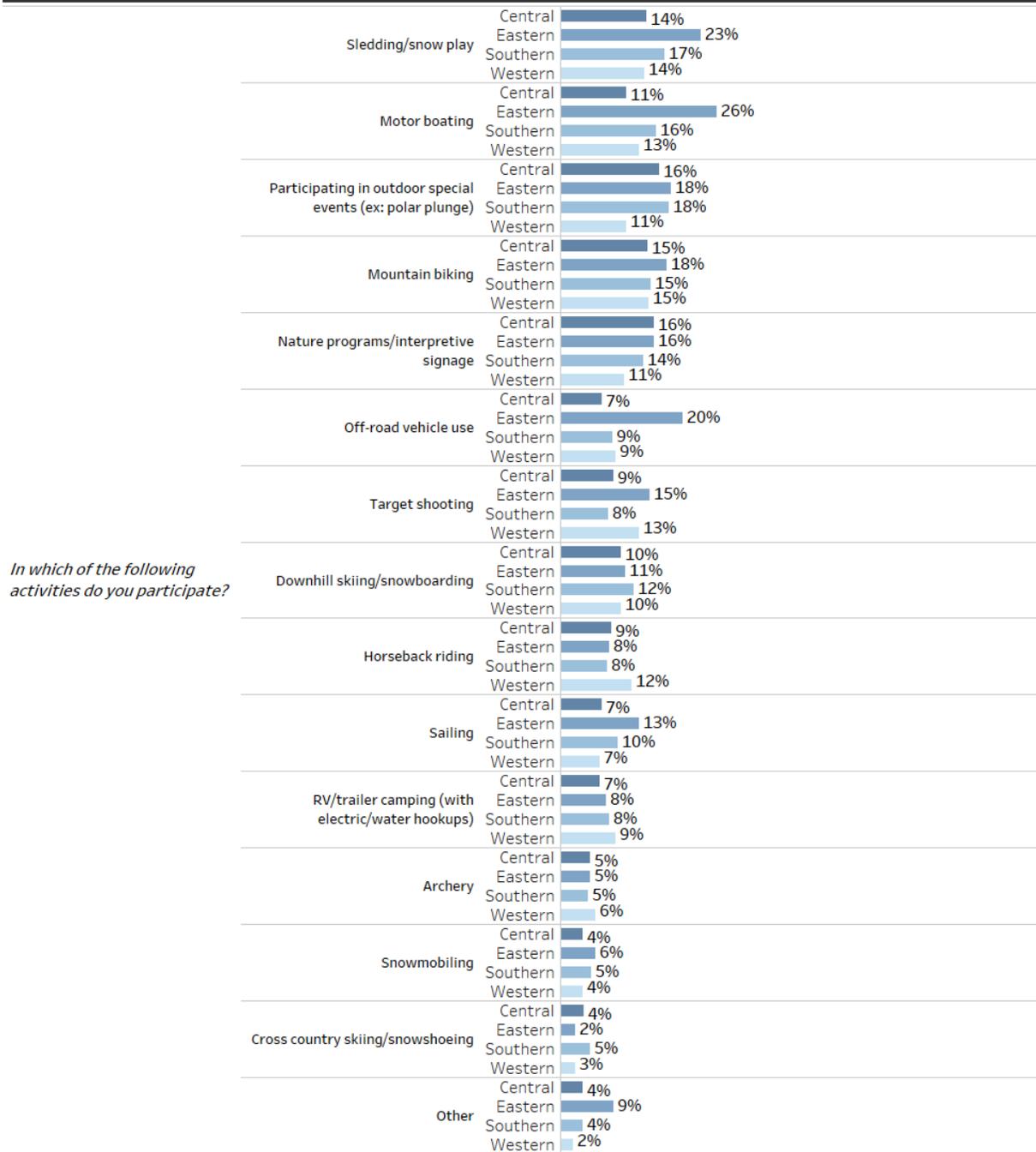


In which of the following activities do you participate?

Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 12

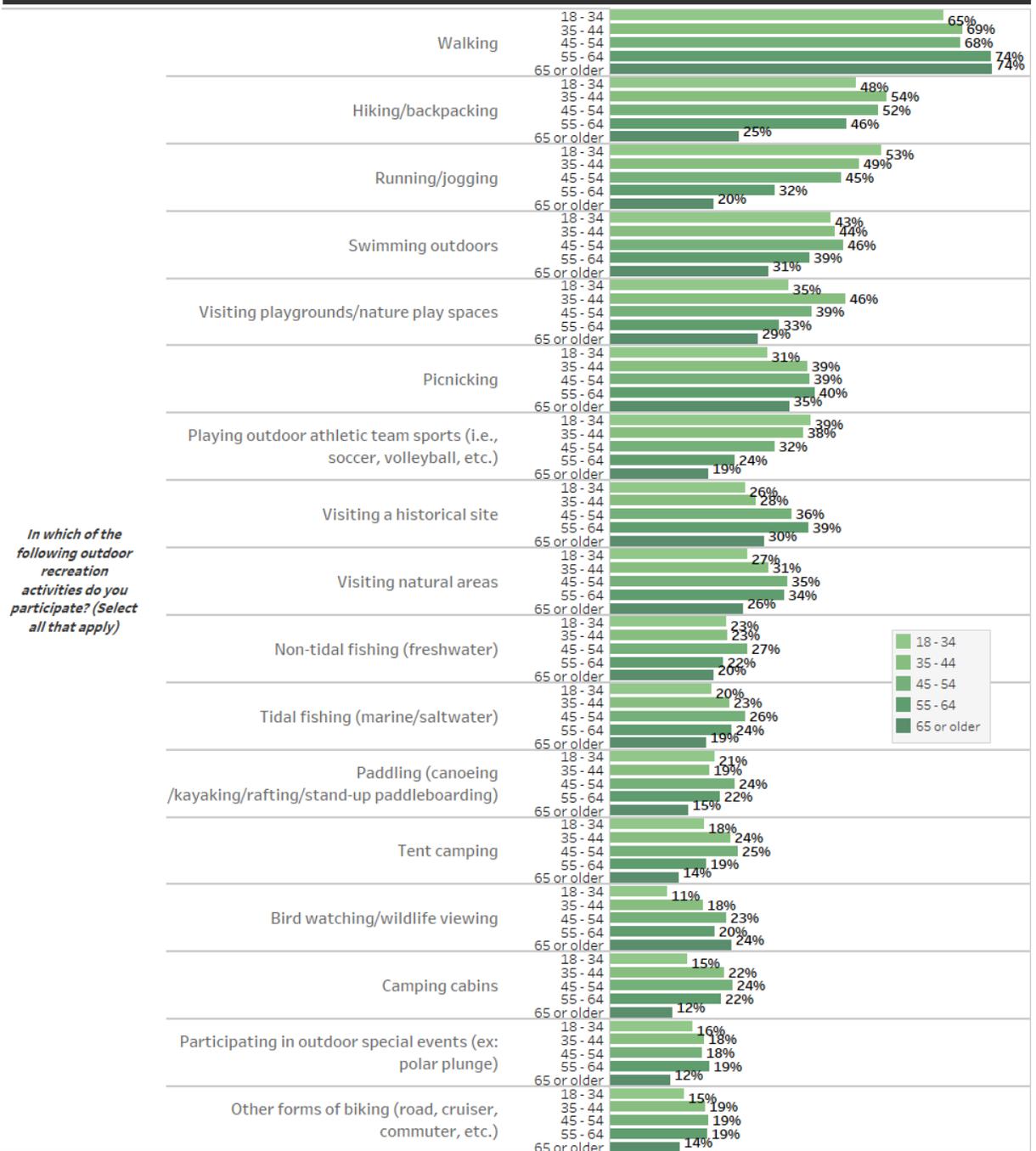
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Participation - 2018
by Region Continued



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 13

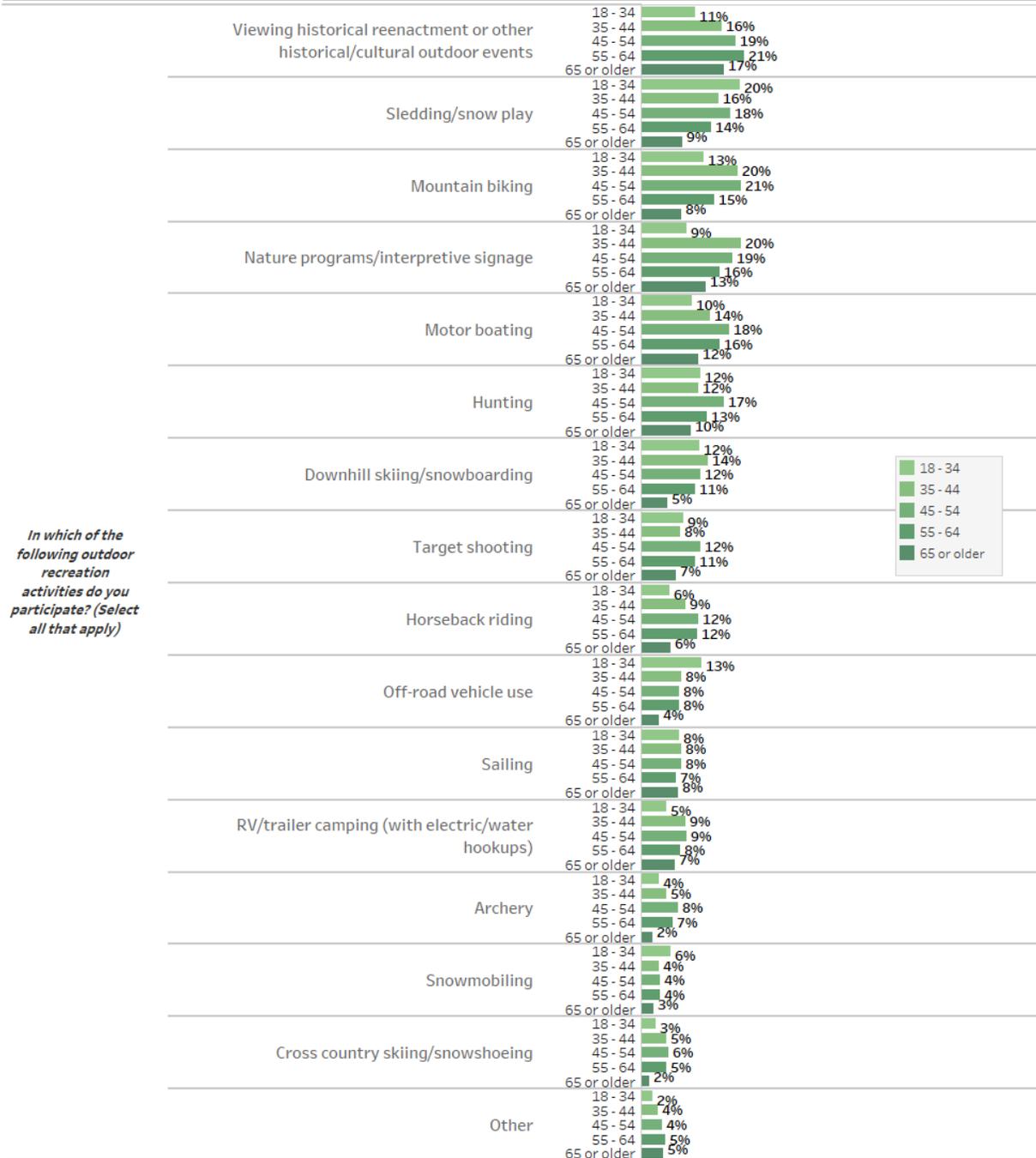
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
by Age



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 14

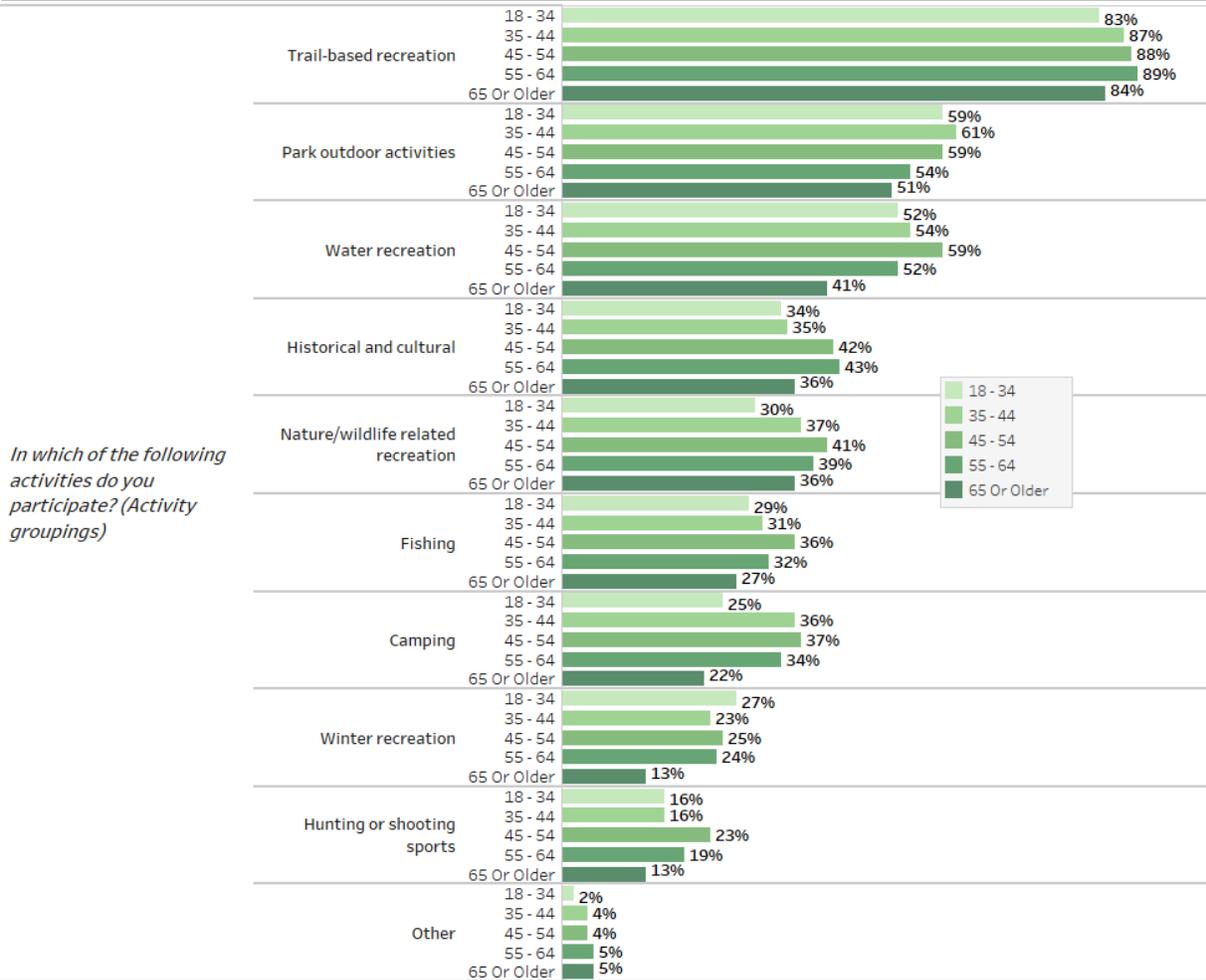
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
by Age Continued



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 15

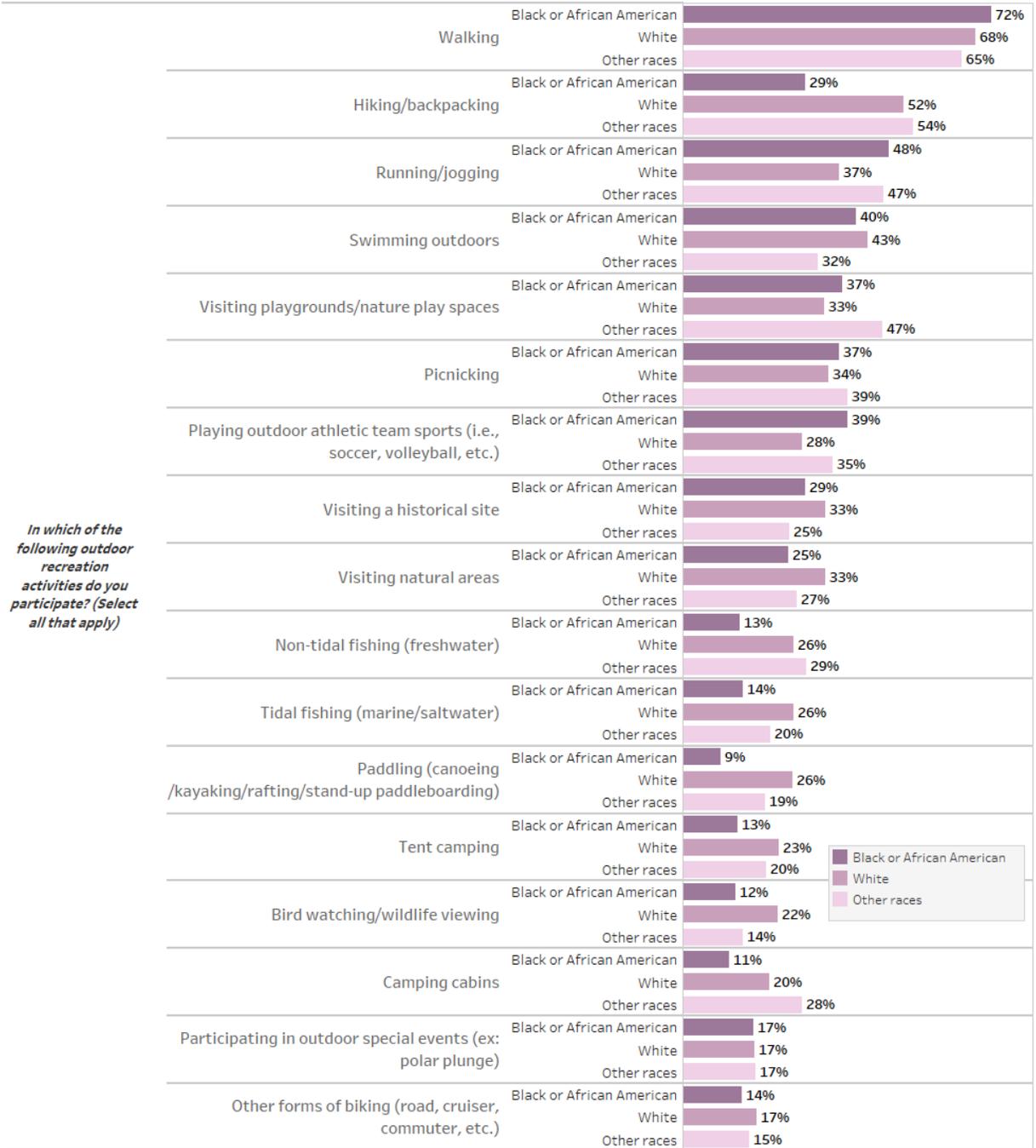
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
Only by Age



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

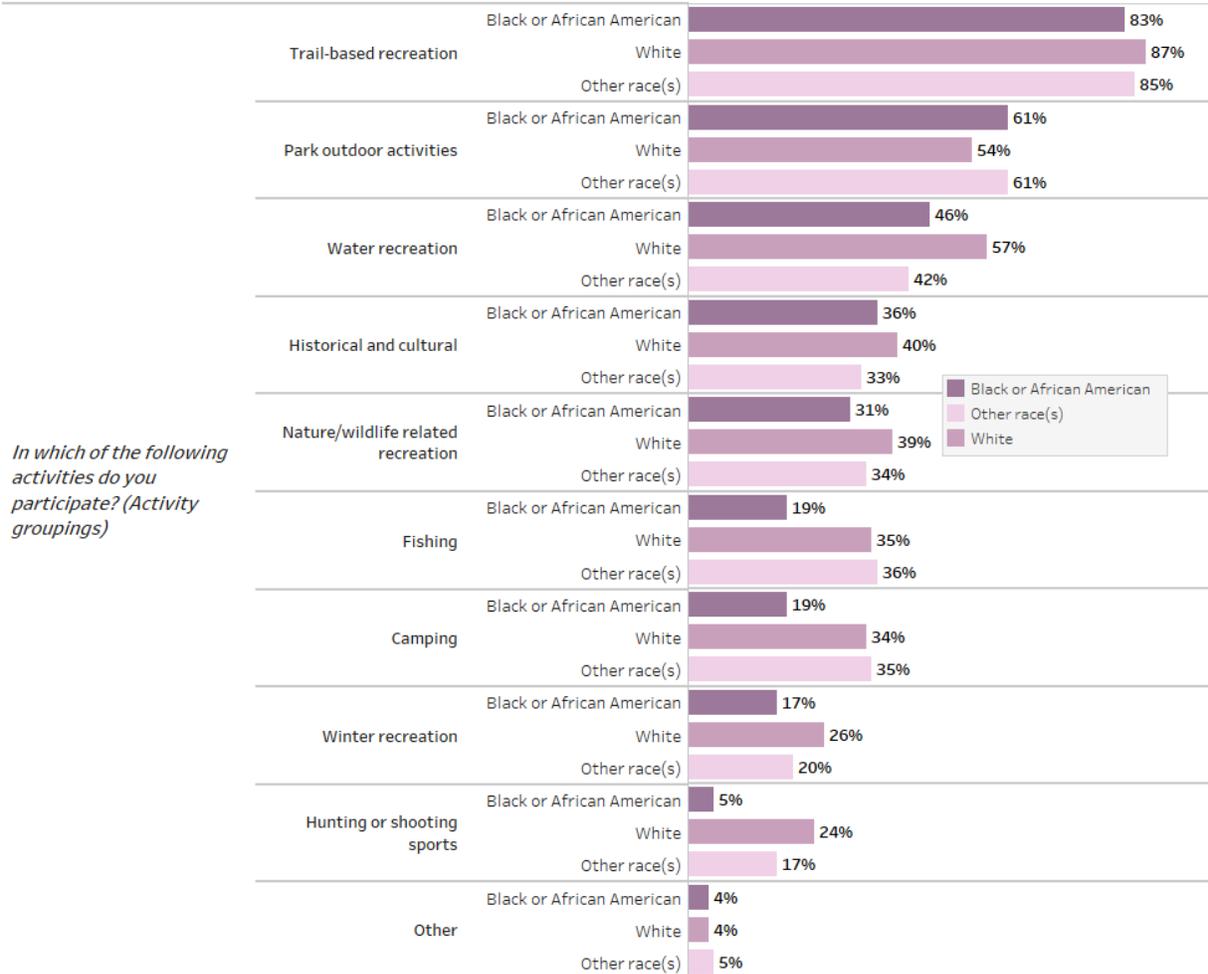
Maryland Land Preservation and Recreation Plan Survey | Outdoor Recreation Activity Participation *2018
by Race Continued



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

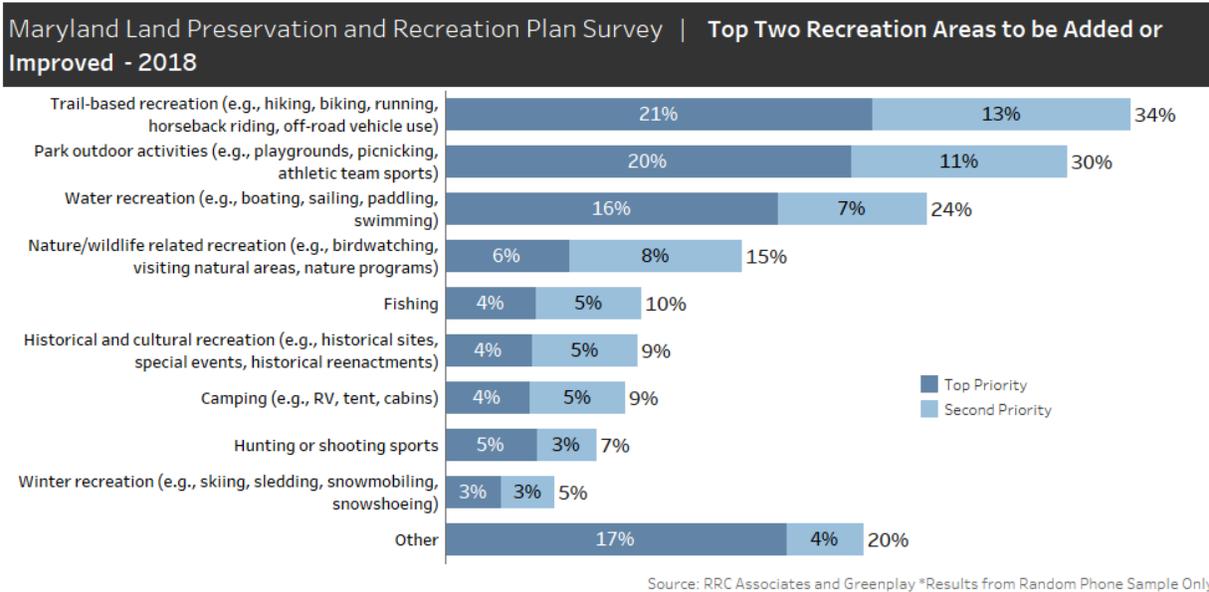


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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



- 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.

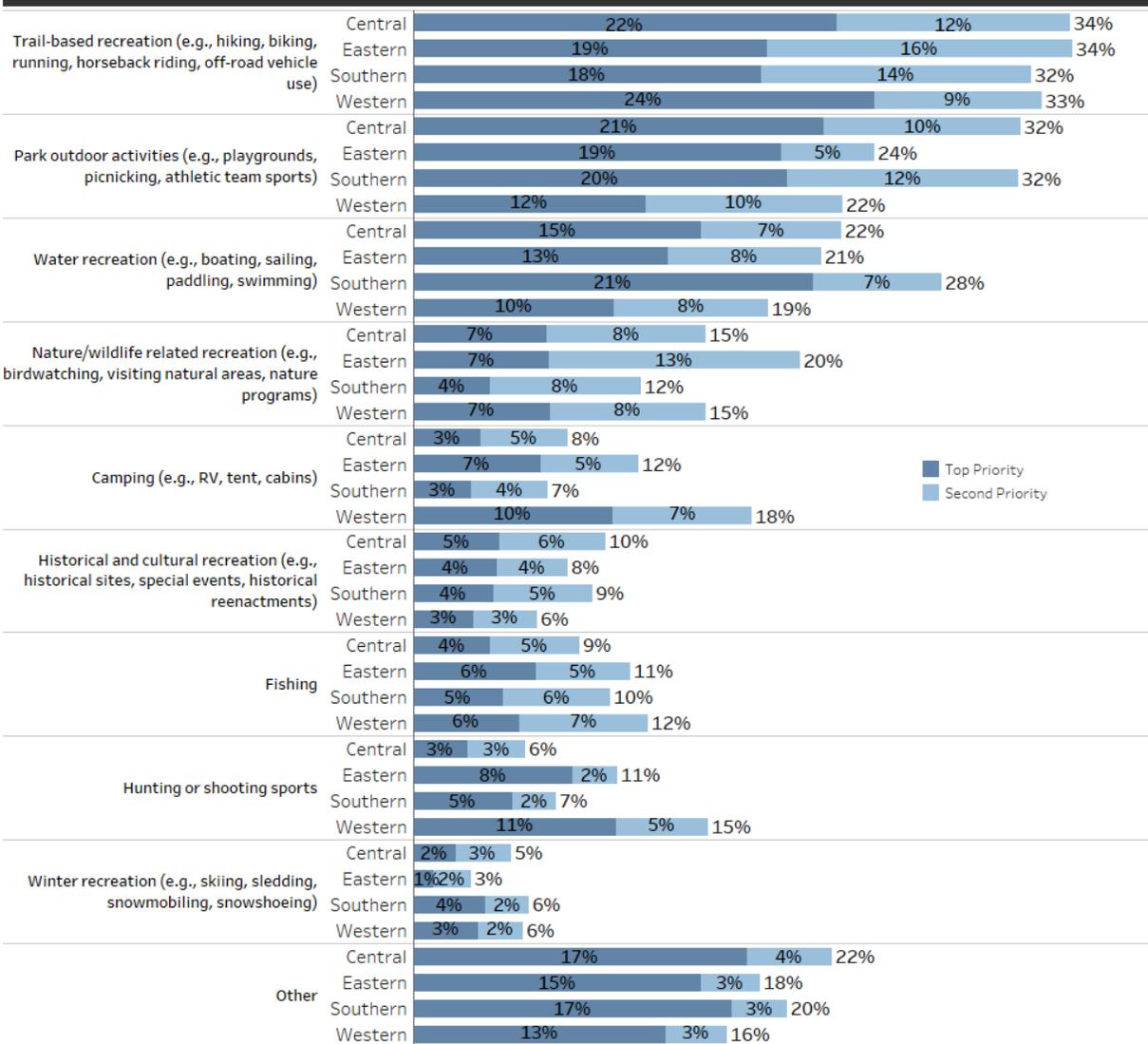
- Respondents were also given the opportunity to generally comment on future priority areas. While responses were varied in their focus and tone, an overarching theme is that residents are very engaged with and value outdoor recreation areas in the state. A random sampling of comments is included below:

- *“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

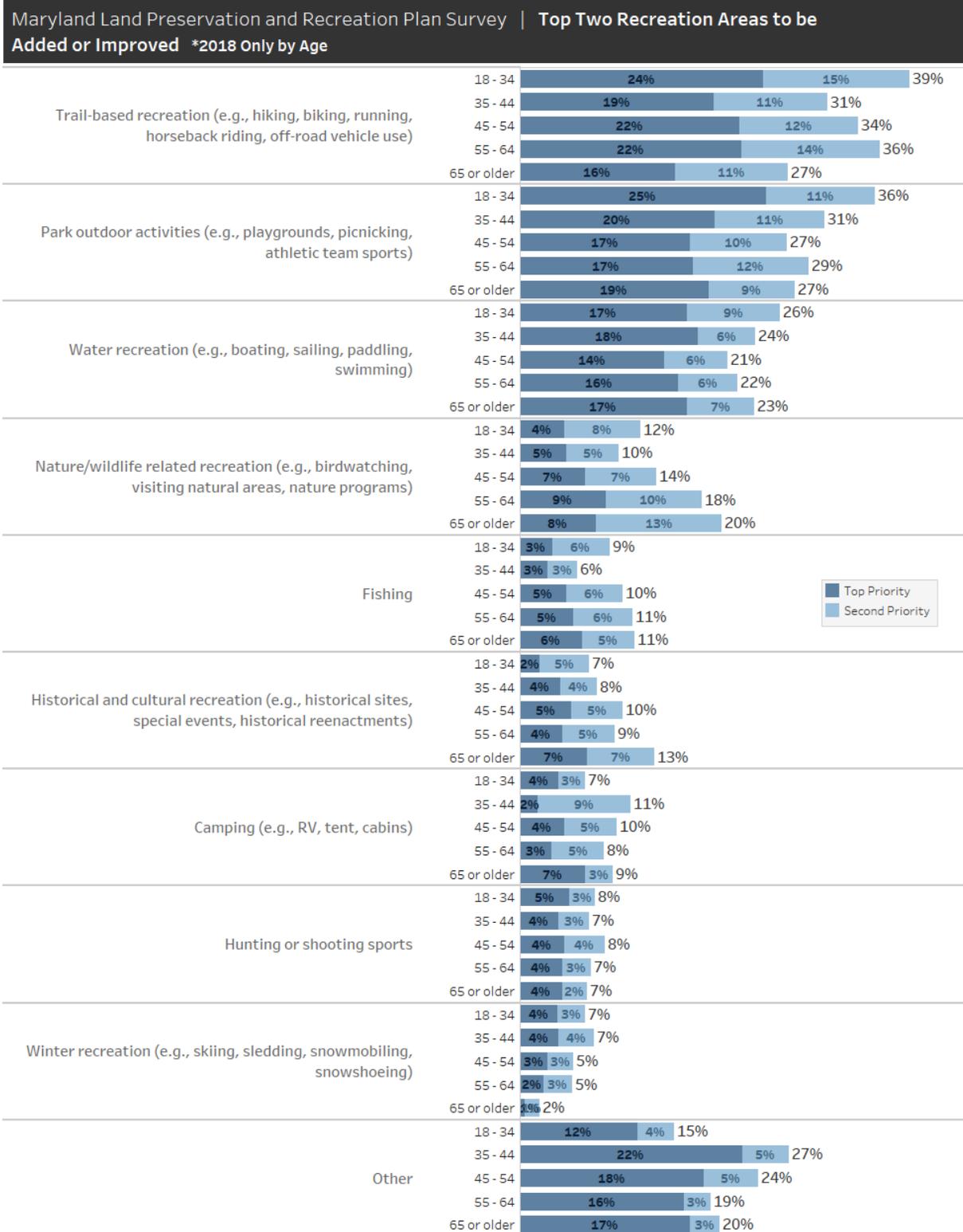
Maryland Land Preservation and Recreation Plan Survey | Top Two Recreation Areas to be Added or Improved - 2018 by Region



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.

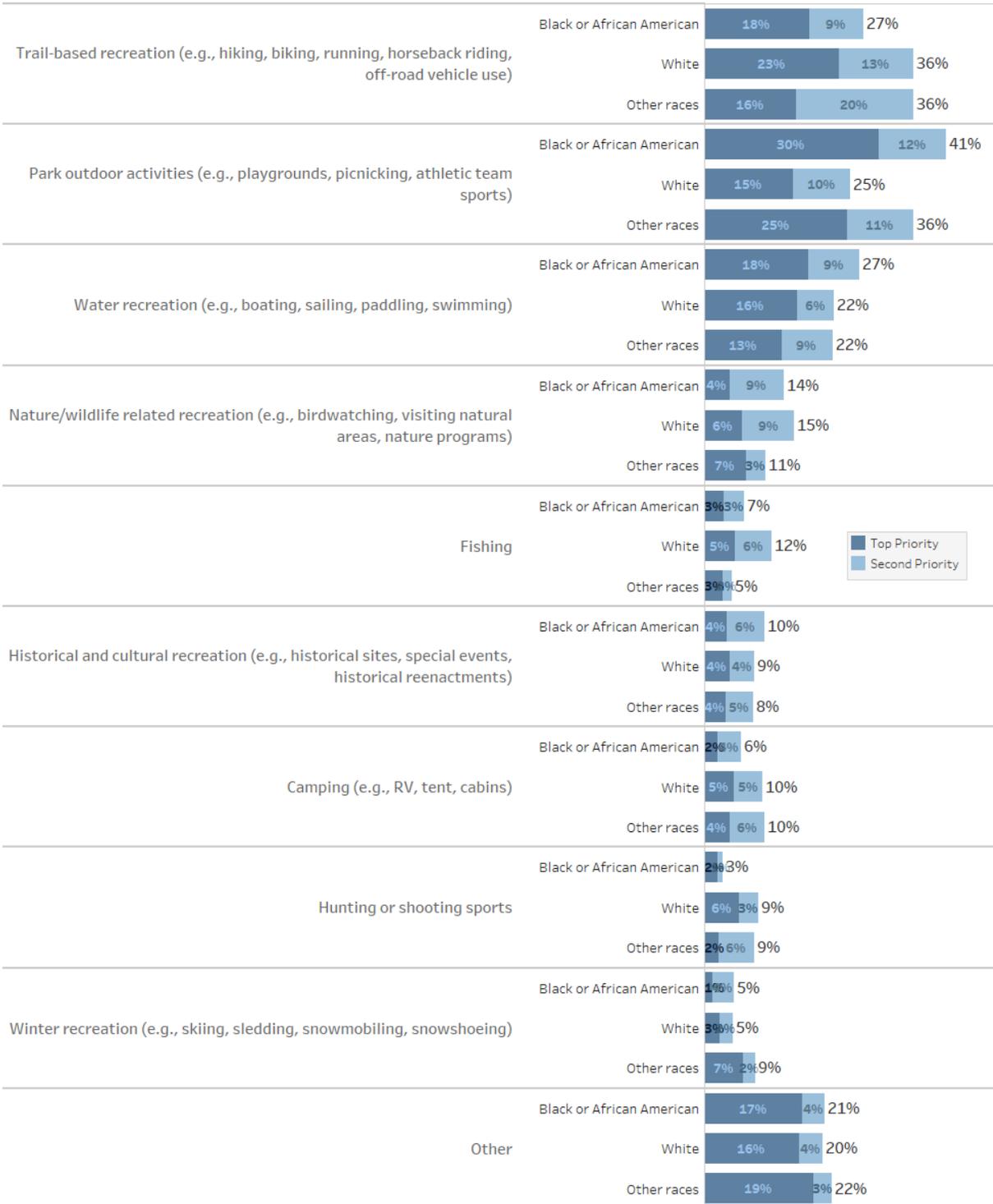
Figure 21



Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

Figure 22

Maryland Land Preservation and Recreation Plan Survey | Top Two Recreation Areas to be Added or Improved *2018 Only by Race

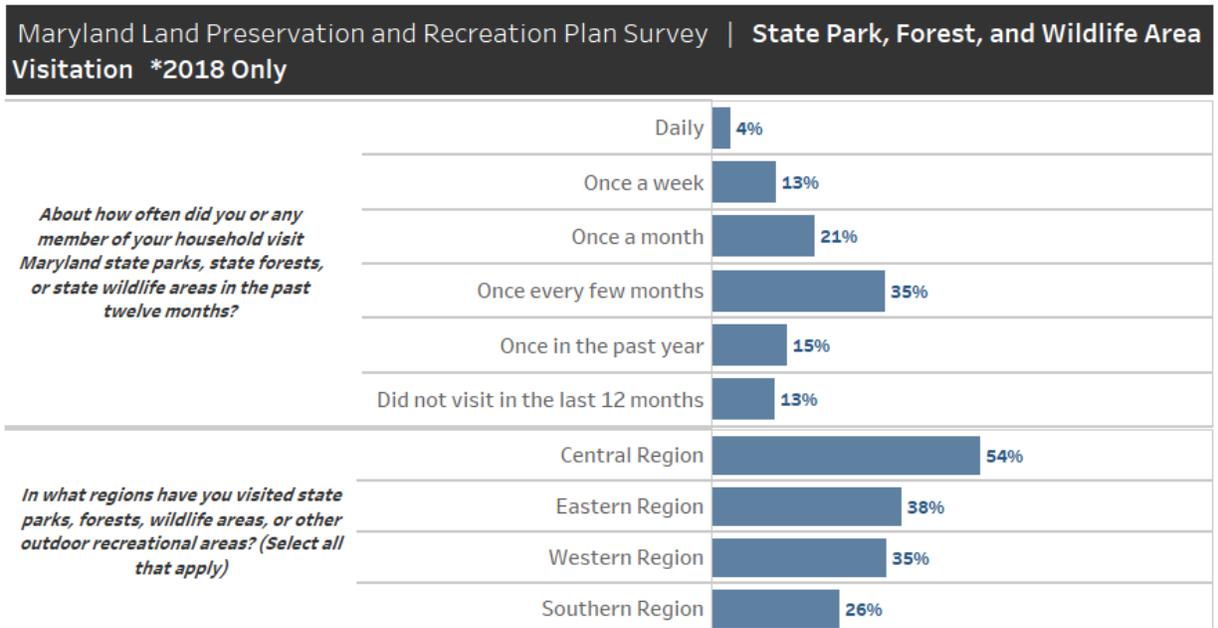


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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

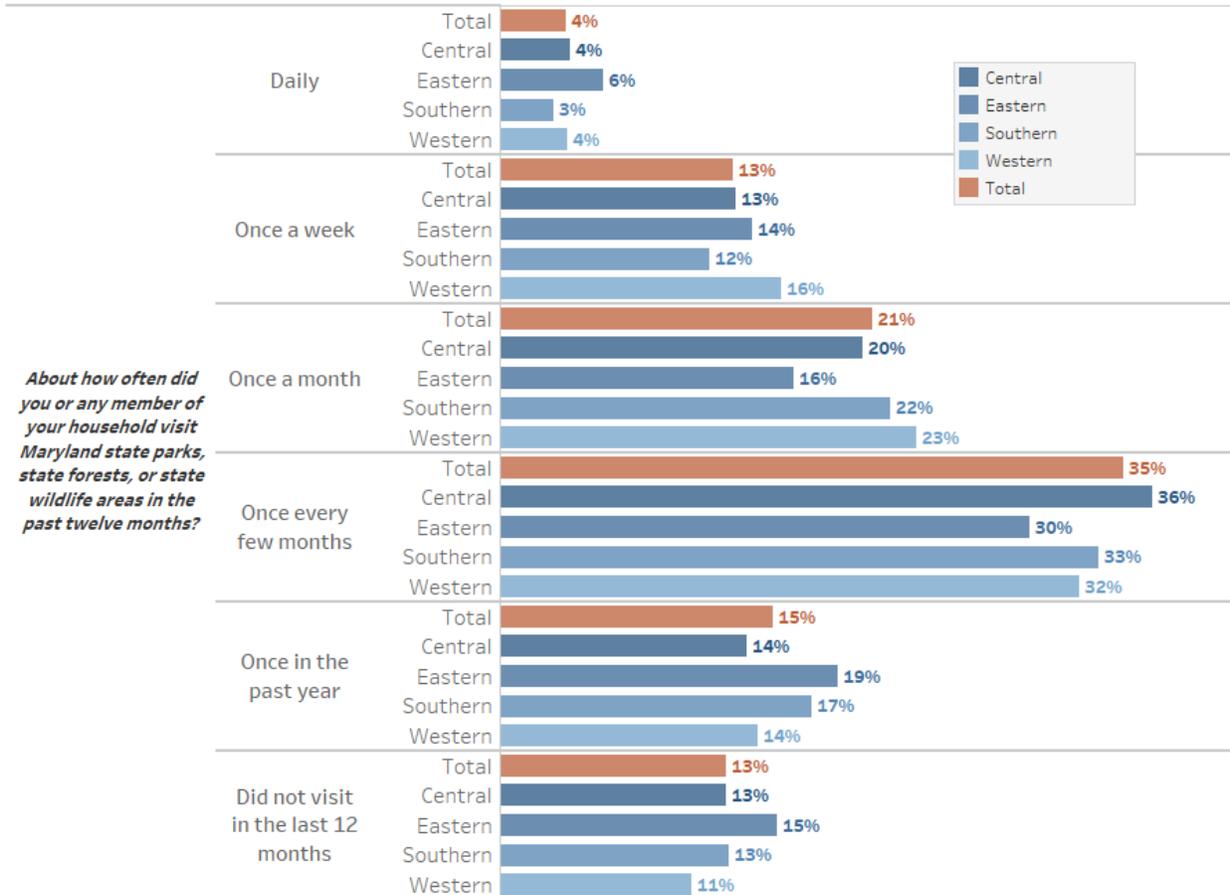


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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

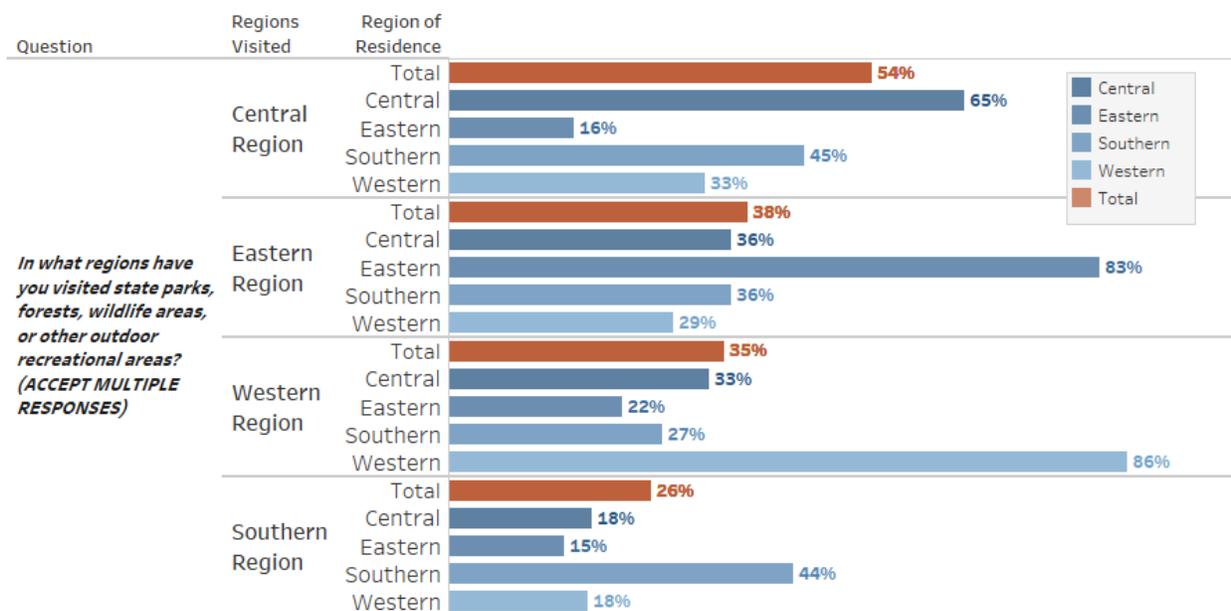


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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 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**

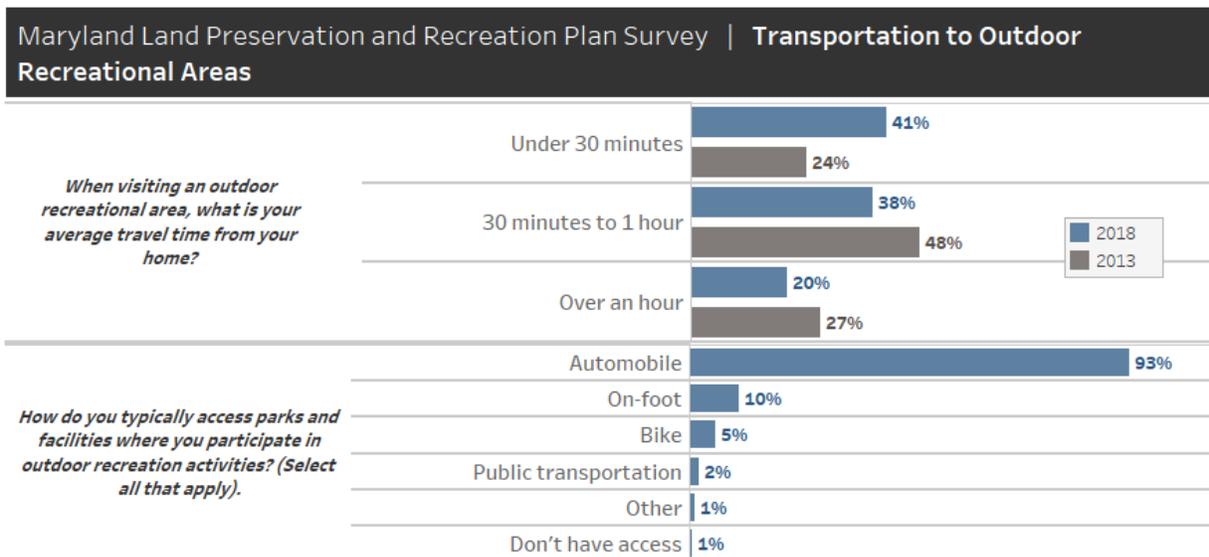


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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

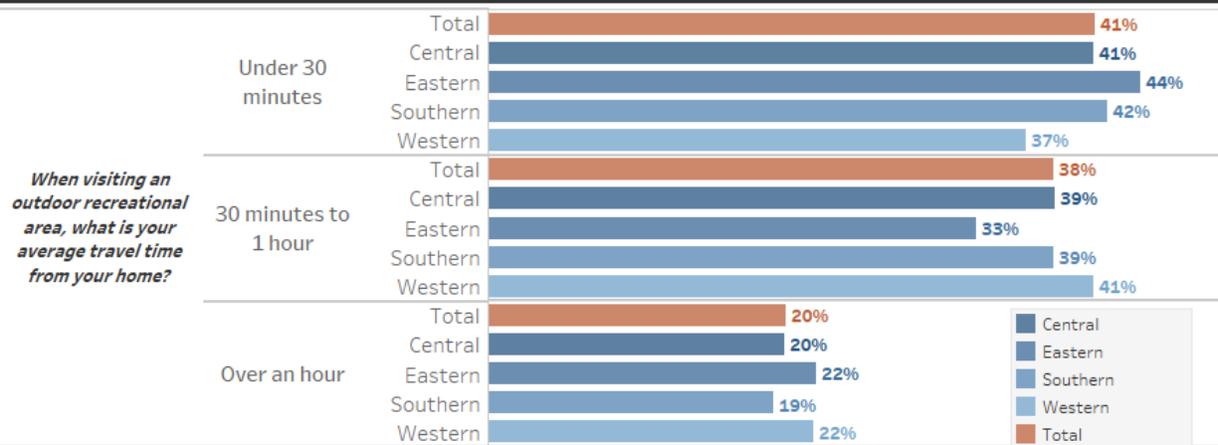


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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**

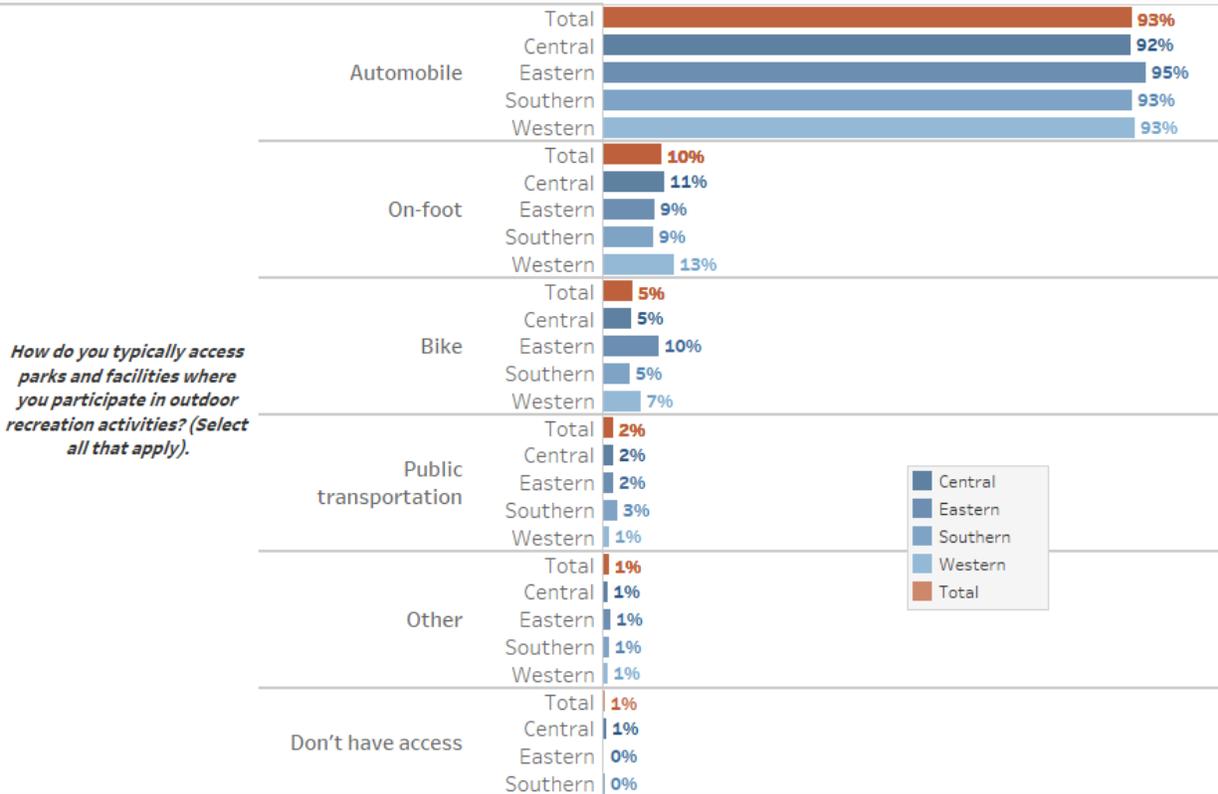


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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**

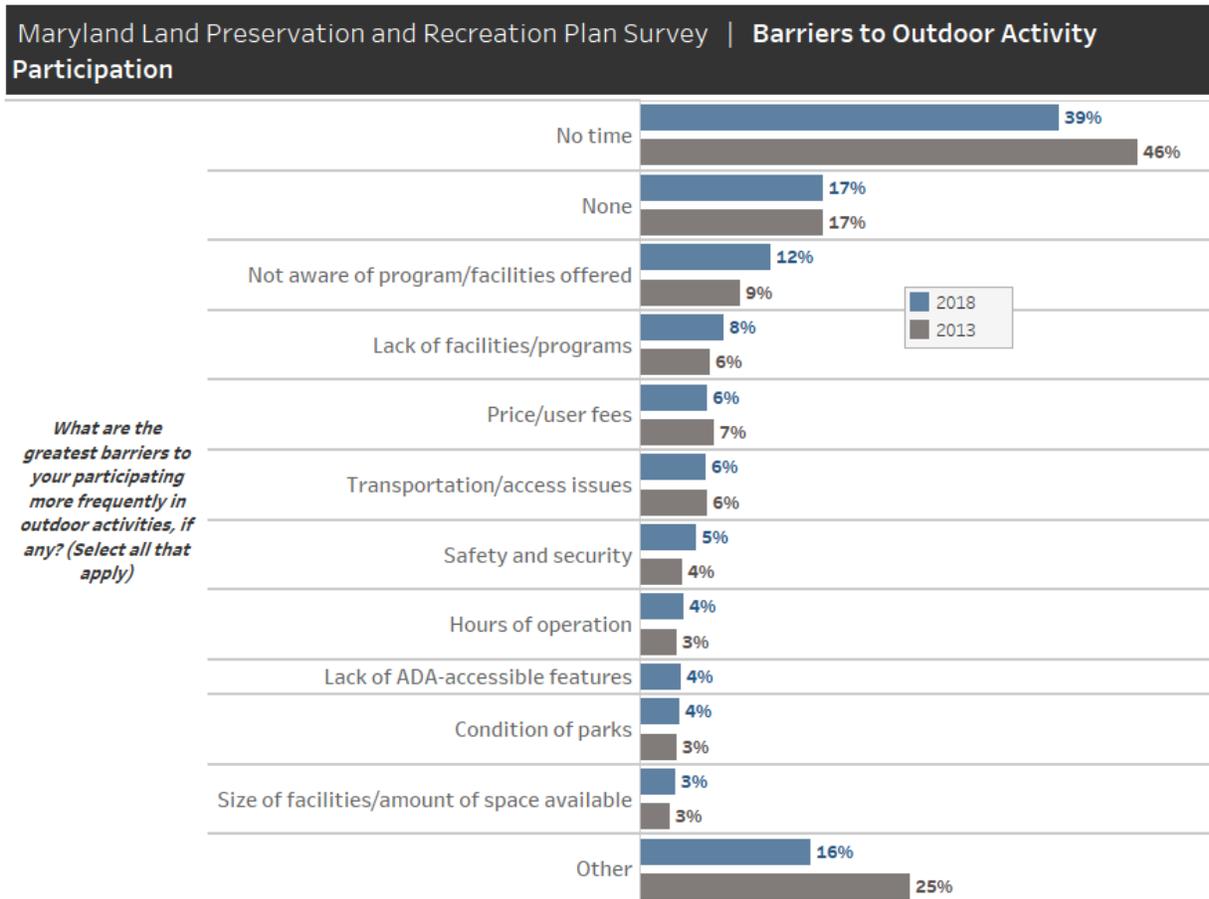


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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

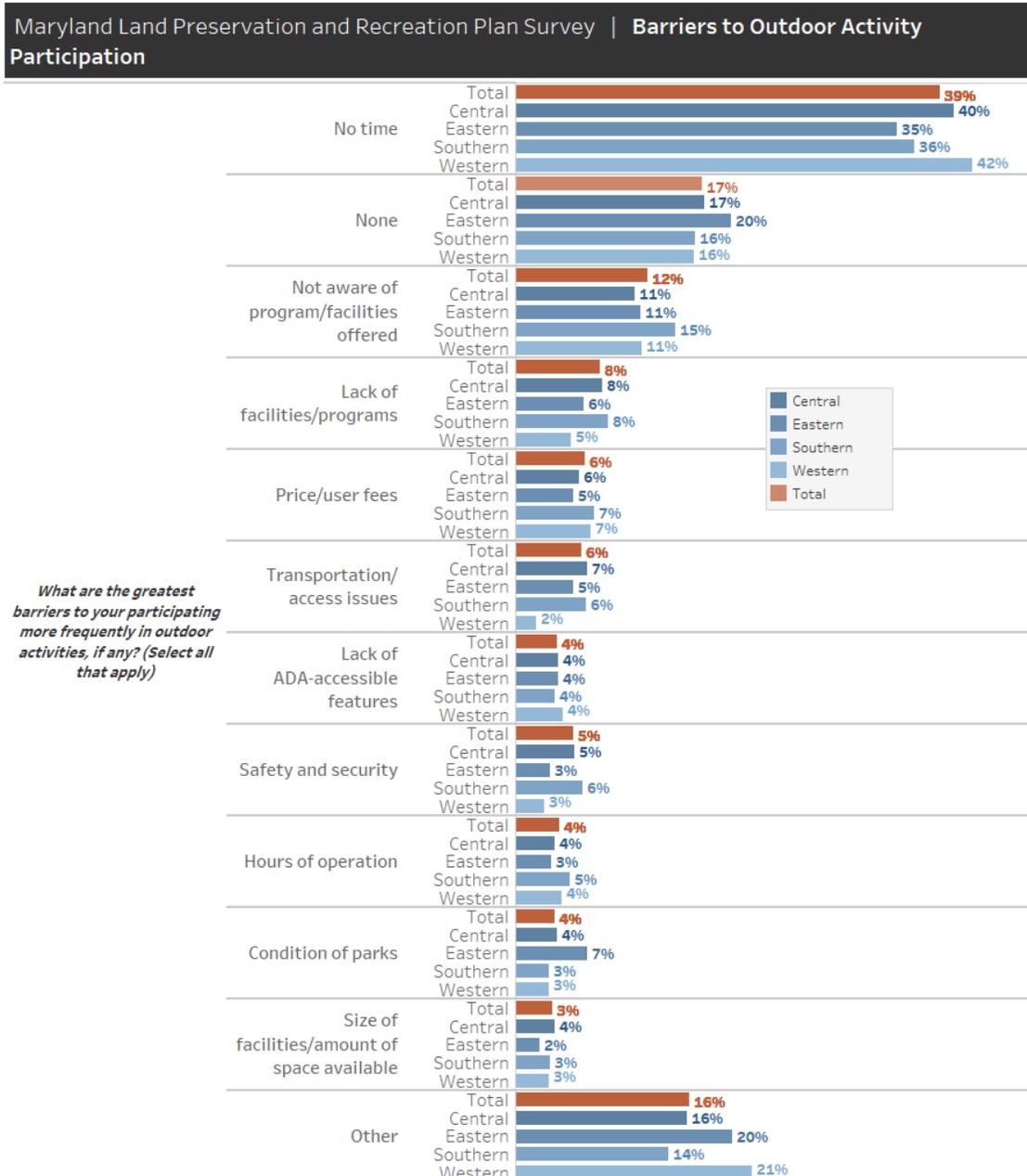


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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.

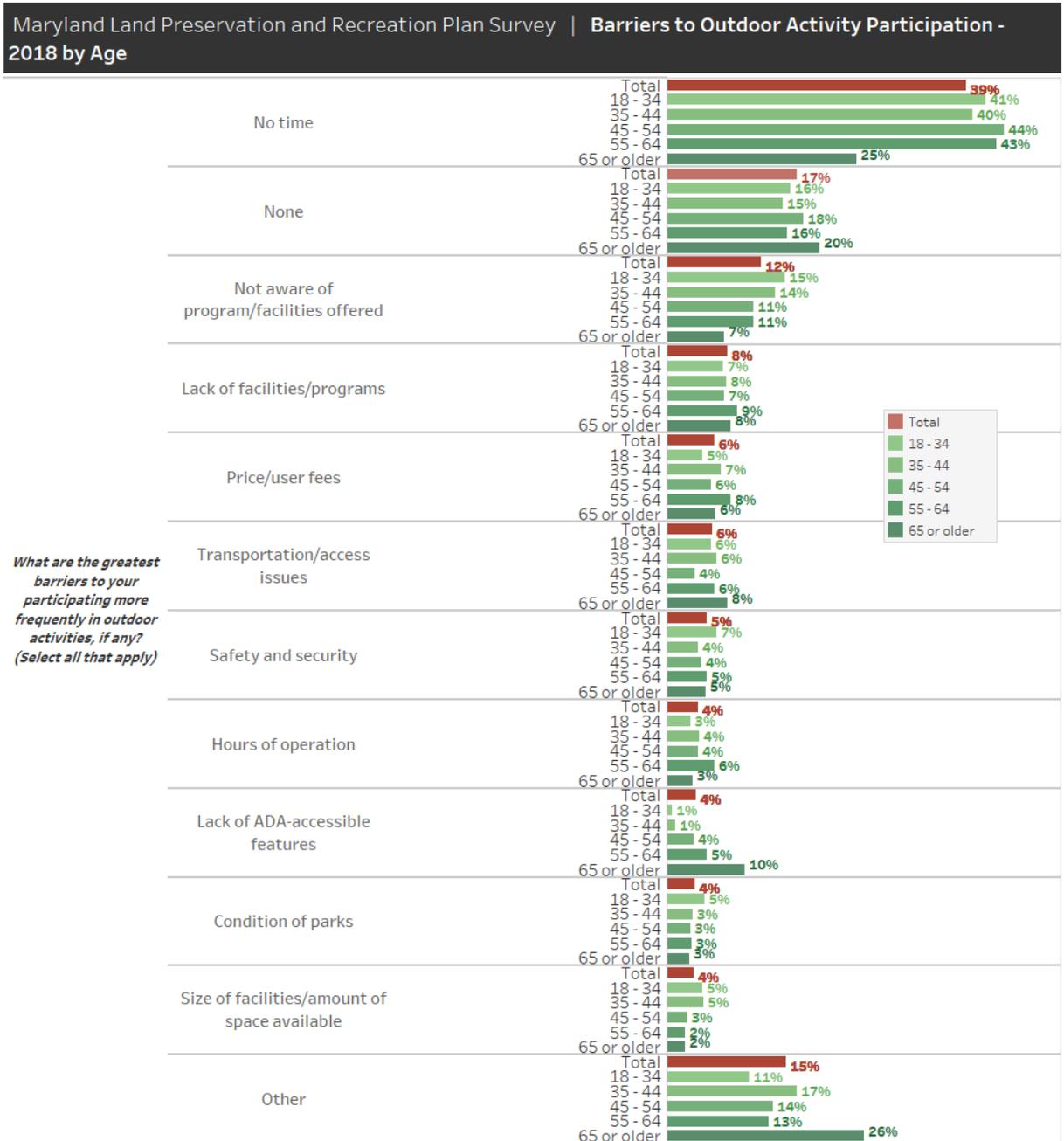
- There were some slight differences by region regarding barriers to participation. Western Region respondents were the most likely to report not having time (42 percent vs. 35 to 40 percent of other region respondents). Southern Region respondents were more likely to be unaware of programs/facilities 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



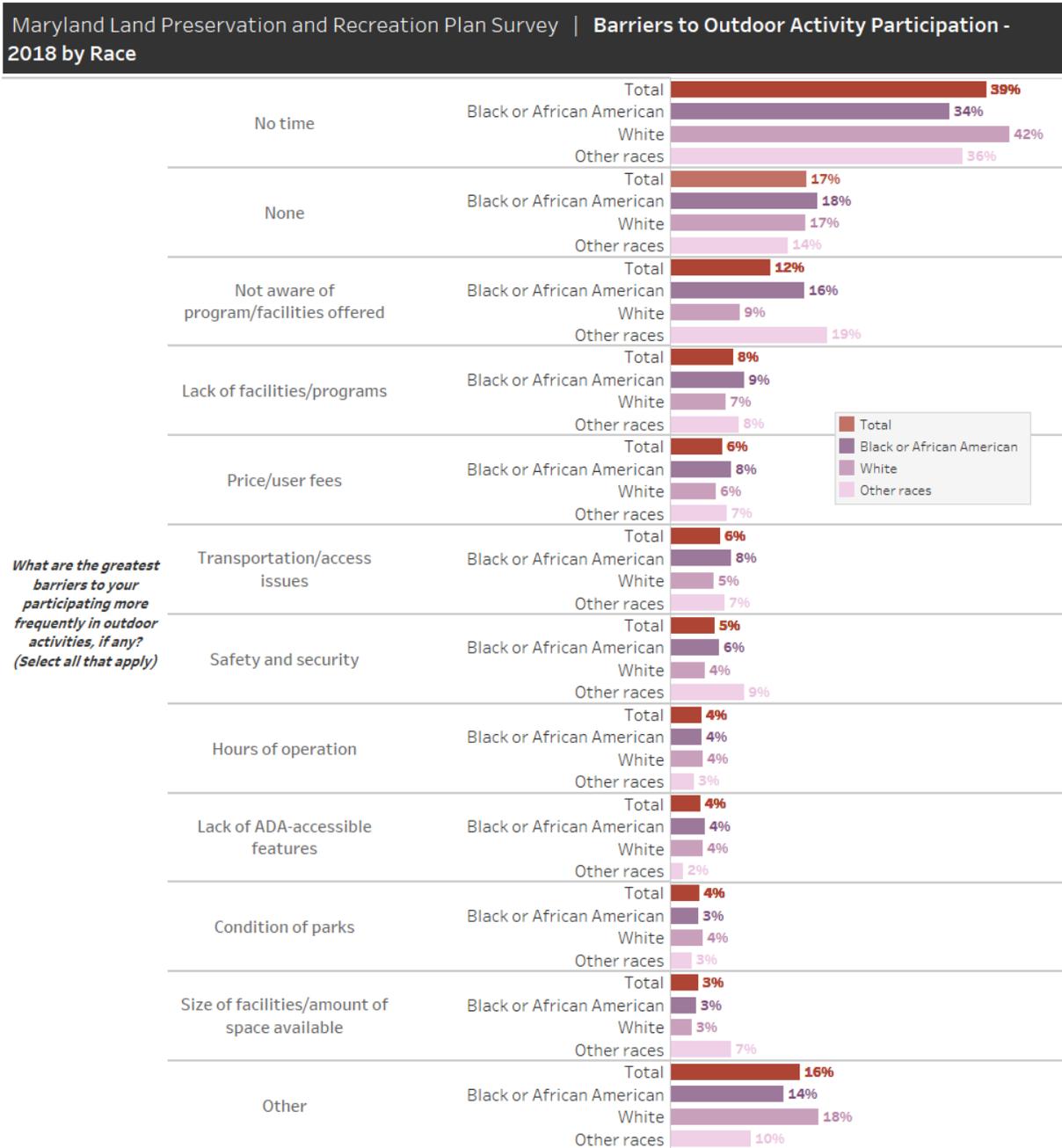
- There were some slight differences by age regarding barriers to participation. Respondents between the ages of 44 and 64 were the most likely to indicate “no time” as a barrier, although it was the top reason cited by respondents regardless of age. Lack of awareness tended to be a bigger obstacle for 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.

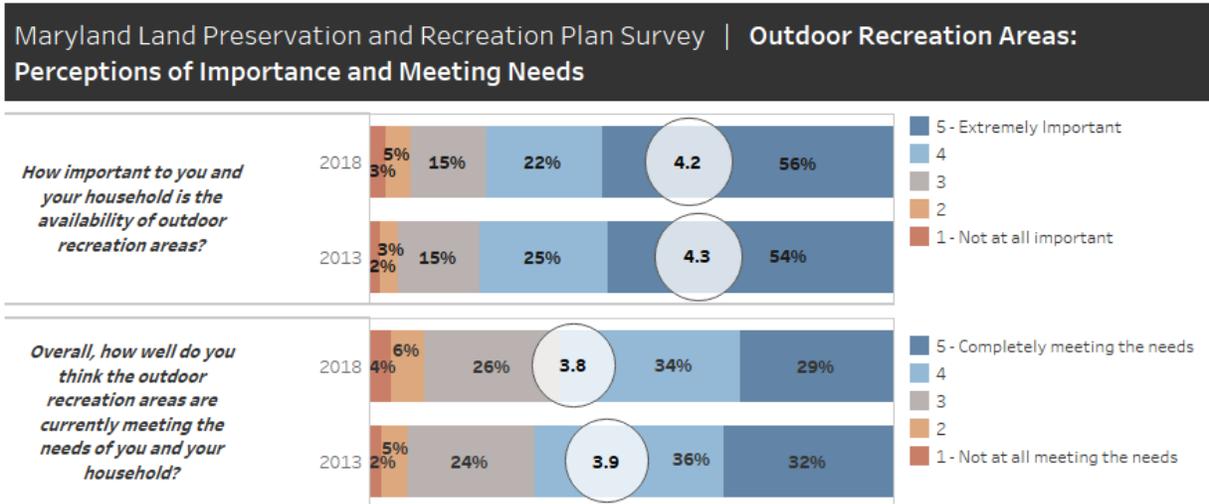
Figure 32



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).

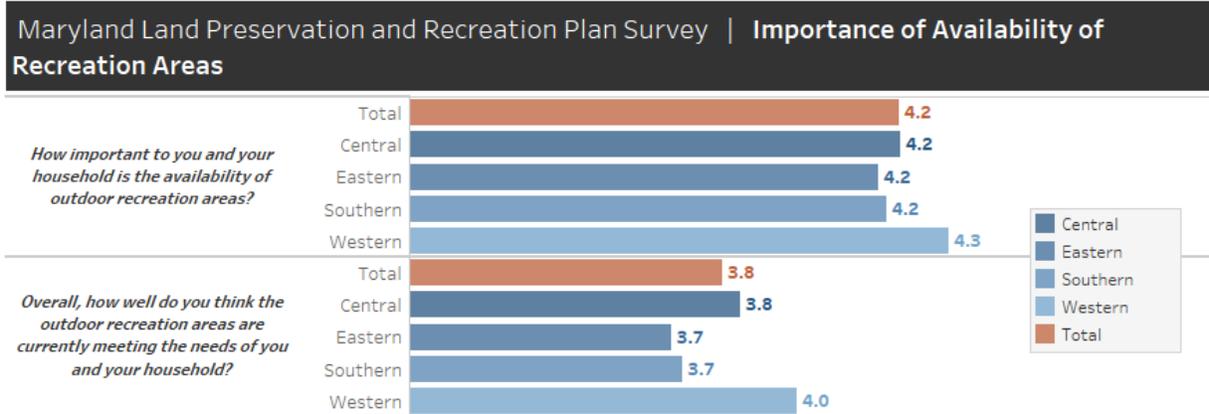
Figure 33



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

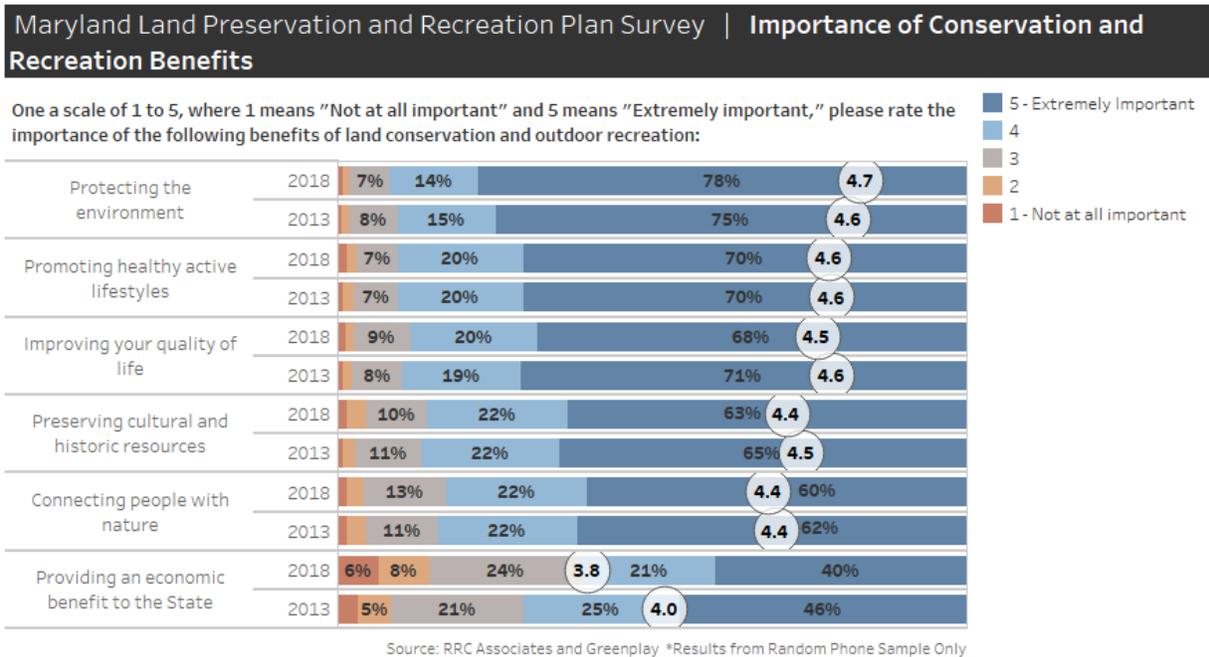


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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.

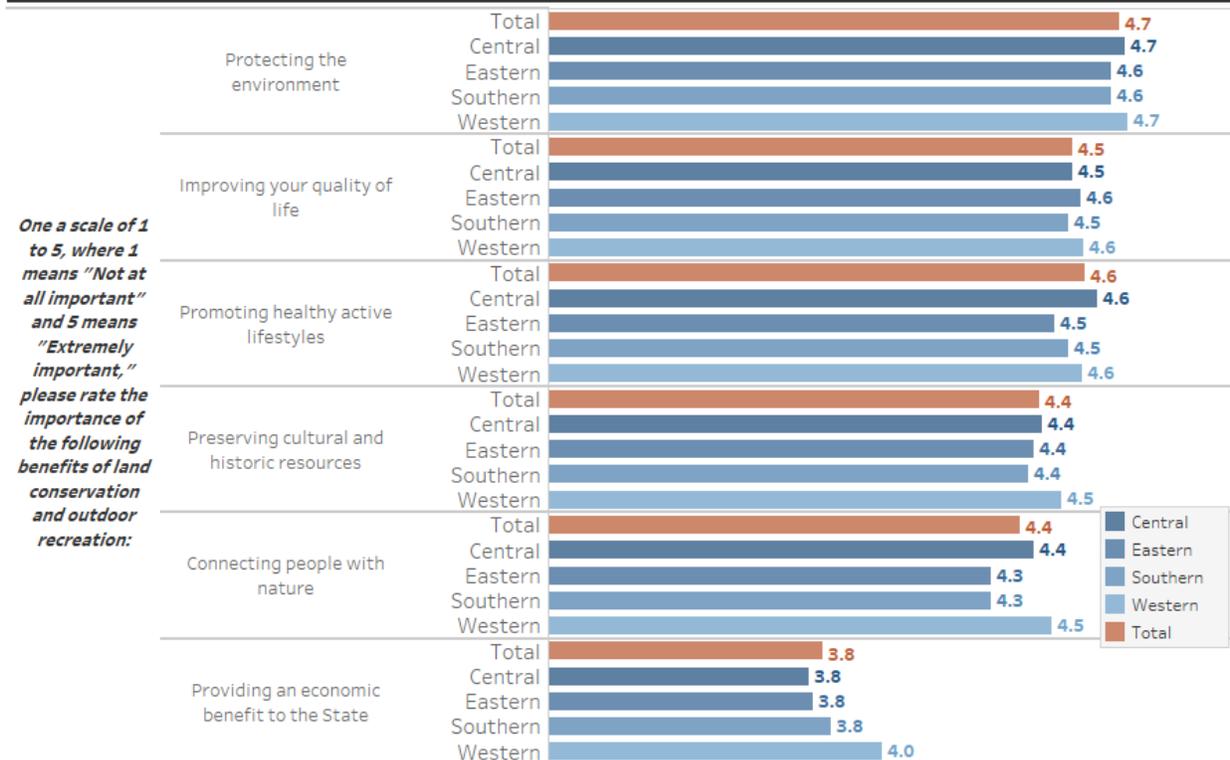
Figure 35



- 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

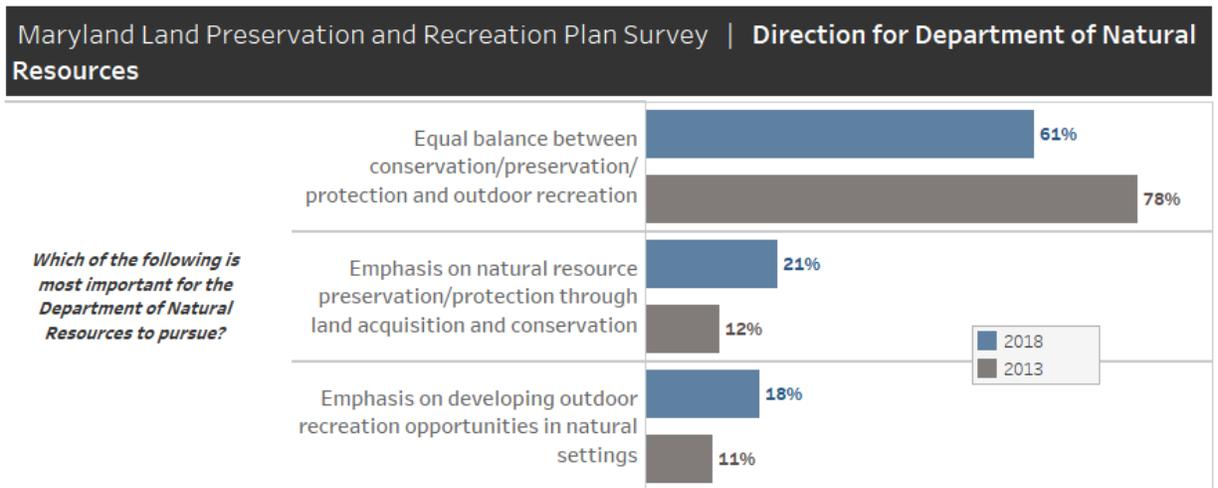


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

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

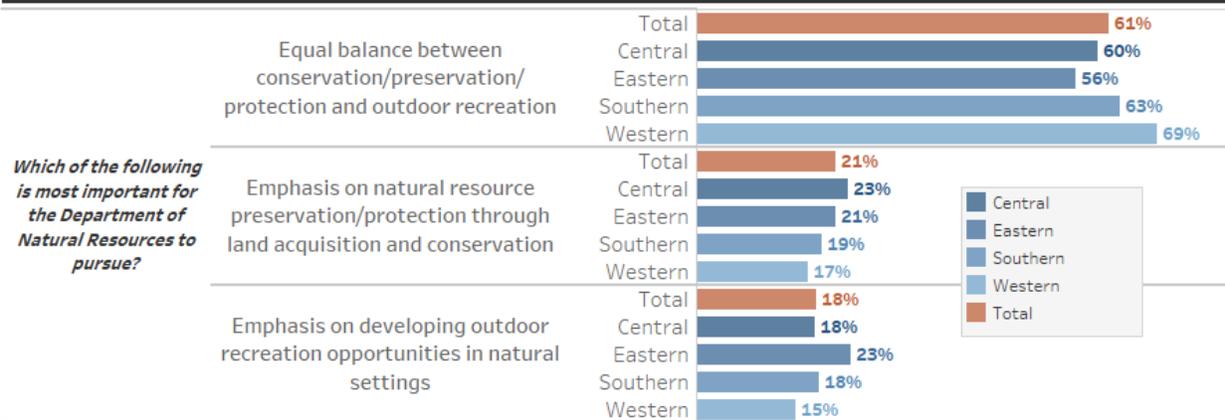


Source: RRC Associates and Greenplay *Results from Random Phone Sample Only

- 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

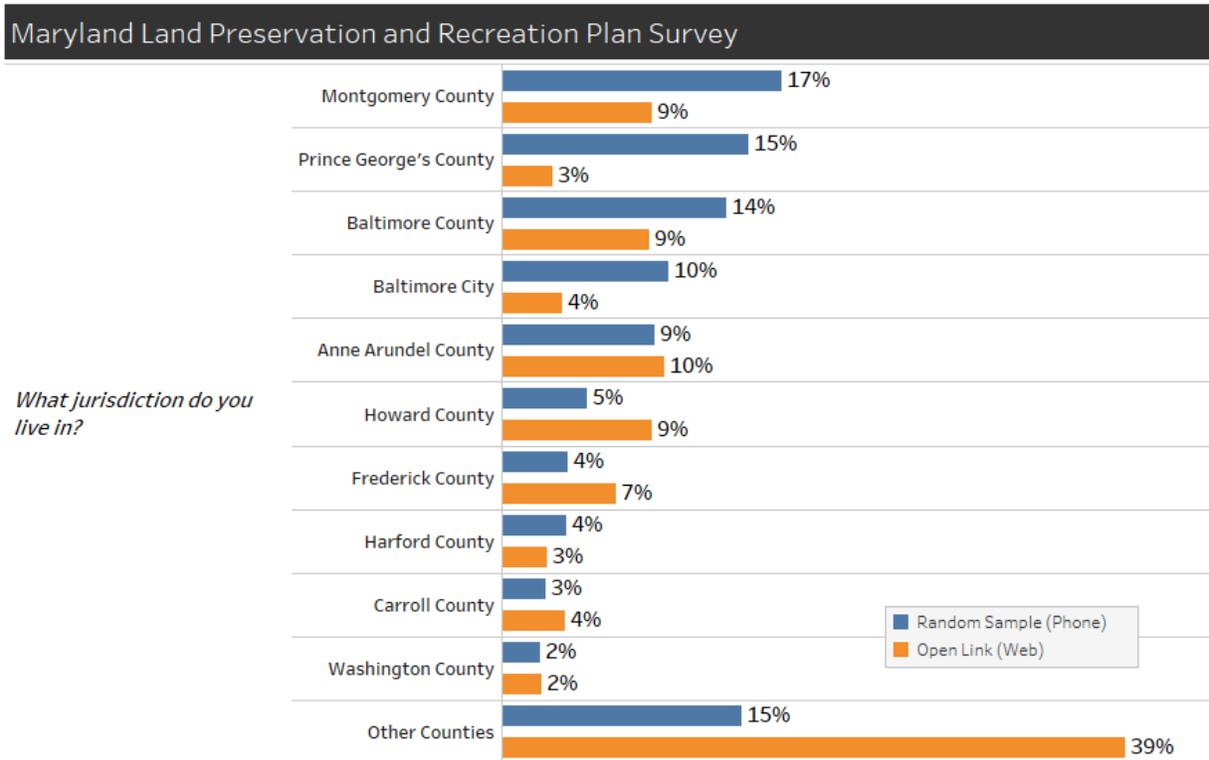
ONLINE OPEN LINK SURVEY RESULTS

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

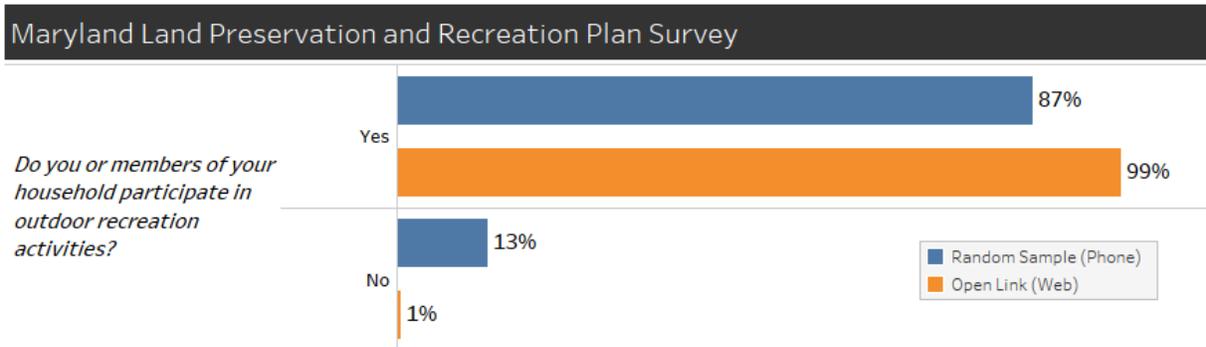


Source: RRC Associates and Greenplay

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



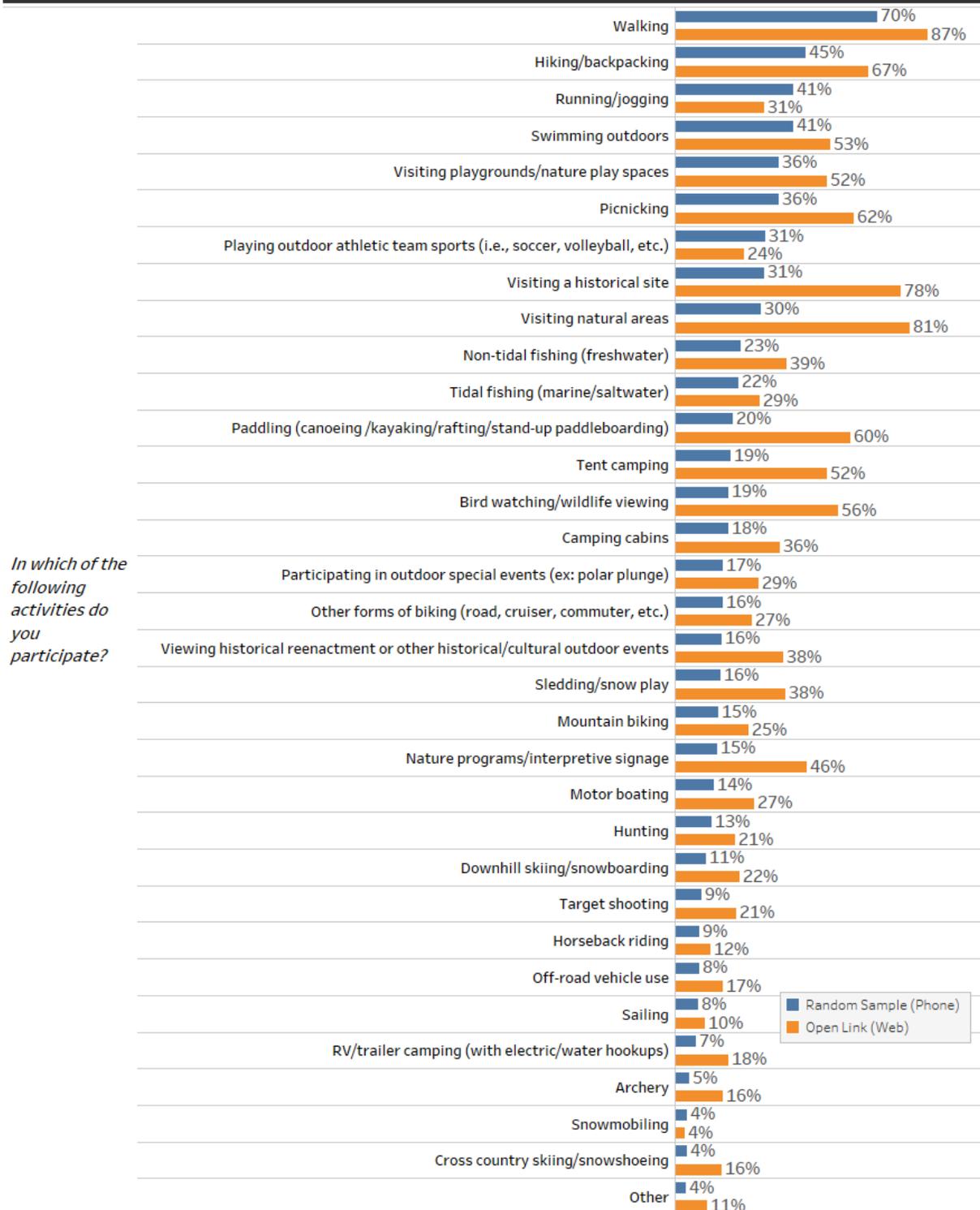
Source: RRC Associates and Greenplay

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

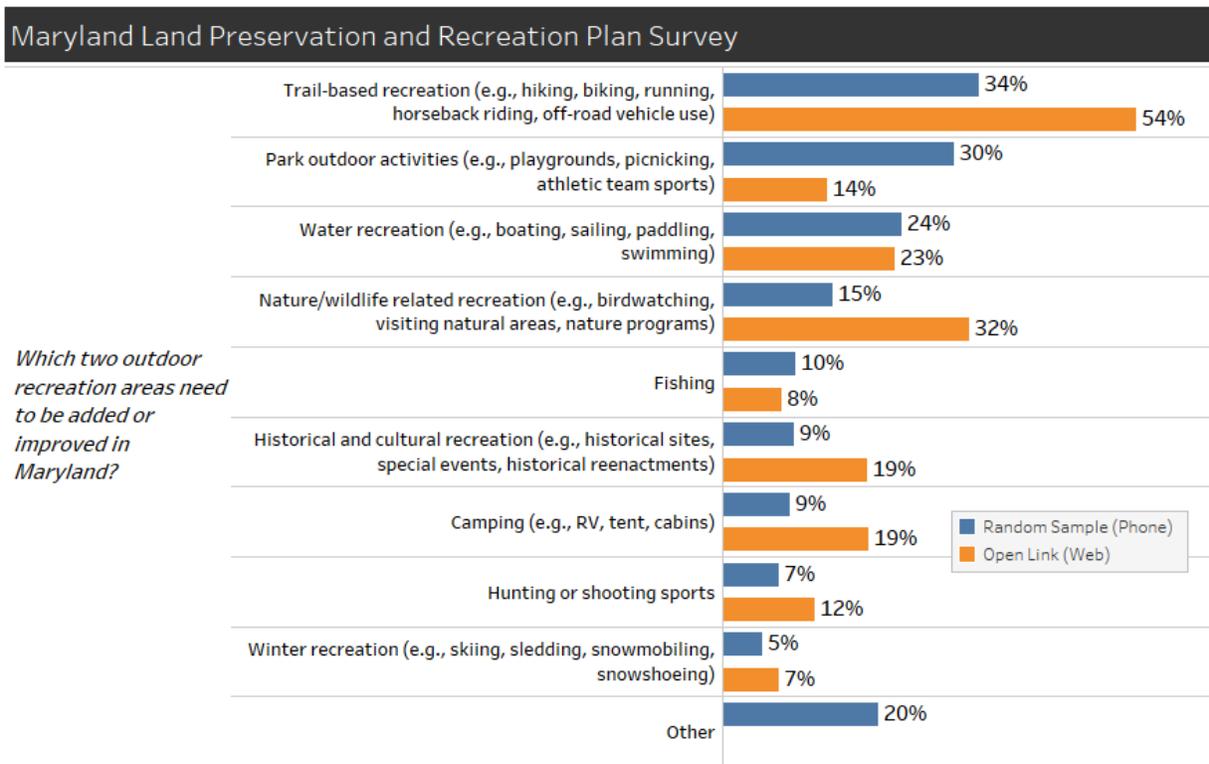


Source: RRC Associates and Greenplay

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



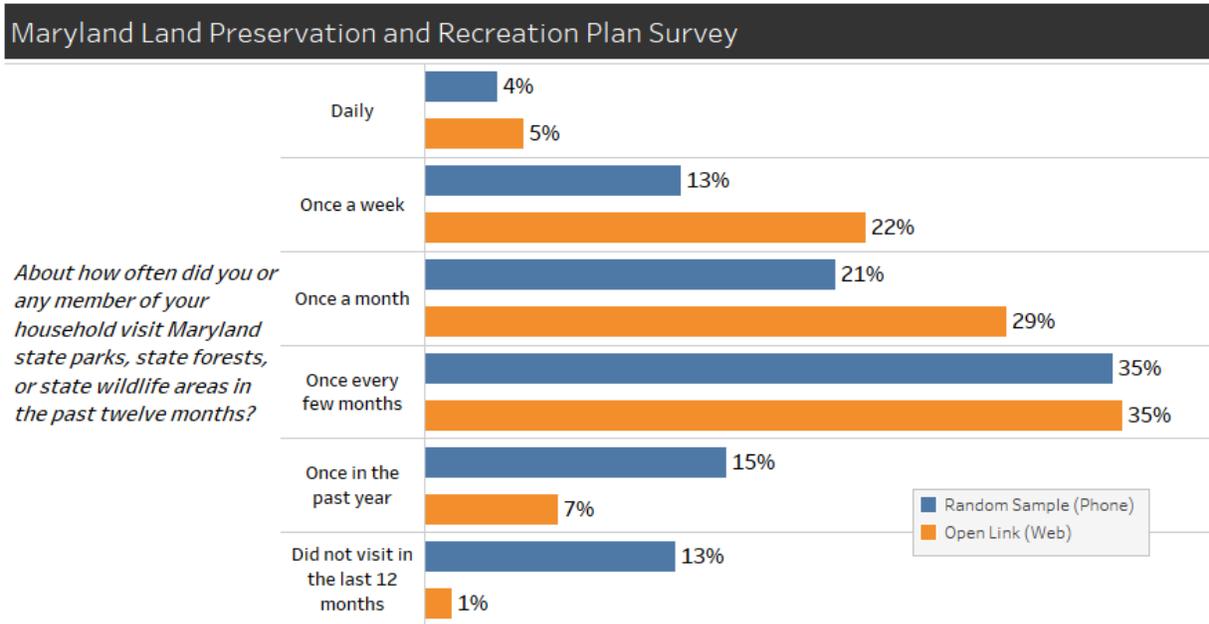
Source: RRC Associates and Greenplay

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.

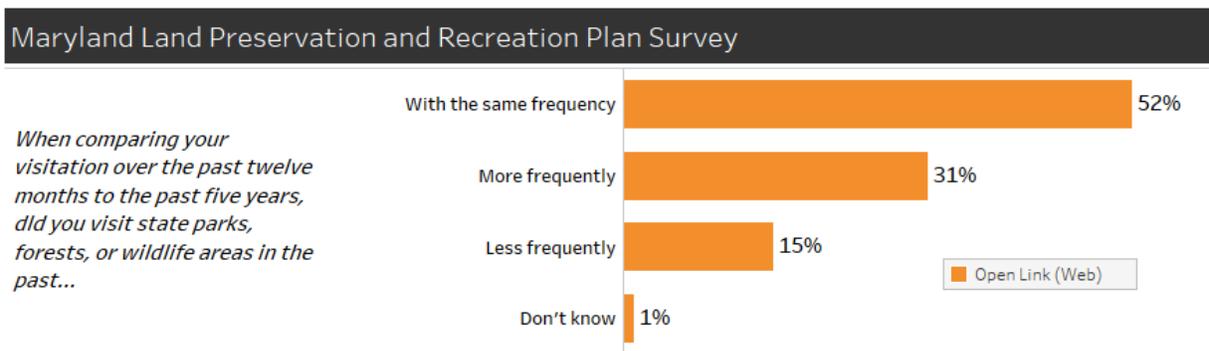
Figure 43



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.

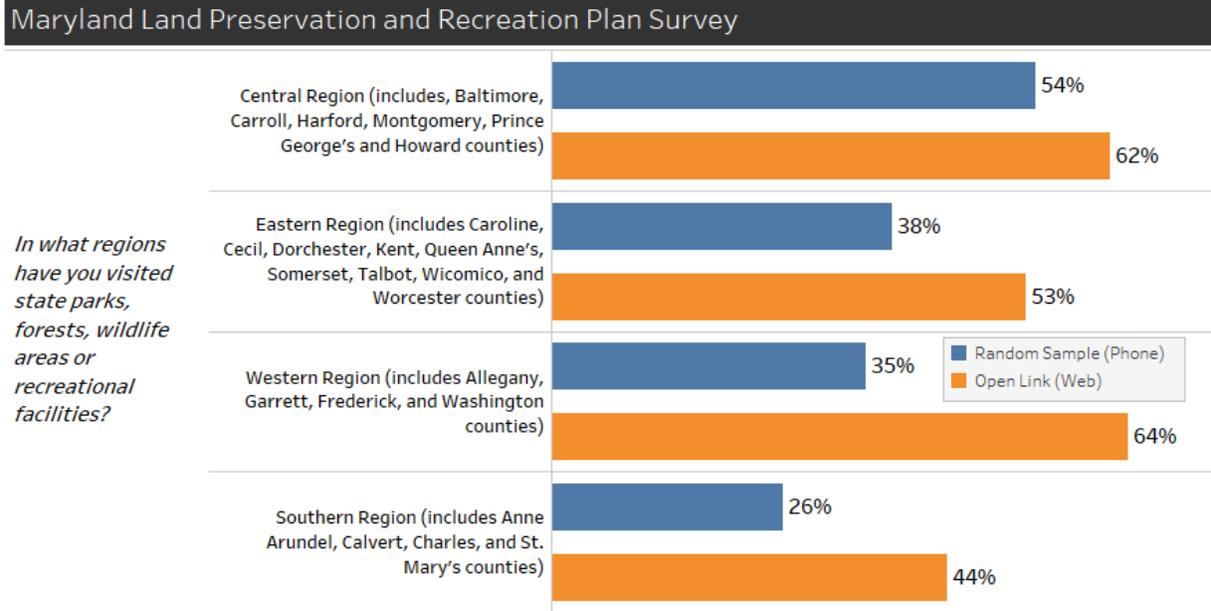
Figure 44



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

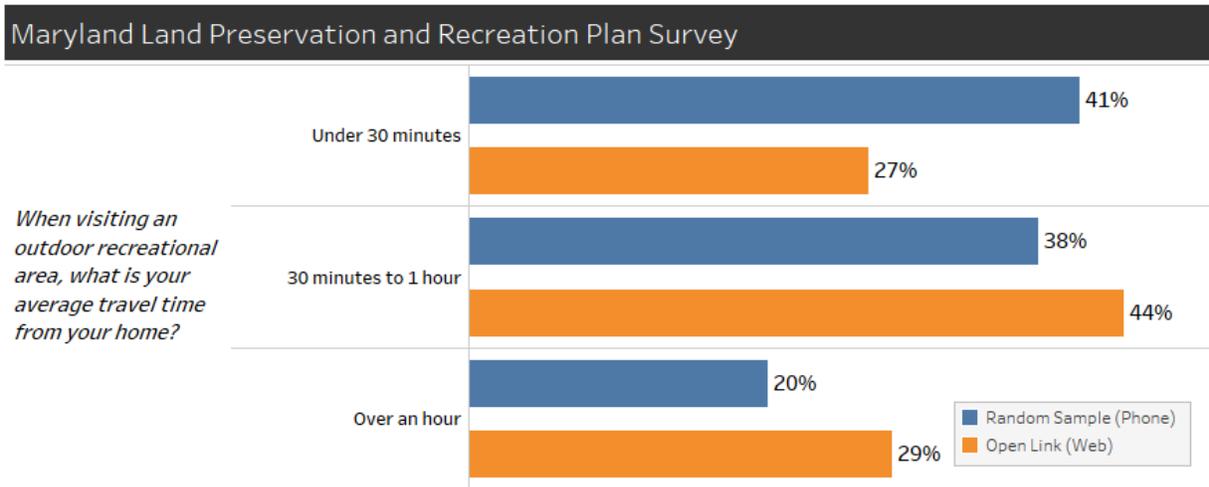


Source: RRC Associates and Greenplay

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

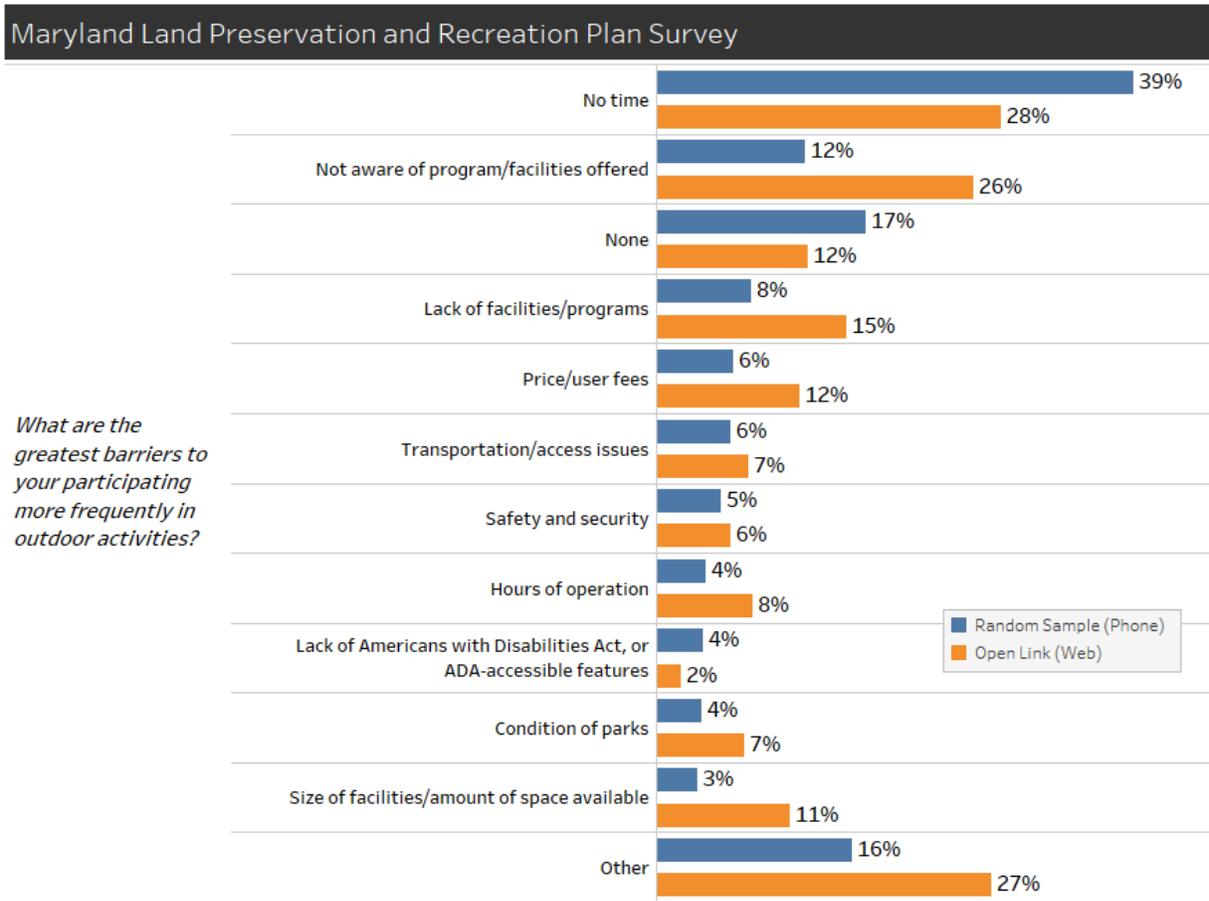


Source: RRC Associates and Greenplay

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

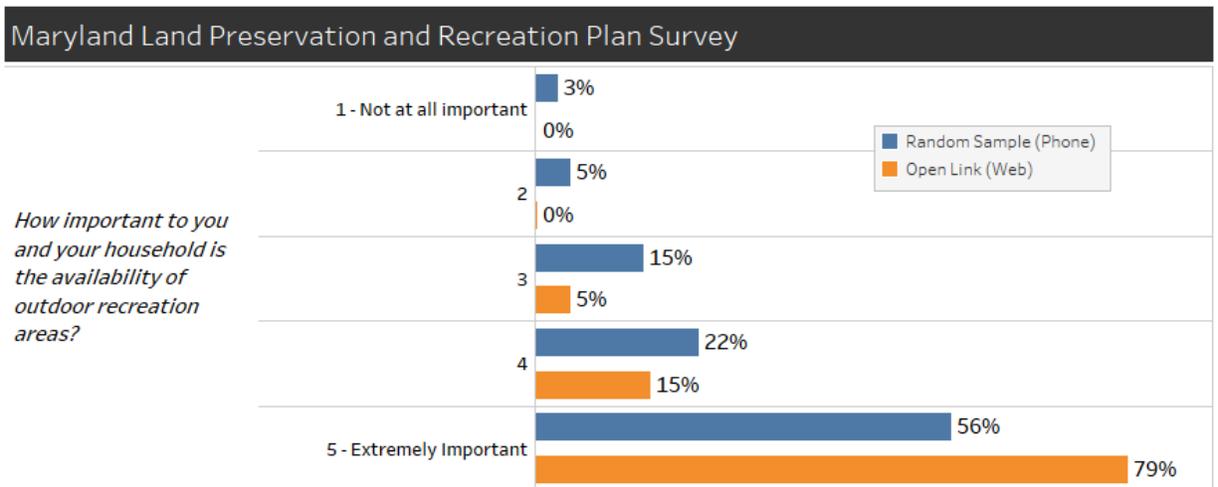


Source: RRC Associates and Greenplay

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).

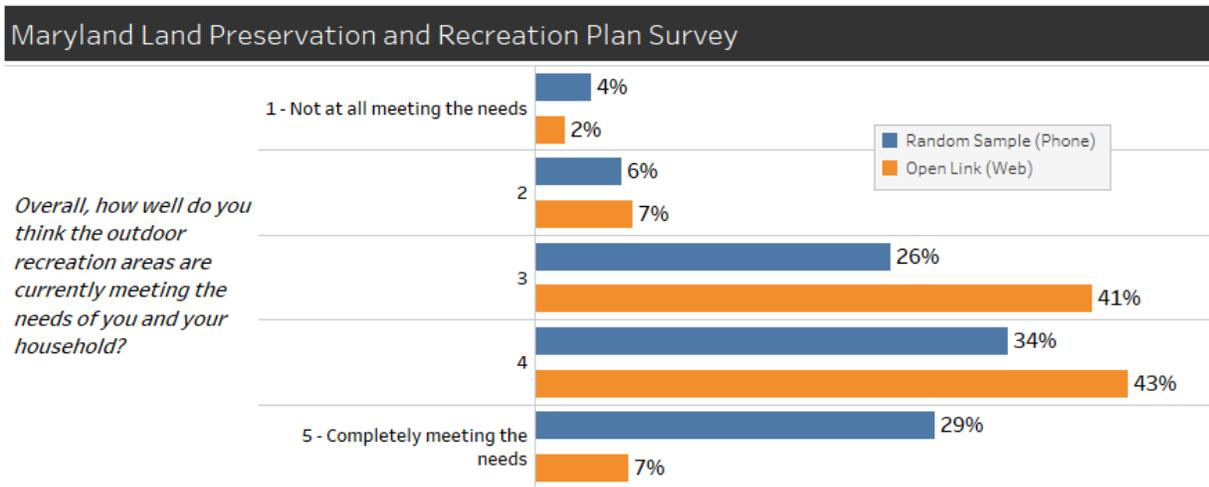
Figure 48



Source: RRC Associates and Greenplay

- 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

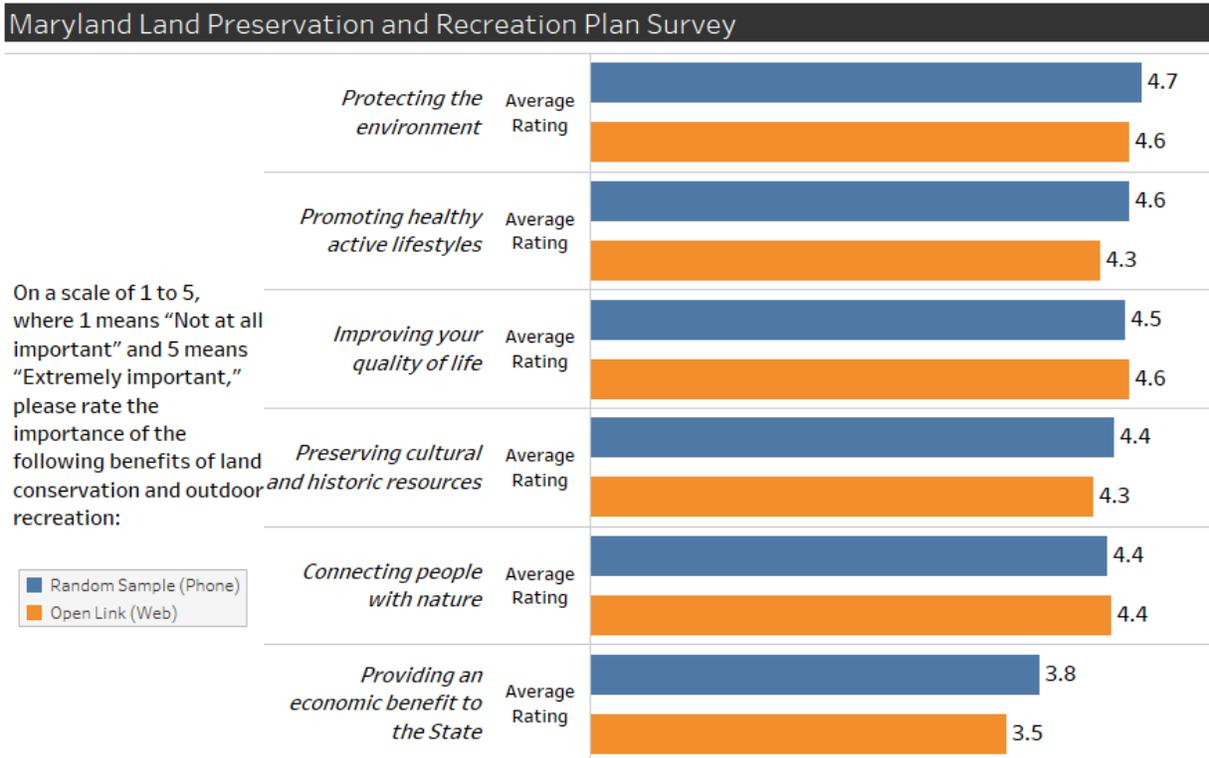


Source: RRC Associates and Greenplay

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

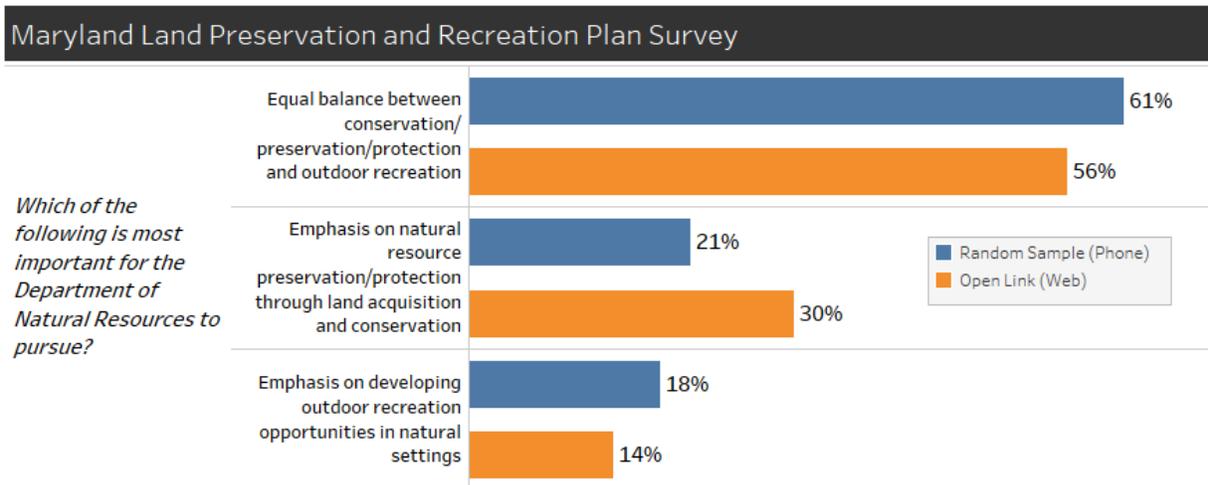


Source: RRC Associates and Greenplay

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

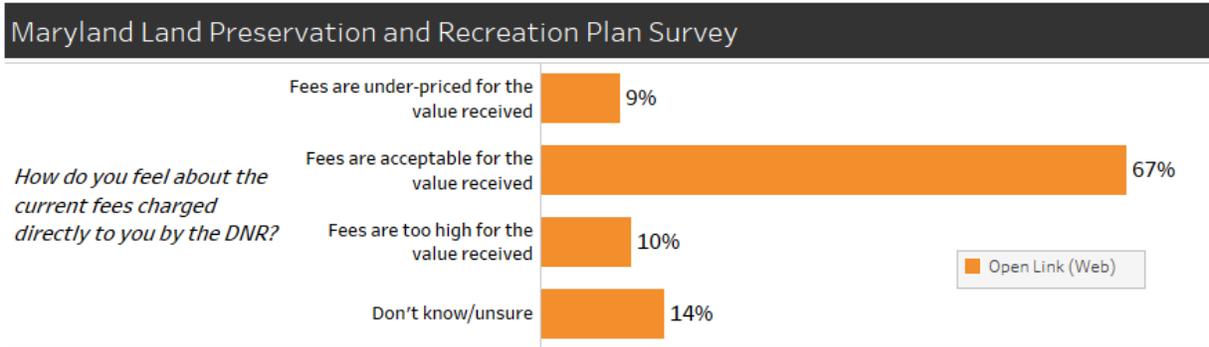


Source: RRC Associates and Greenplay

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

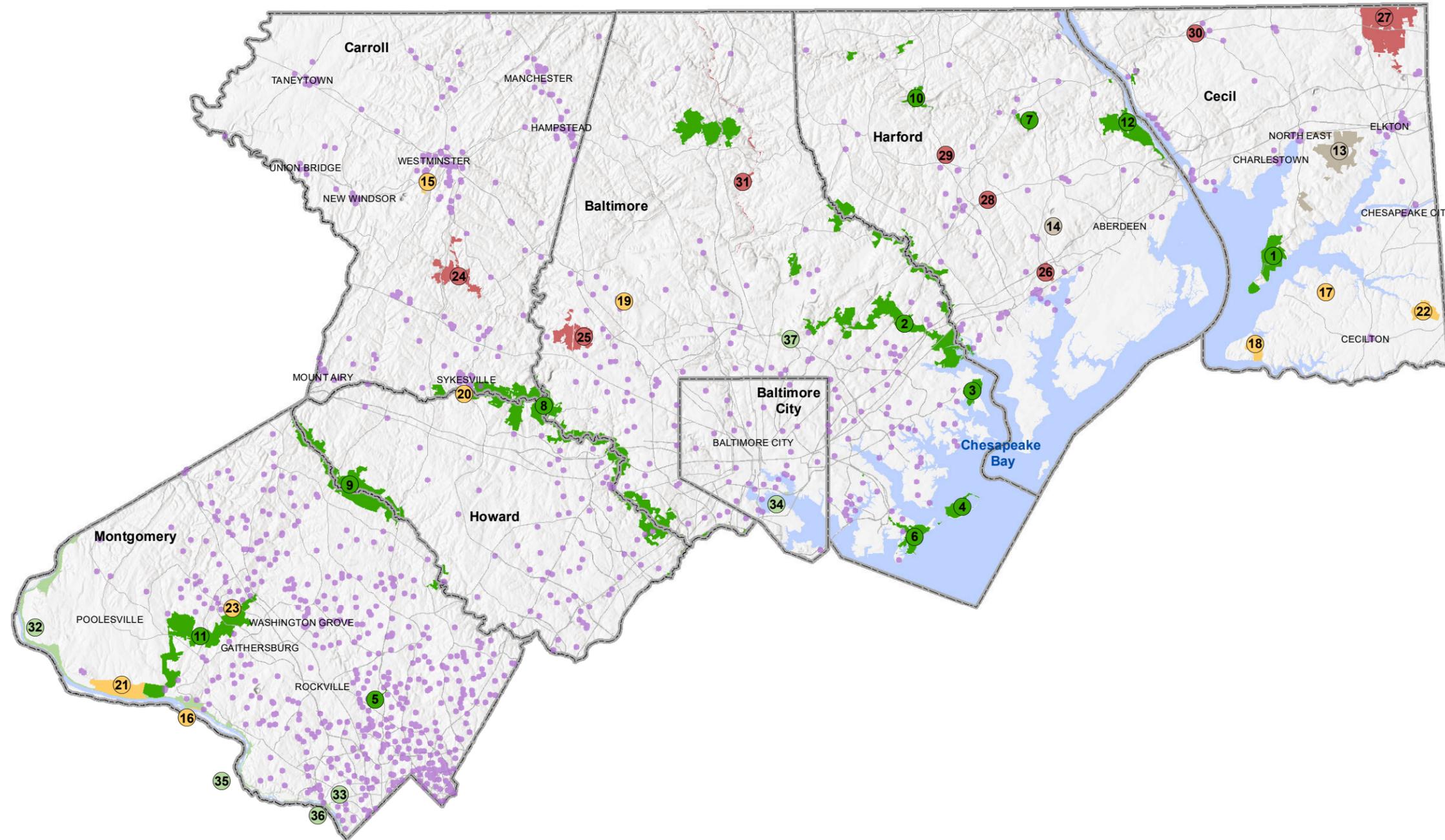


Source: RRC Associates and Greenplay

APPENDIX C: INVENTORY MAPS

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Map 1: Central Region Inventory



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 BESHERS 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

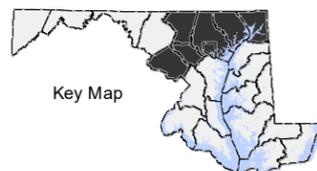
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

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 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 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

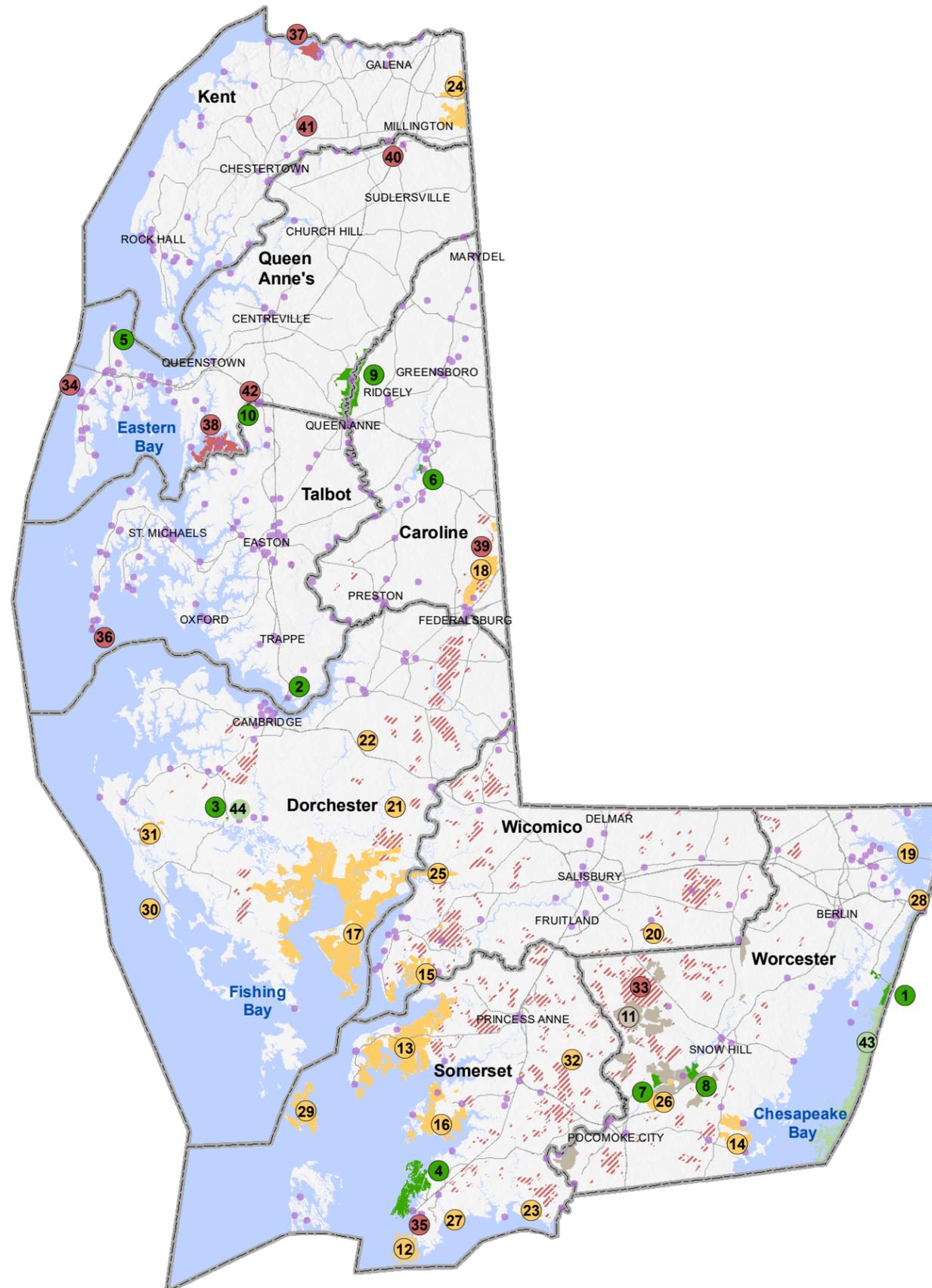
- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIEVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

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

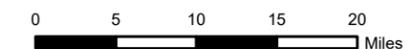
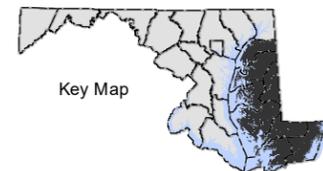
County Properties



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

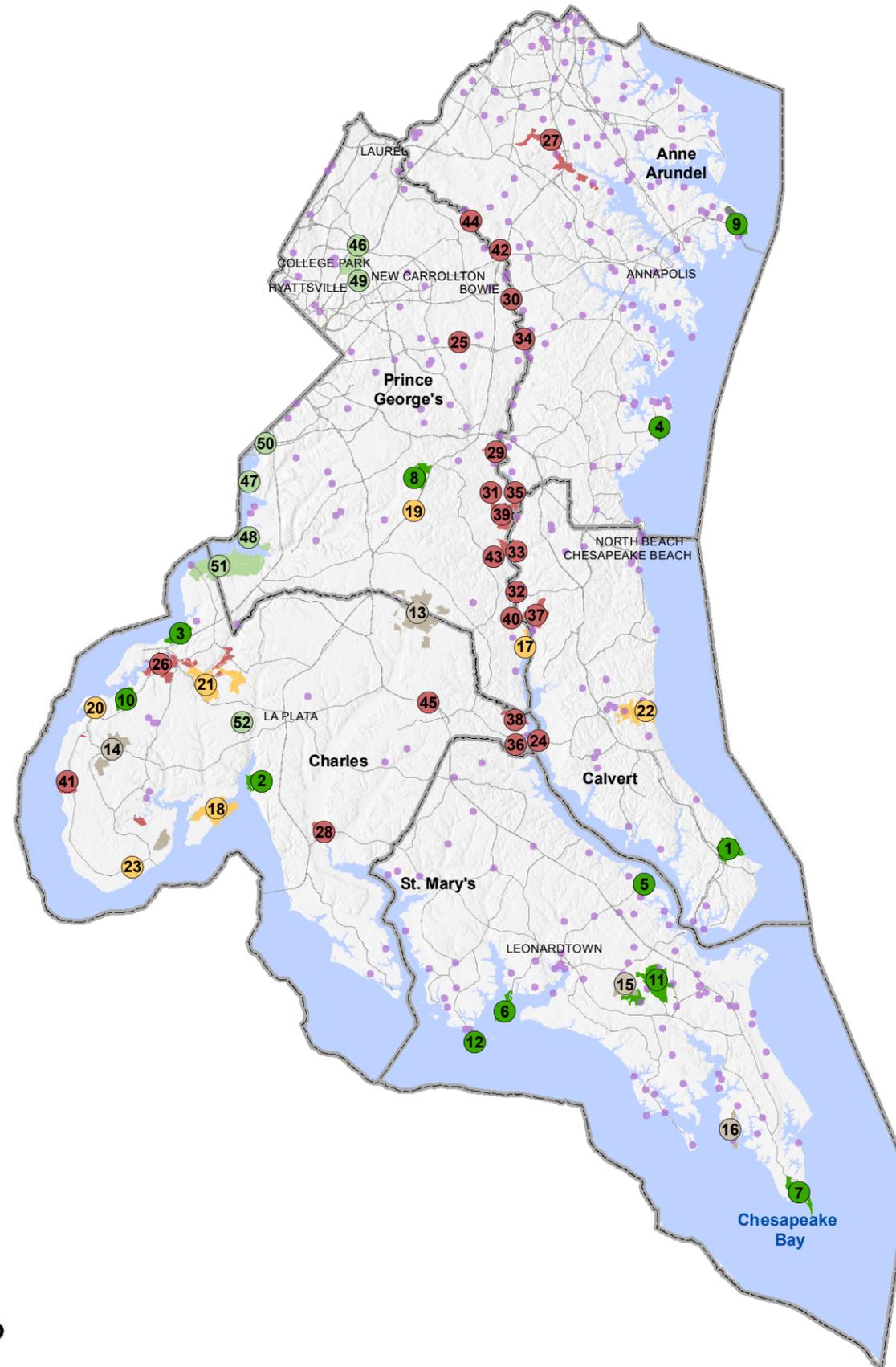
Other DNR Assets

- 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

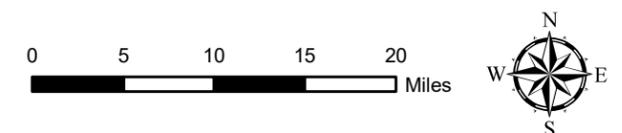
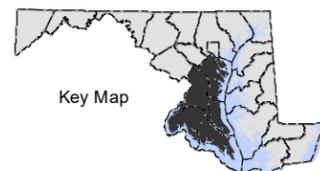
County Properties



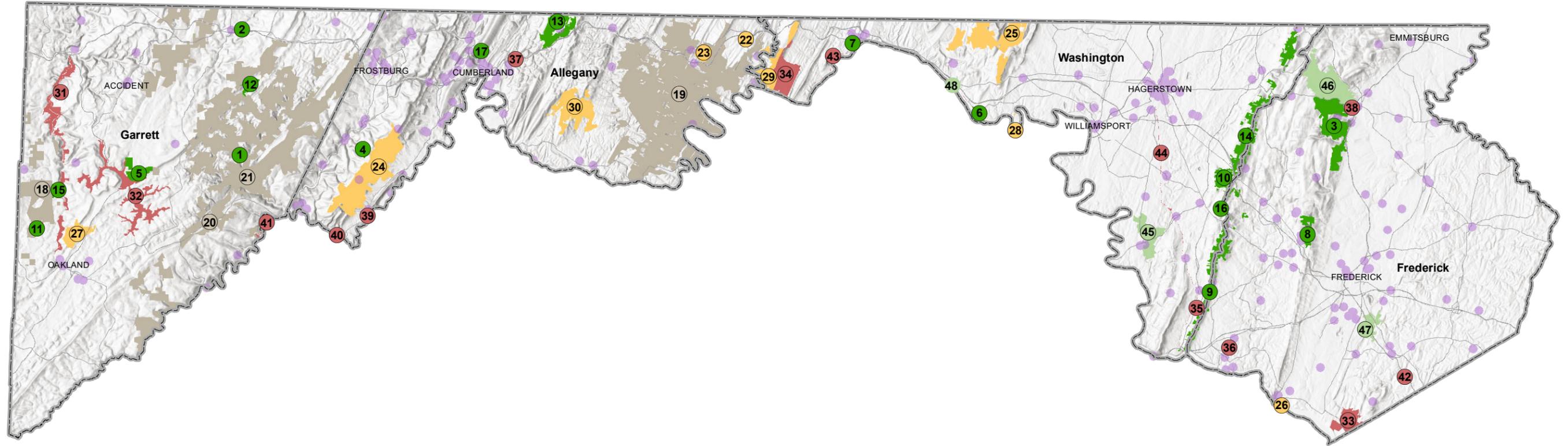
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



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

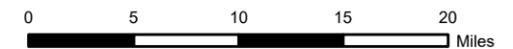
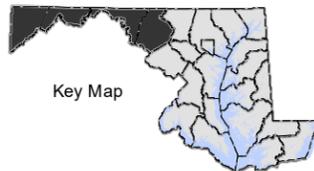
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

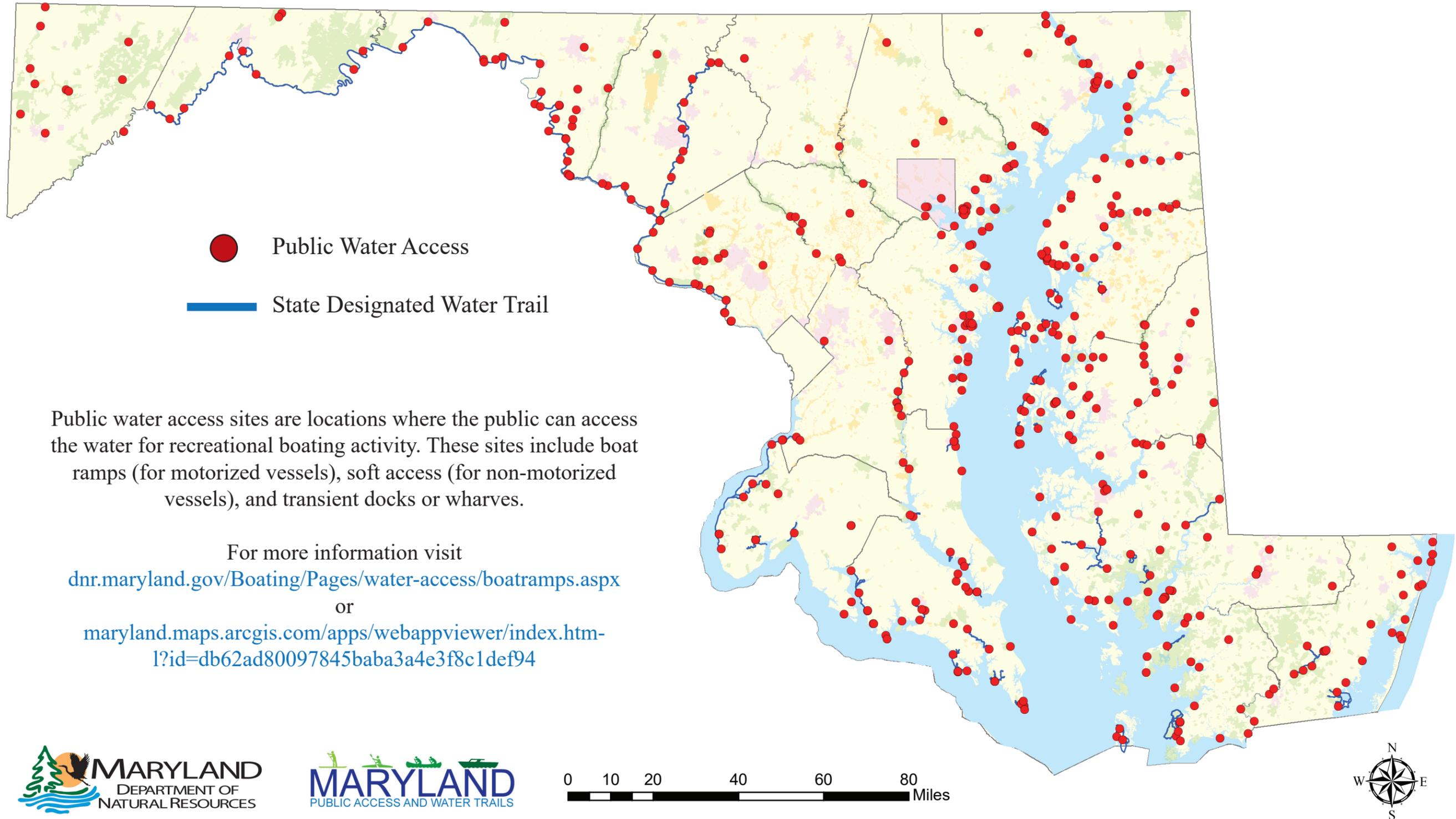
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



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.

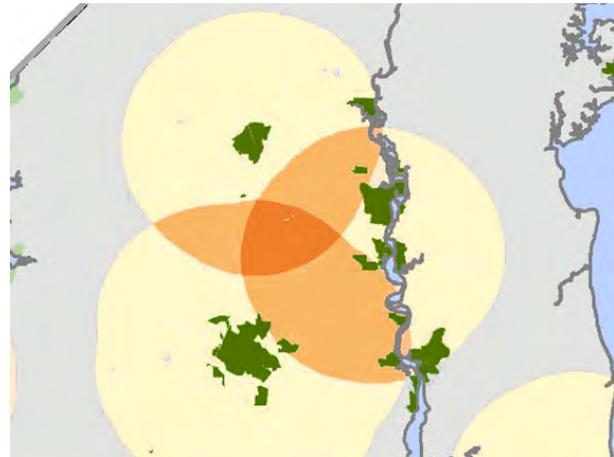
A 5-mile catchment was used for all analyses, a distance that corresponds to a 10-15 minute drive. This is well within the one-hour or less drive-time respondents to the 2018 Statewide Outdoor Recreation Survey indicated that they were willing to travel to access outdoor recreation opportunities.

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.

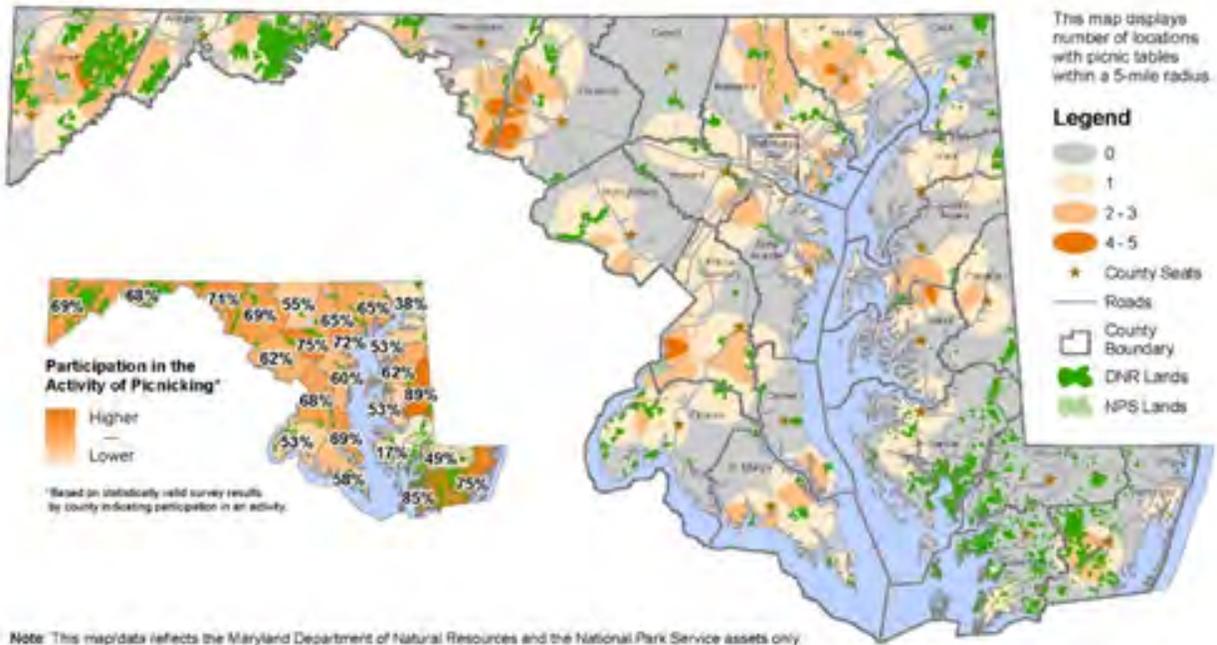
An example will illustrate this point. An examination of Map 3A shows that proximity to water recreation in St. Mary’s County is the lowest in the entire the region. However, it also shows that 74% of St. Mary’s County residents participate in water based recreation, more by far than any other county 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



Note: This map data reflects the Maryland Department of Natural Resources and the National Park Service assets only.

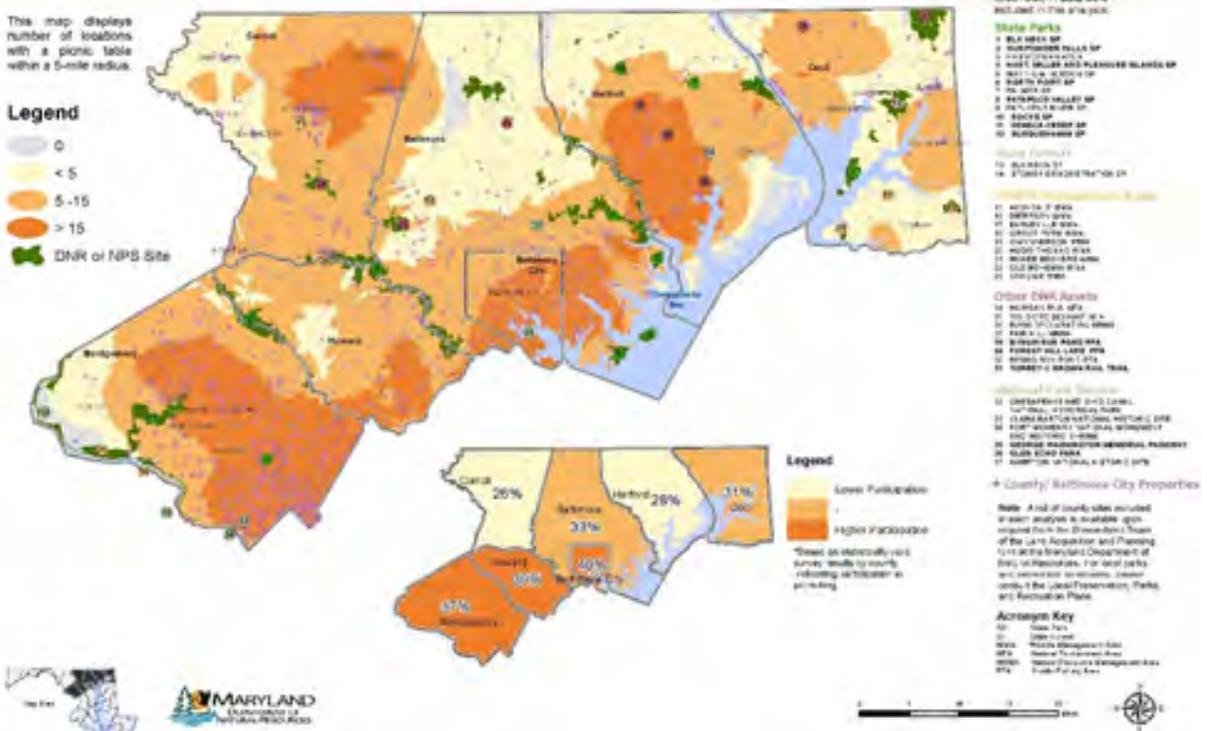


Map created by MD DNR in collaboration with the GRASP team. This report intended for planning and discussion only. Please refer to the original document for map details. © 2014 Maryland Department of Natural Resources. All rights reserved. 10/14/2014



Maryland Department of Natural Resources: 2019 Land Preservation and Recreation Plan

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



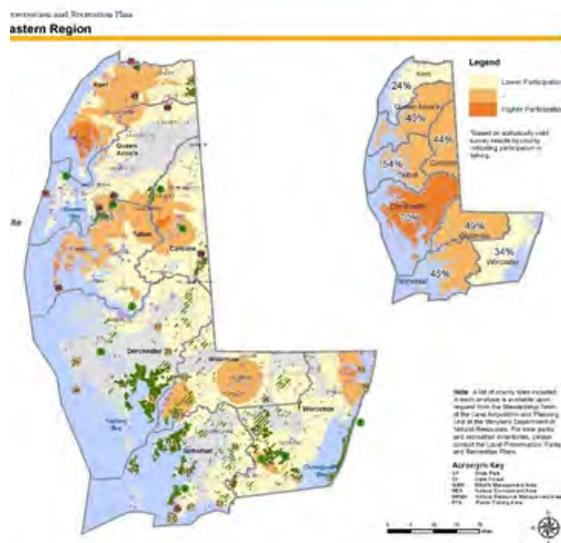
A comparison between picnicking maps from the 2014 Land Preservation and Recreation Plan (top) and 2019 Land Preservation and Recreation Plan (bottom) is not “apples to apples” due to variations in the site inventory, analysis methodology, and map scale. However, it does reveal the added value of County 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.

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

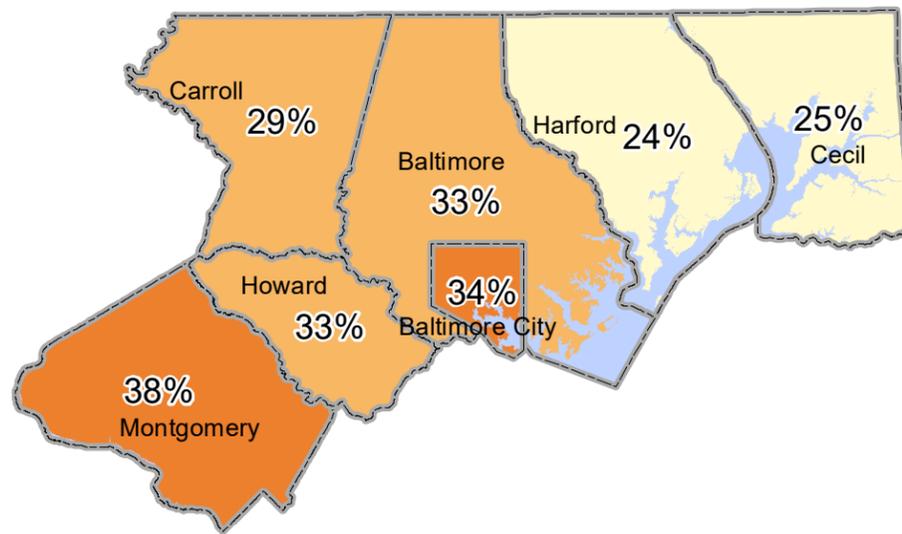
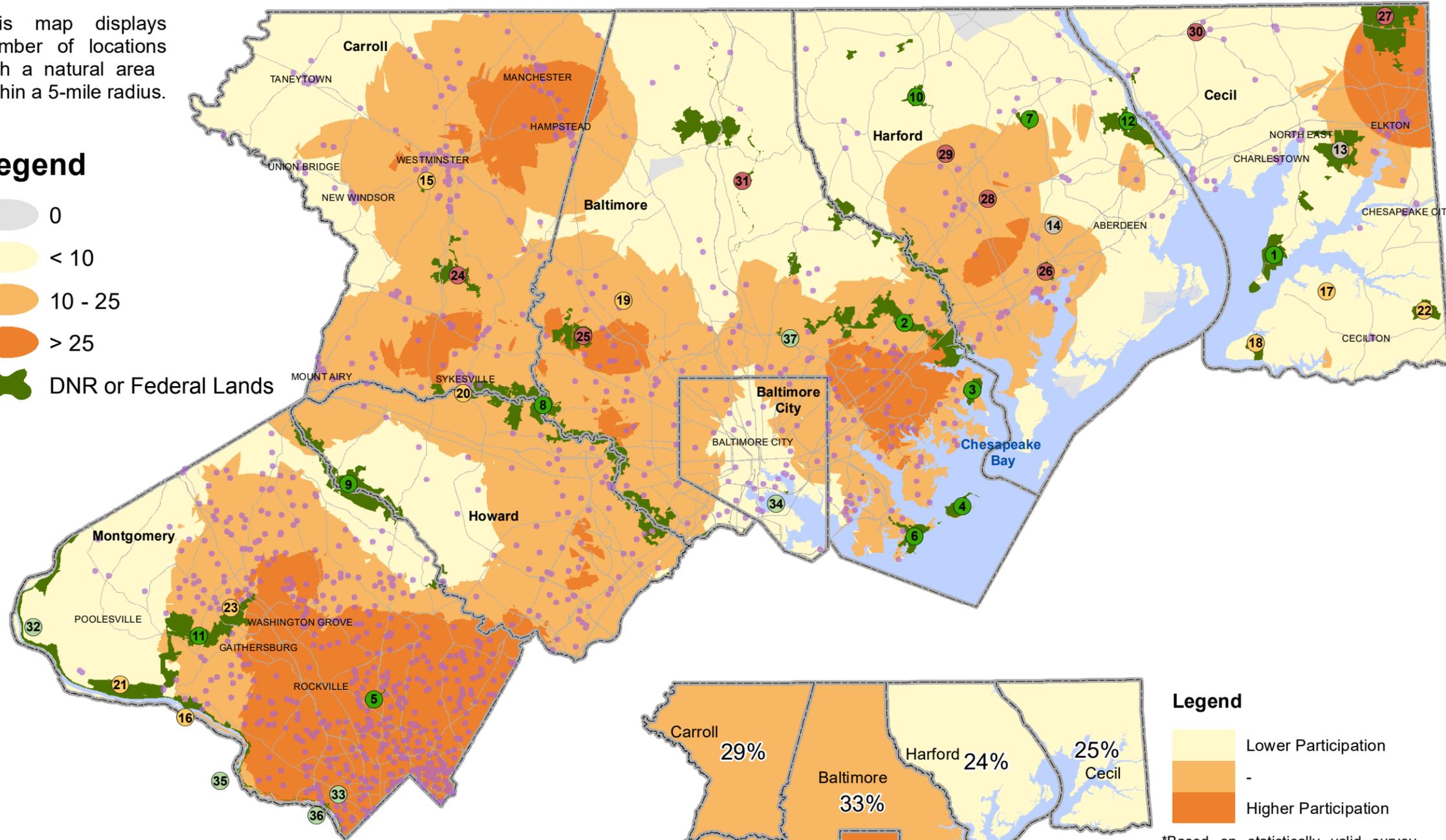
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Map 1A: 5-Mile Proximity to Natural Areas - Central Region

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

Legend

- 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

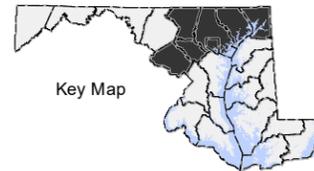
- ### Other DNR Assets
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL

- ### 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 LECOMPT 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

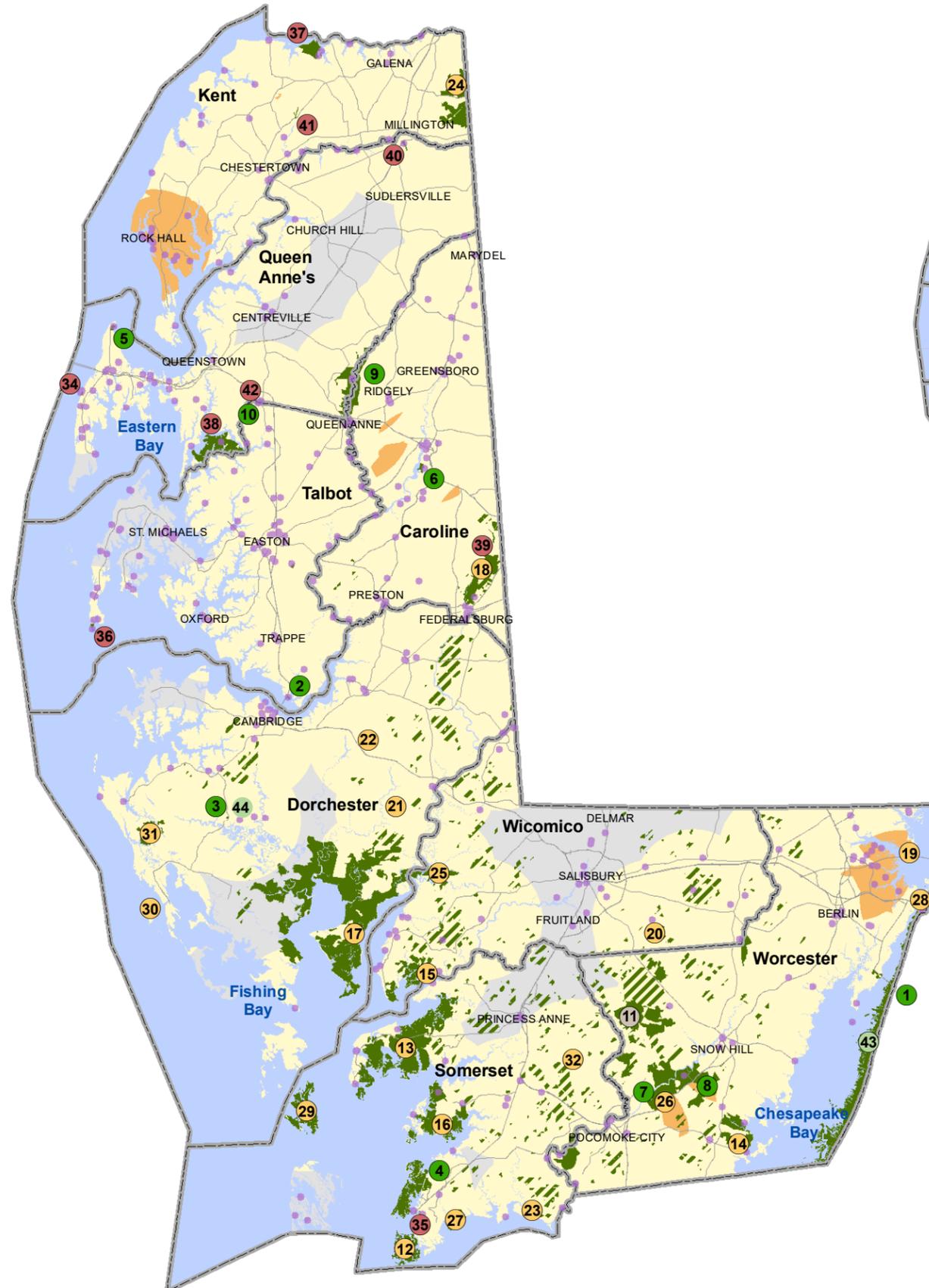
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

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

Legend

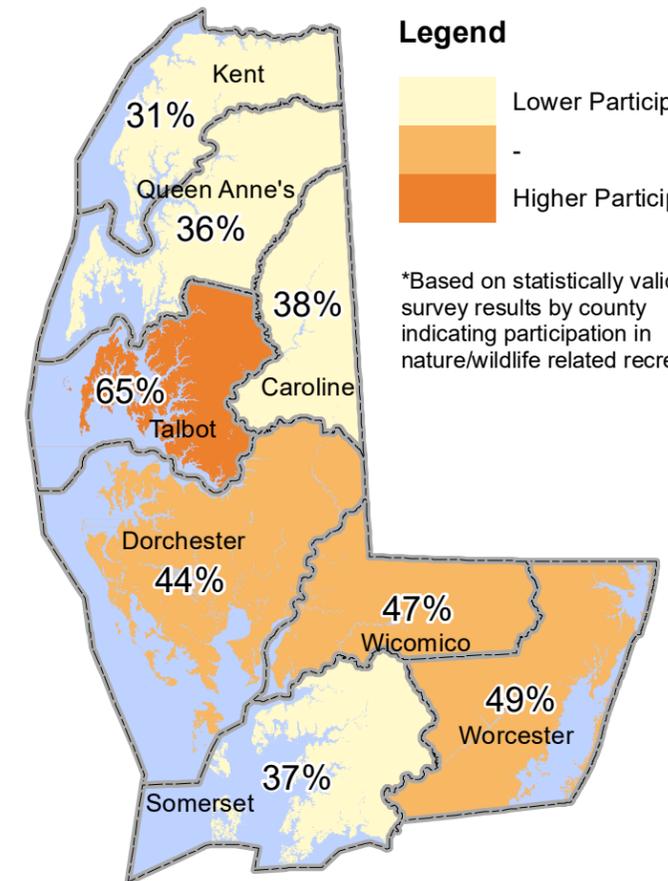
- 0
- < 10
- 10 - 25
- > 25
- DNR or Federal Lands



Legend

- Lower Participation
-
- Higher Participation

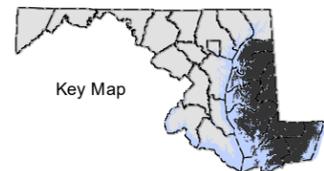
*Based on statistically valid survey results by county indicating participation in nature/wildlife related recreation.



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

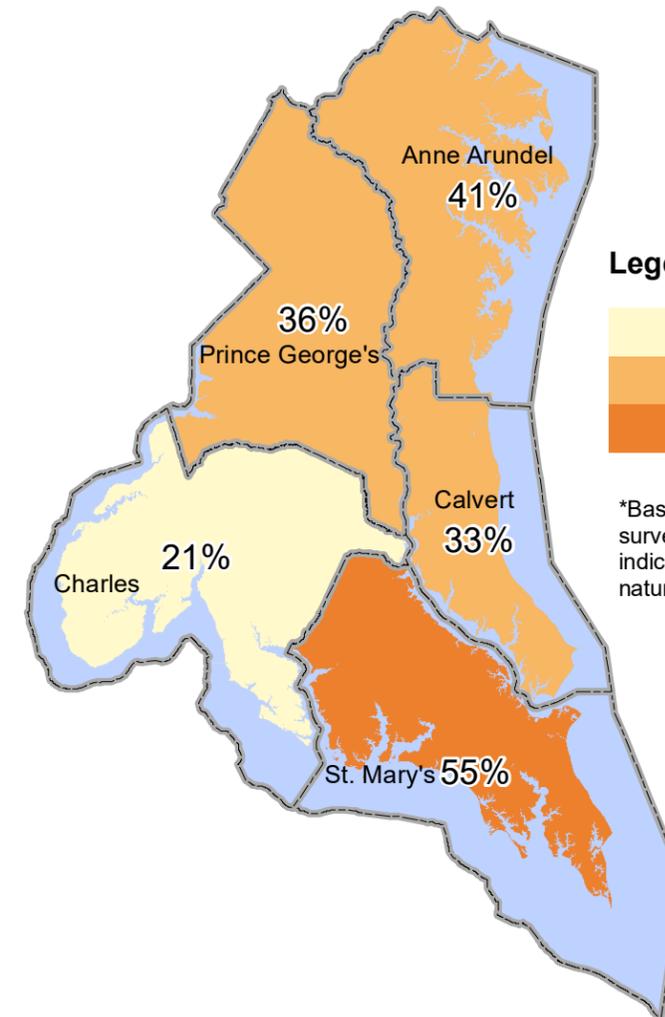
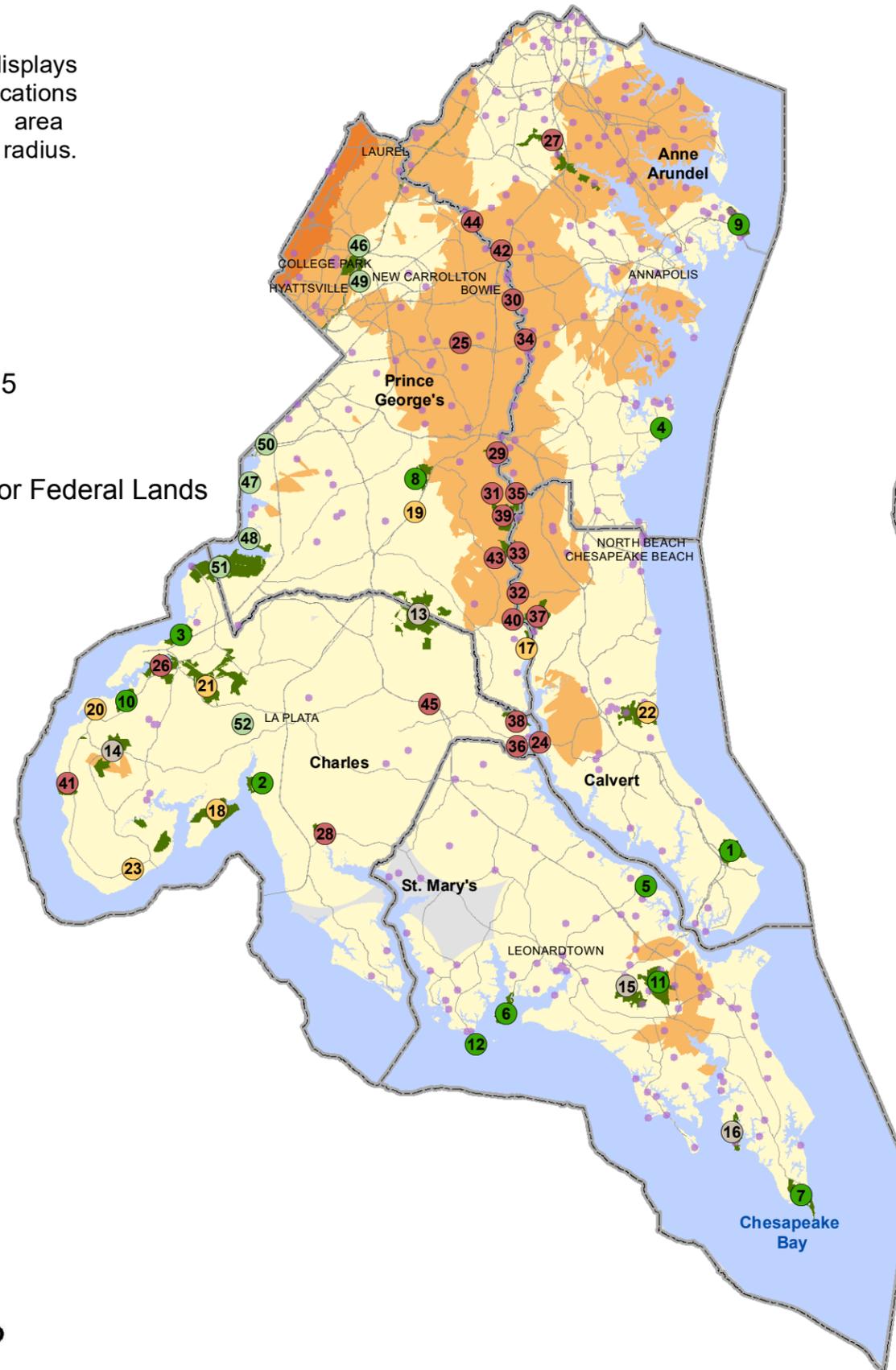
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

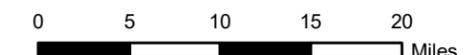
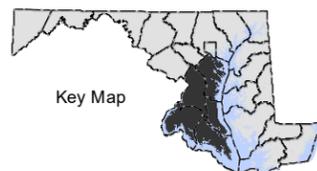
- Lower Participation
-
- Higher Participation

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

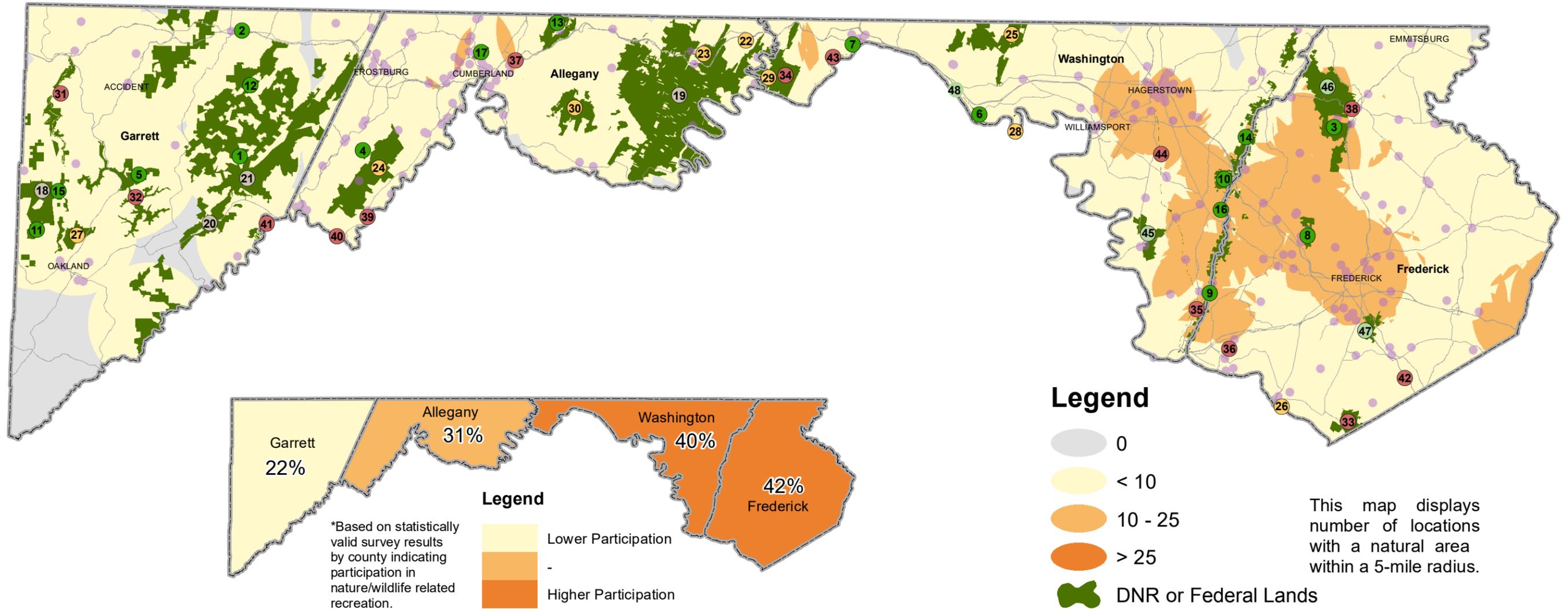
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



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

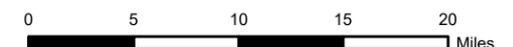
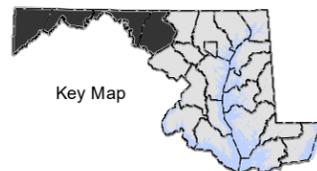
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

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.

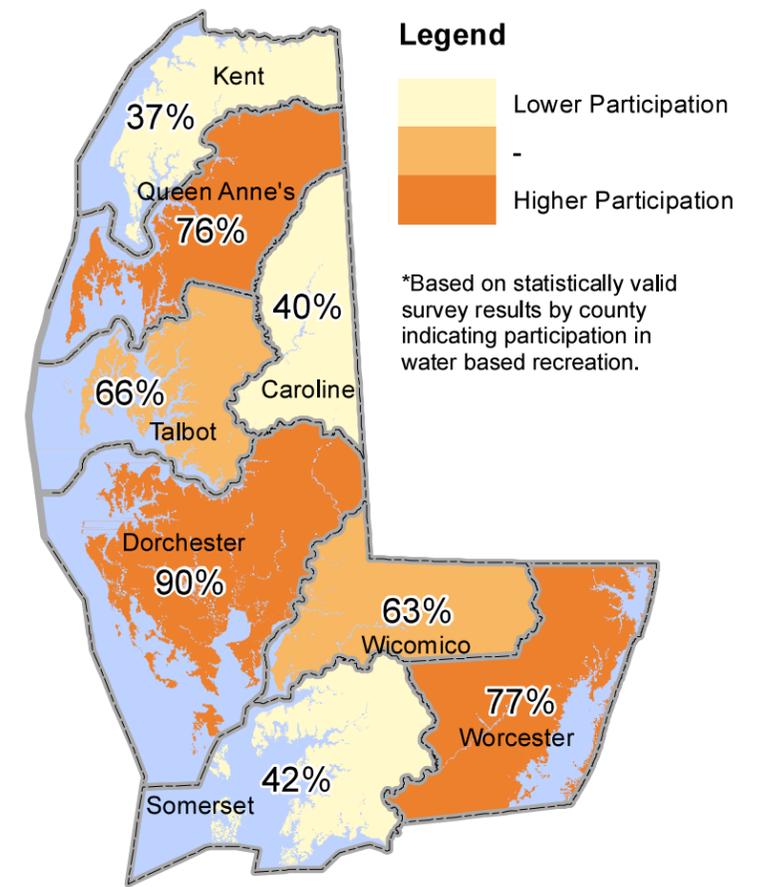
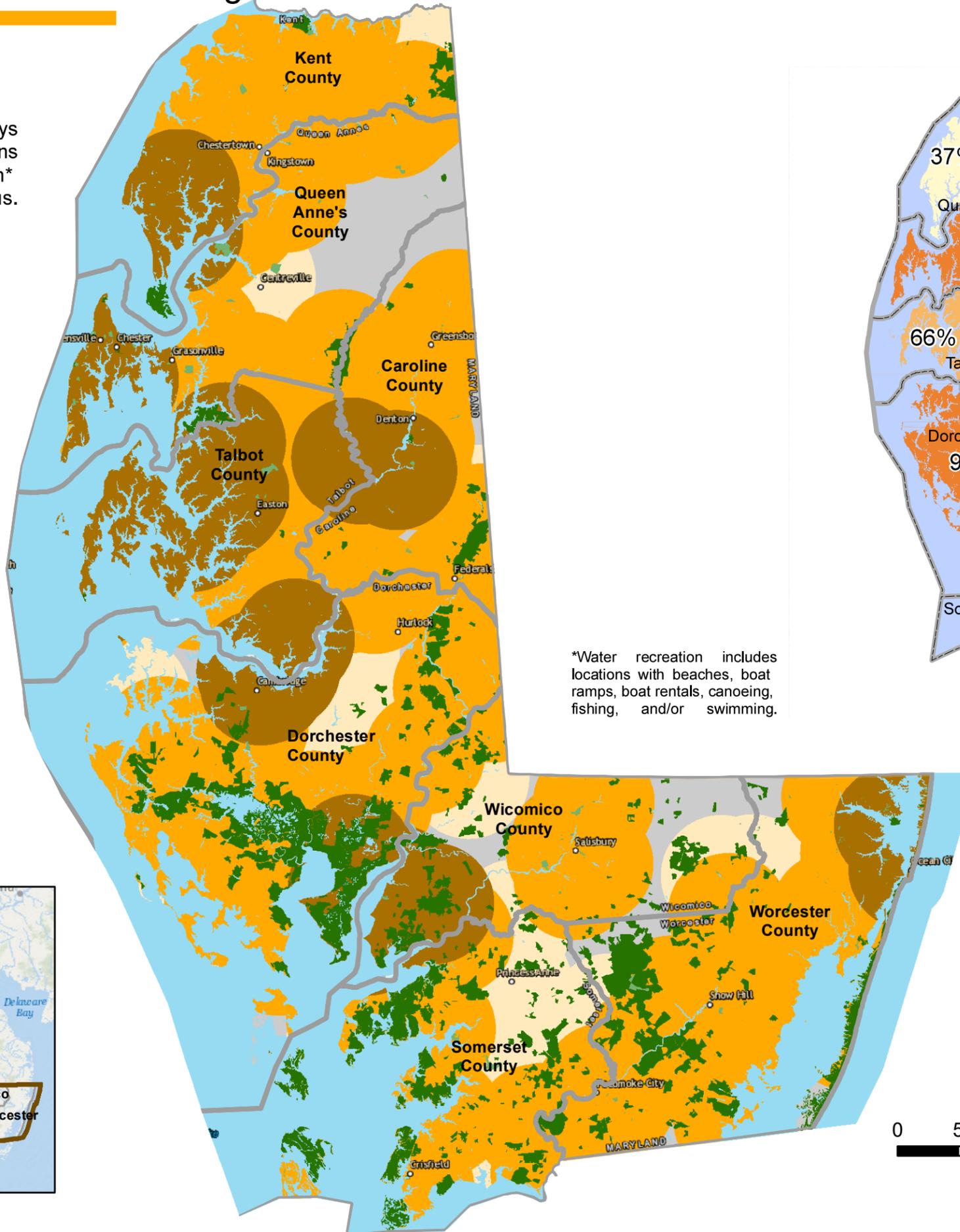
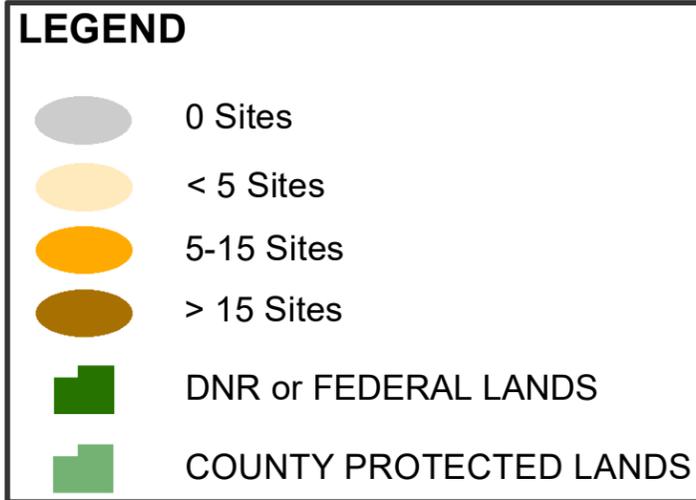
Acronym Key

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

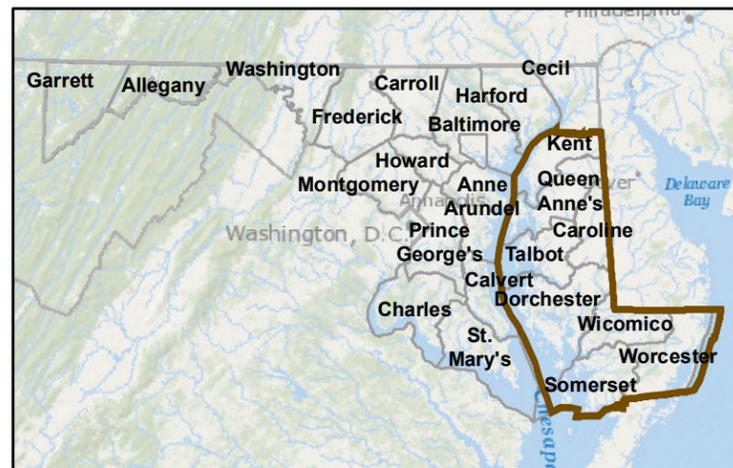


5-Mile Proximity to Water Recreation - Eastern Region

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.

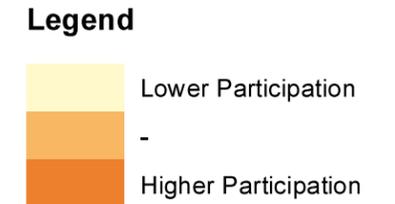
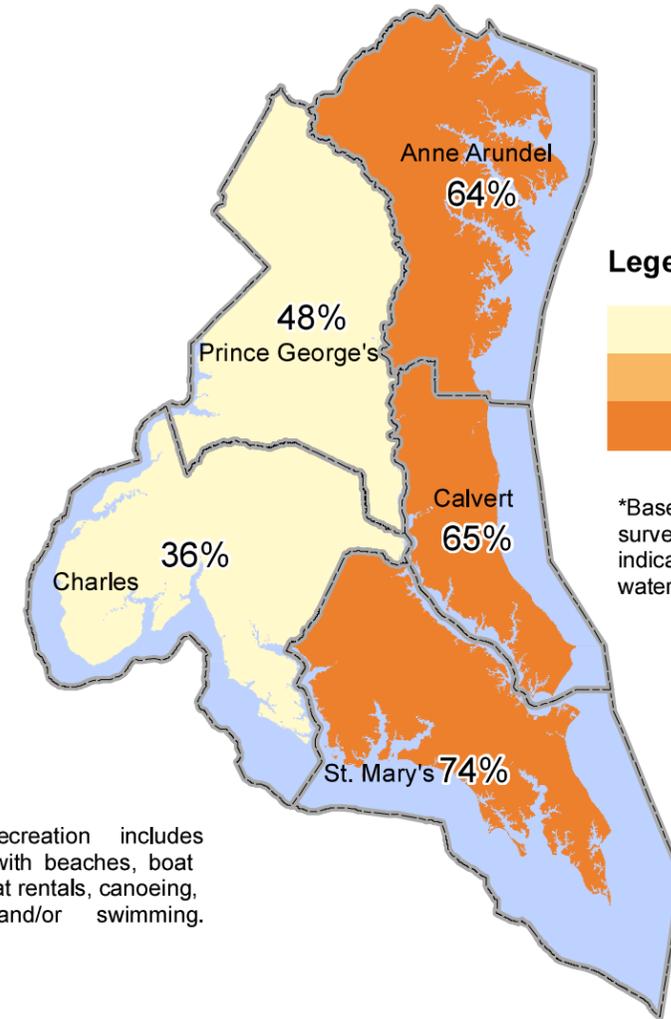
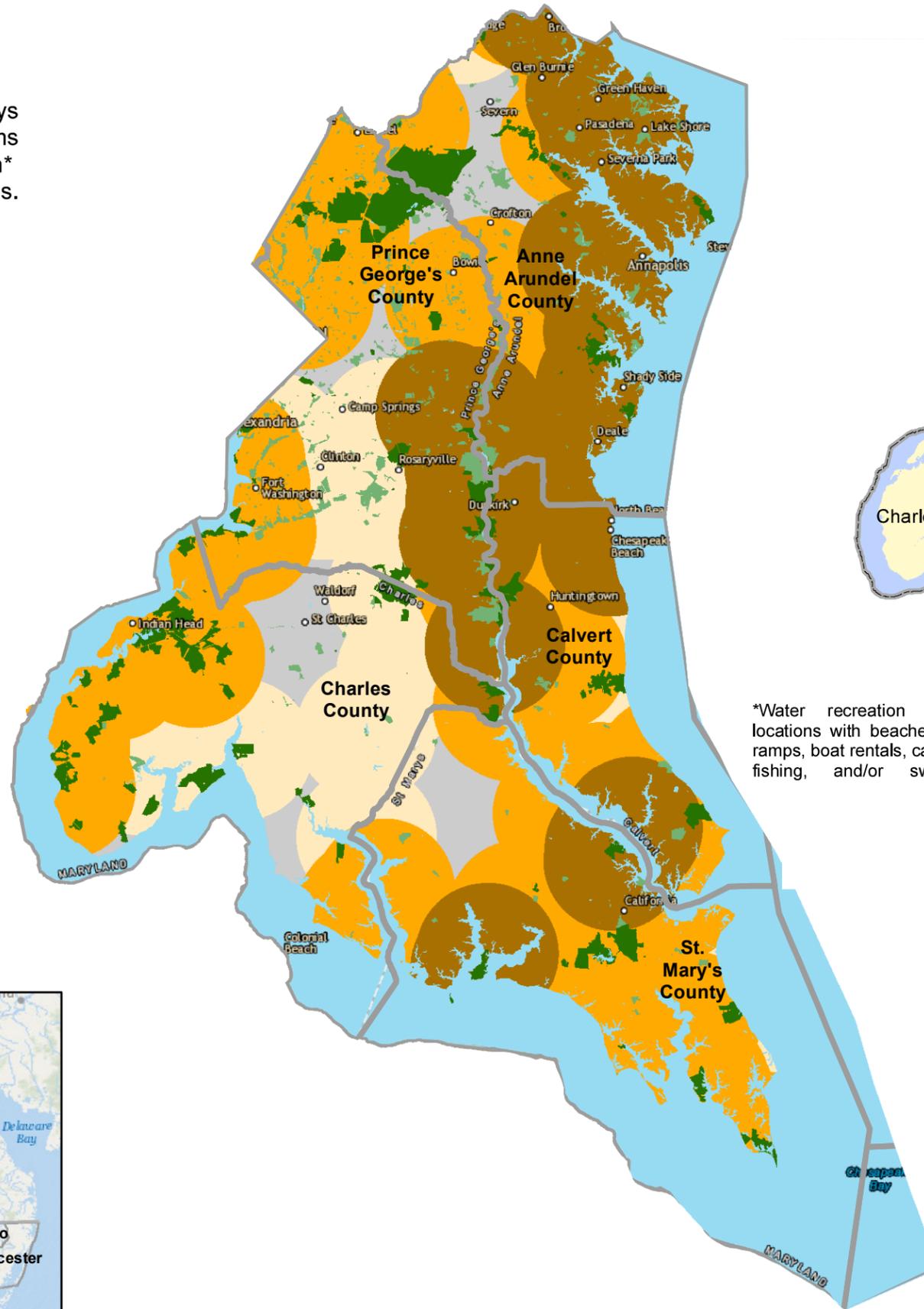
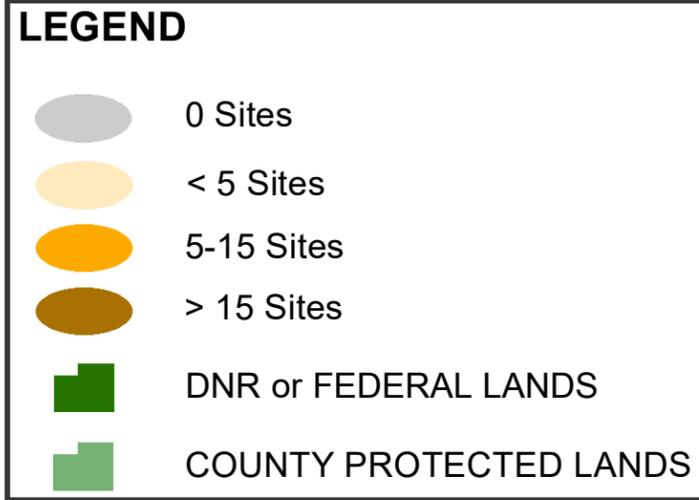


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



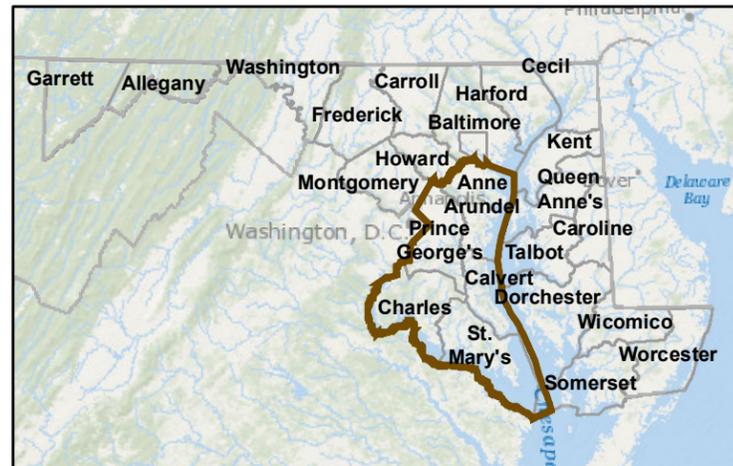
5-Mile Proximity to Water Recreation - Southern Region

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.

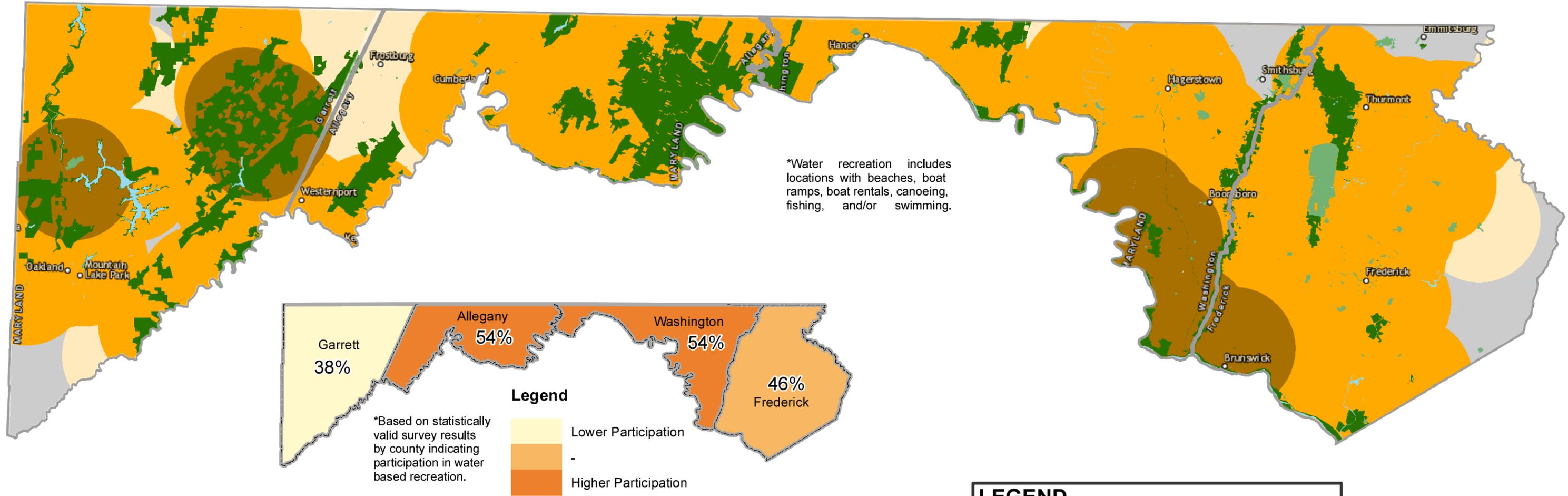


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

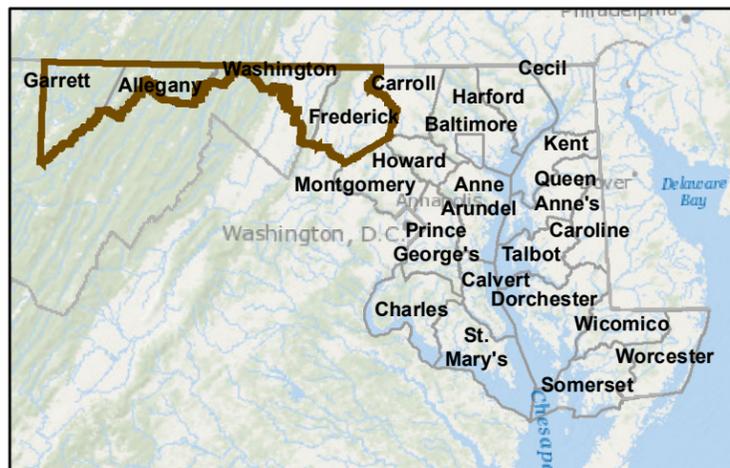
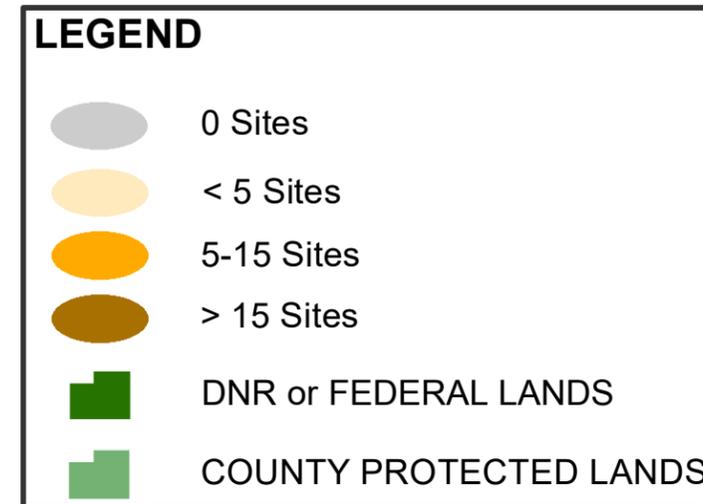


5-Mile Proximity to Water Recreation - Western Region

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



*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.

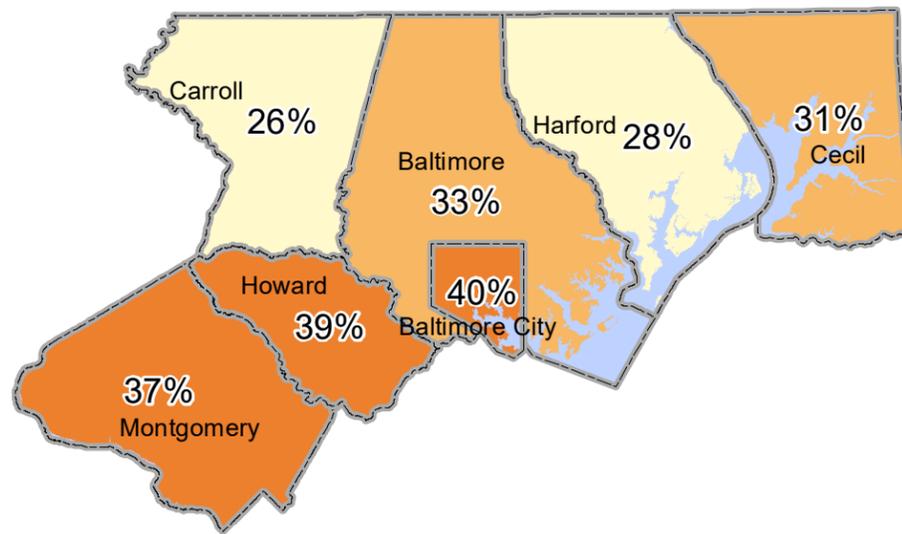
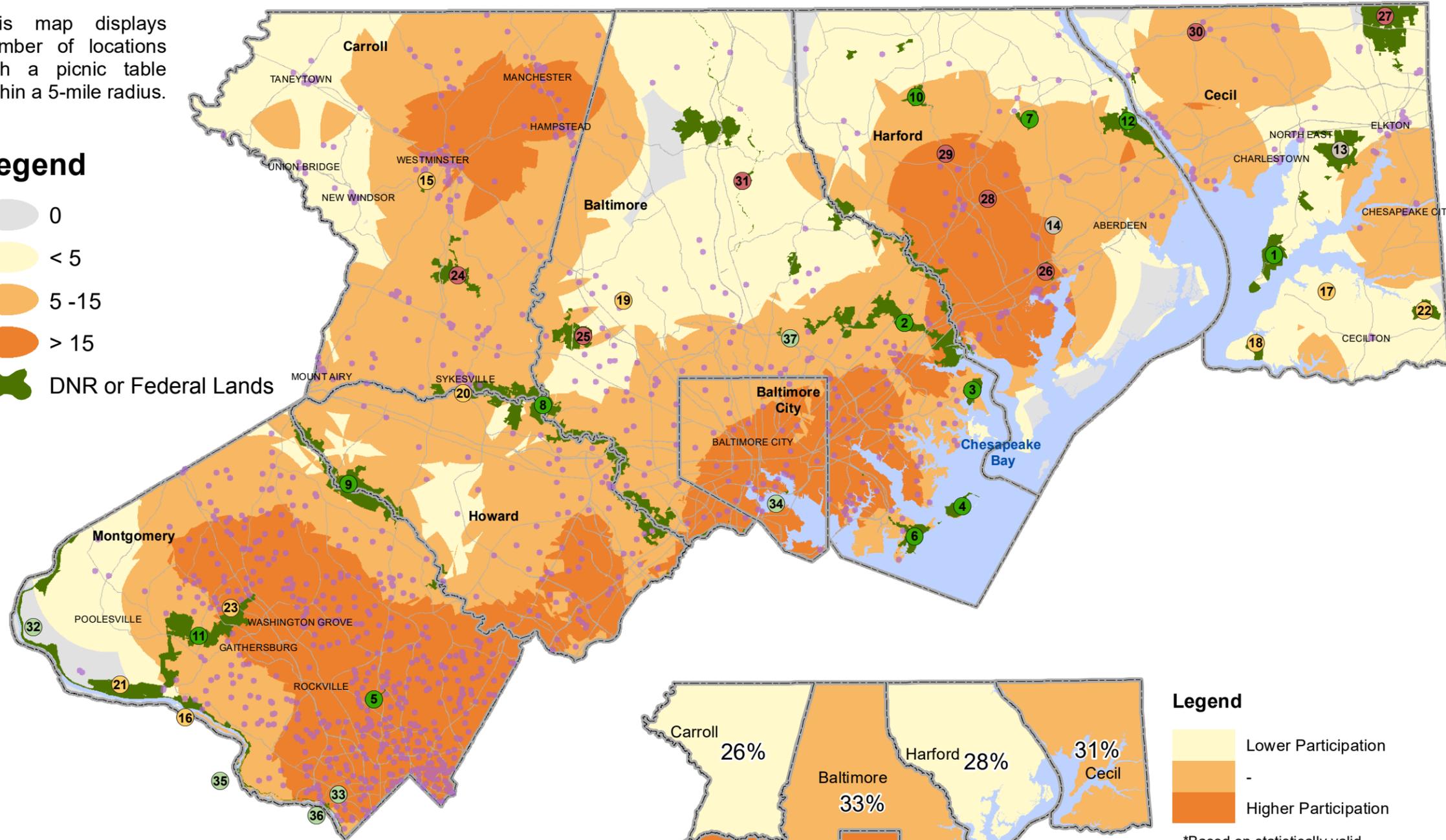


Map 1C: 5-Mile Proximity to Picnicking - Central Region

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 BESHERS WMA
 - 22 OLD BOHEMIA WMA
 - 23 STRIDER WMA

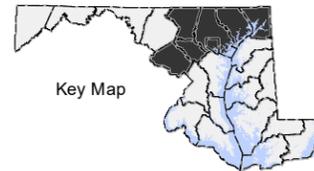
- ### Other DNR Assets
- 24 MORGAN RUN NEA
 - 25 SOLDIERS DELIGHT NEA
 - 26 BUSH DECLARATION NRMA
 - 27 FAIR HILL NRMA
 - 28 BYNUM RUN POND PFA
 - 29 FOREST HILL LAKE PFA
 - 30 RISING SUN POND PFA
 - 31 TORREY C BROWN RAIL TRAIL

- ### 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 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

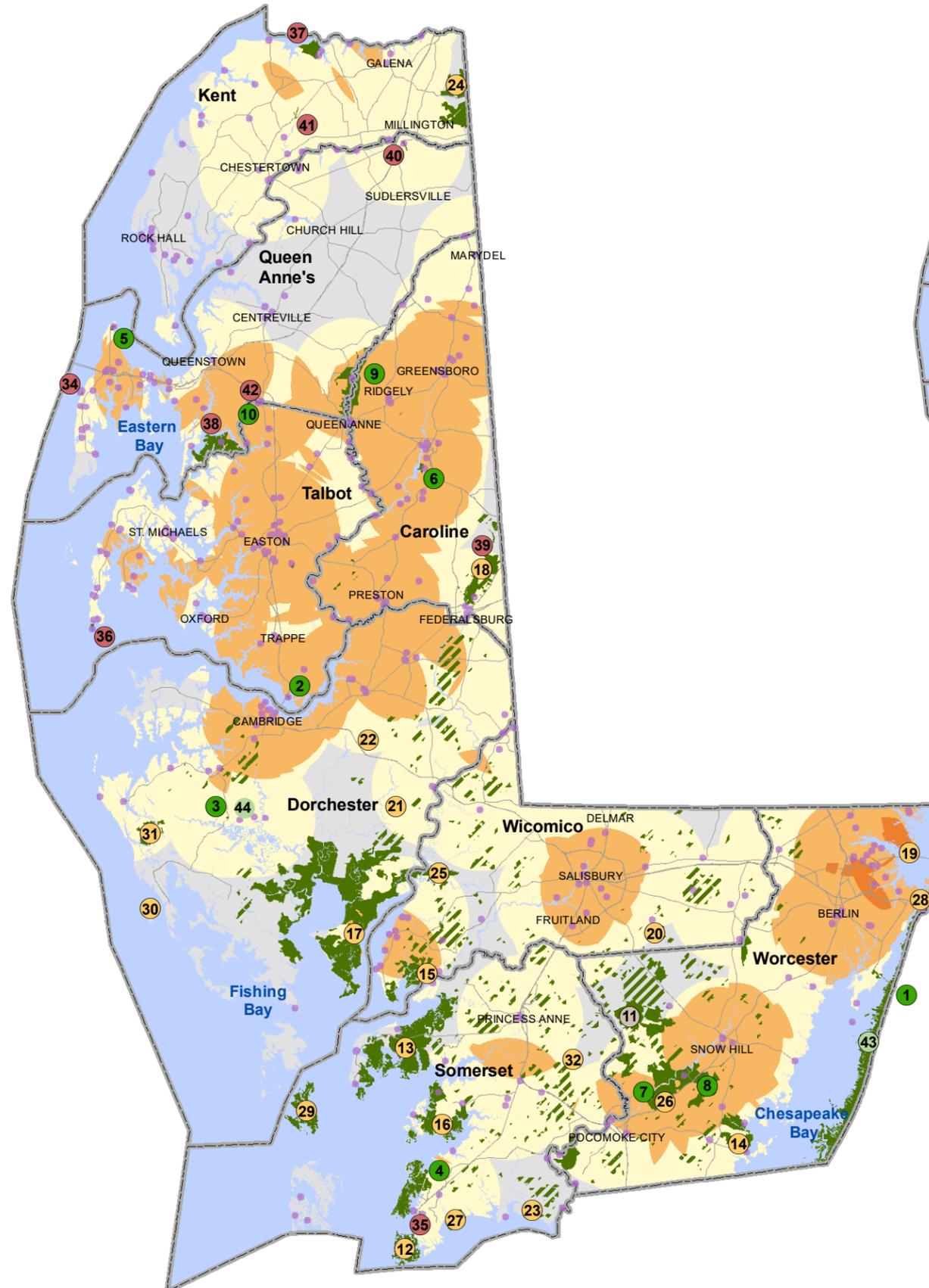
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

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

Legend

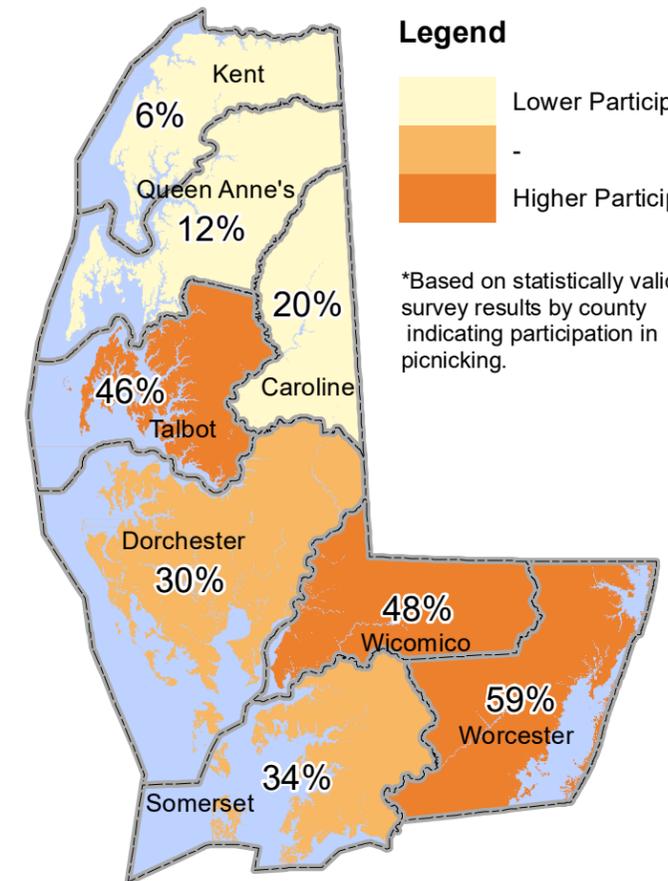
- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Lands



Legend

- Lower Participation
-
- Higher Participation

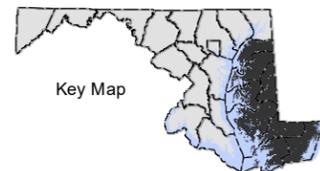
*Based on statistically valid survey results by county indicating participation in picnicking.



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 MILLTOWN LANDING NRMA
- 41 NANJEMOY NRMA
- 42 PRIDE FINANCE NRMA
- 43 SPICE CREEK NRMA
- 44 UHLER NRMA
- 45 HUGHSVILLE POND PFA

Federal Lands

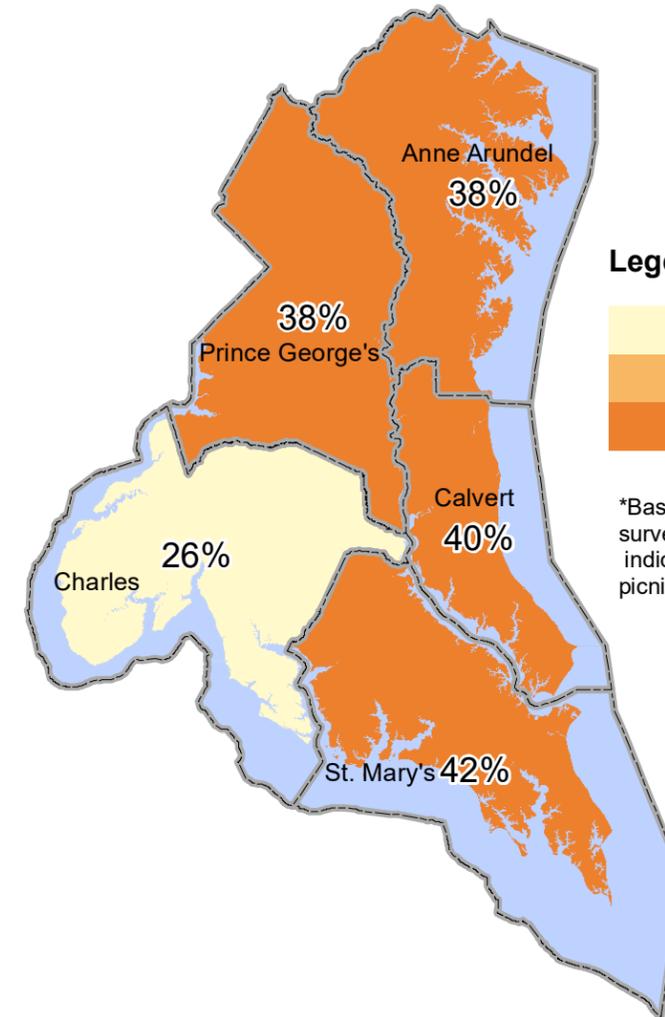
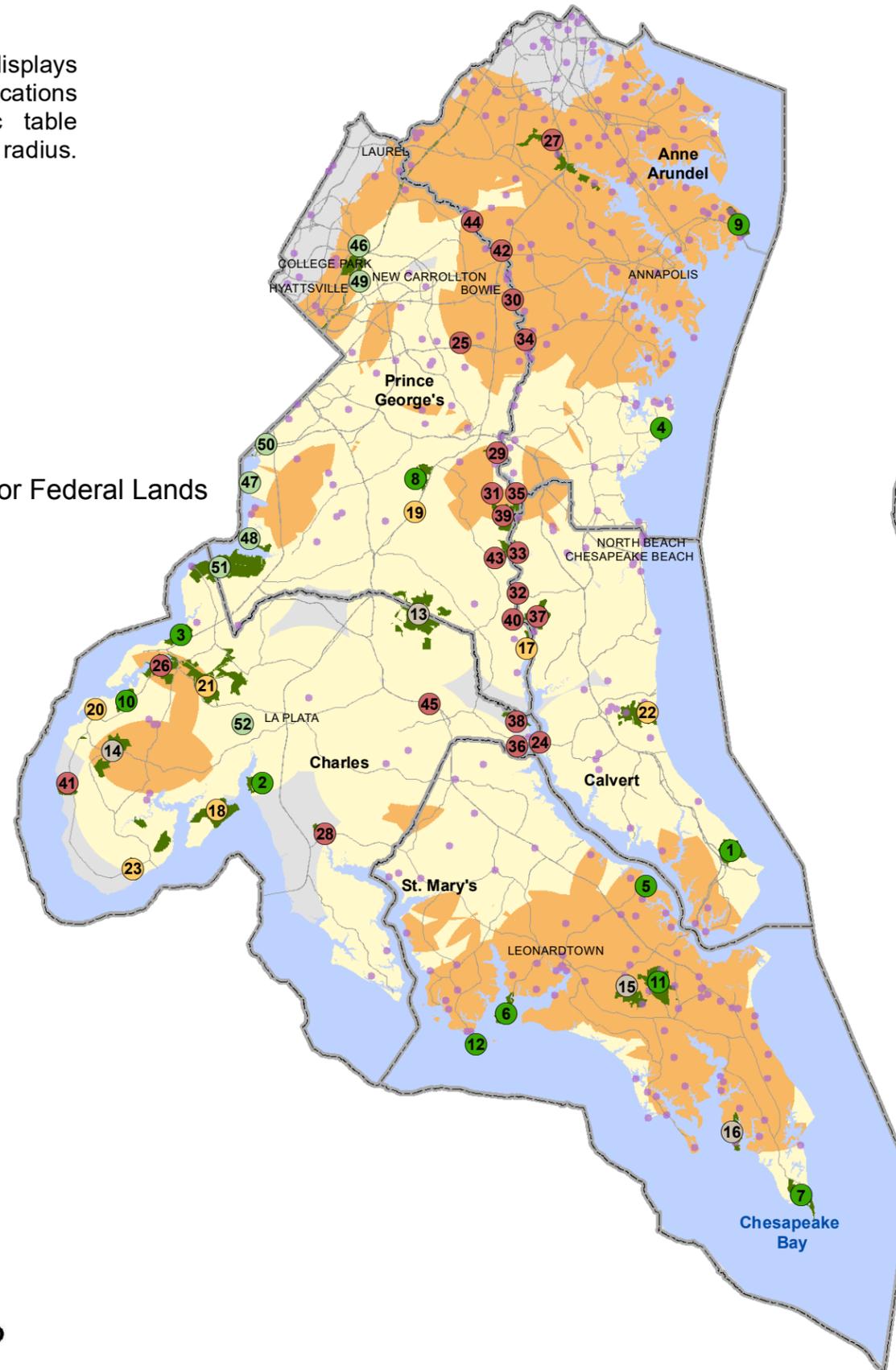
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

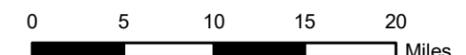
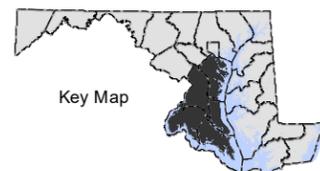
- Lower Participation
-
- Higher Participation

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

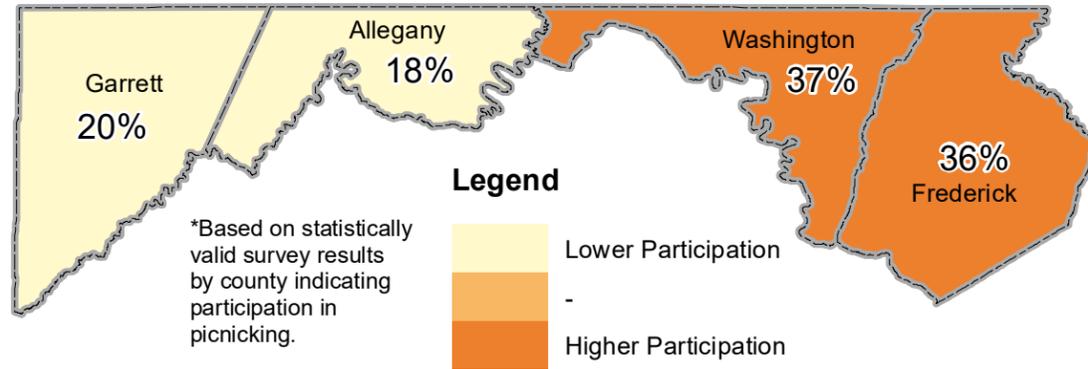
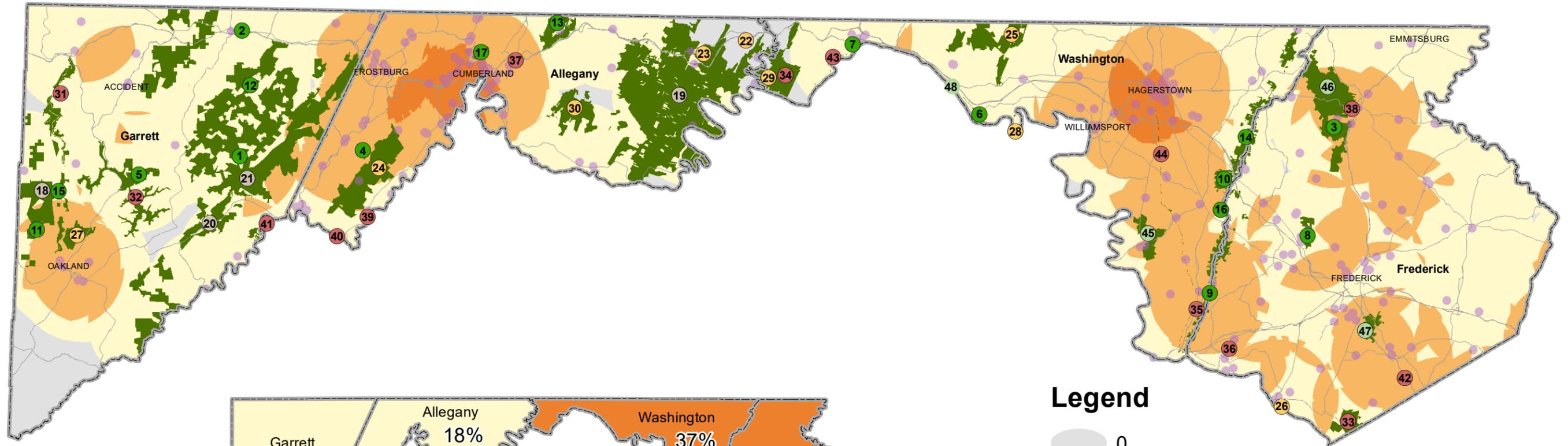
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



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

Legend

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

This map displays number of locations with a picnic table 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 AYODER 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

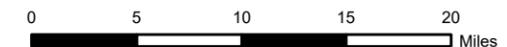
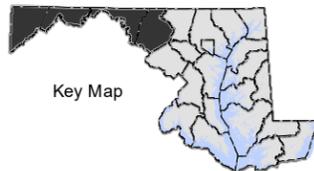
- 45 **ANTIETAM NATIONAL BATTLEFIELD**
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 **CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK**

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

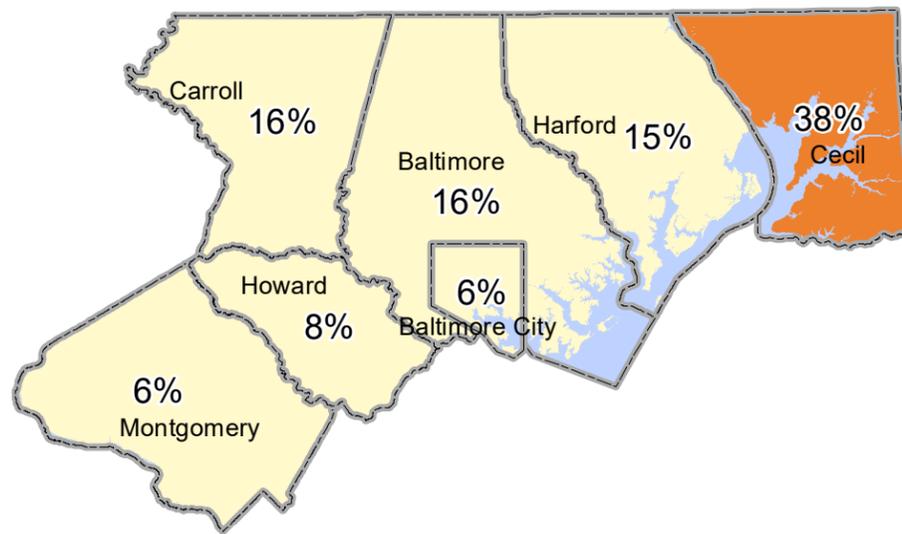
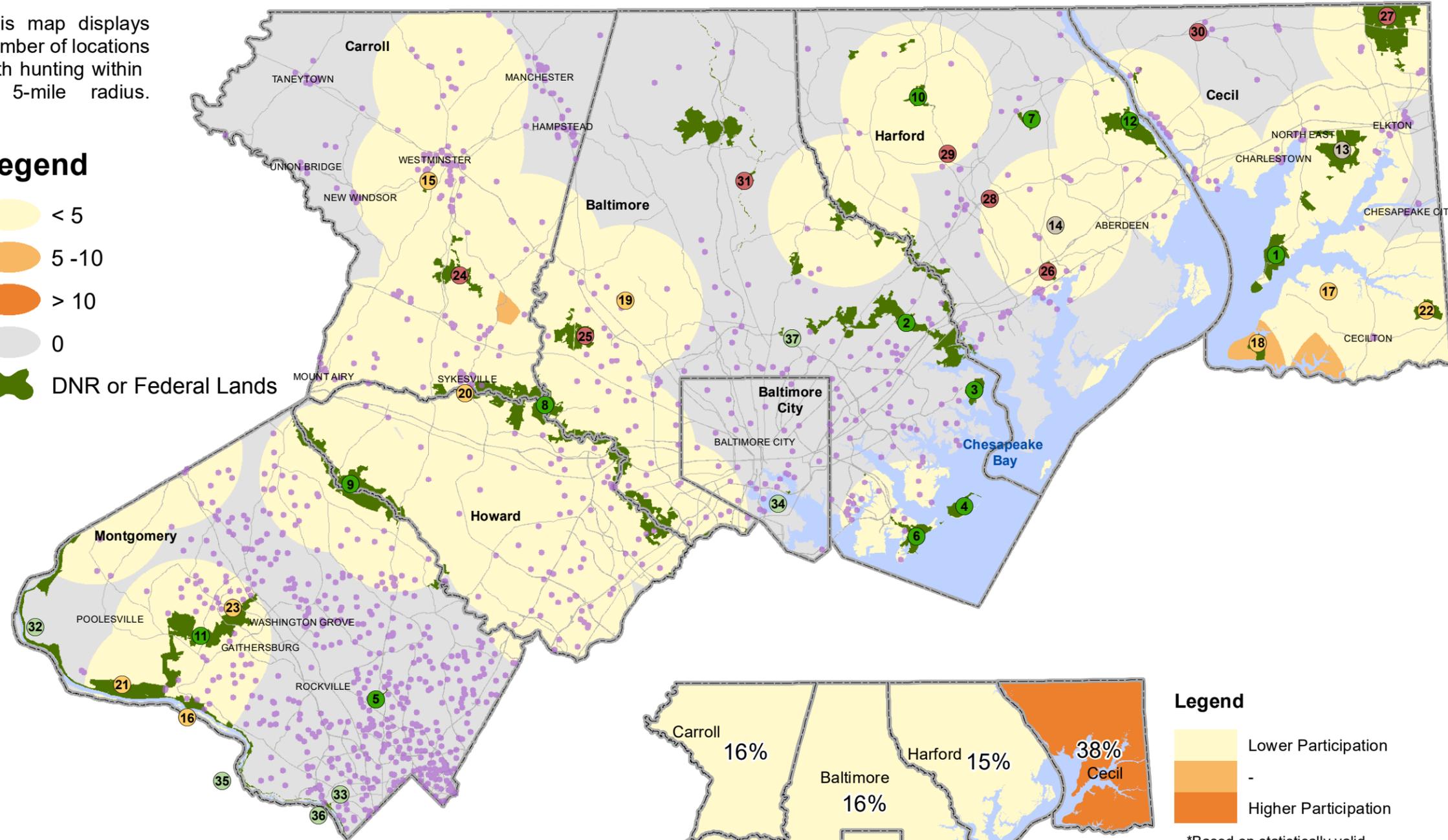


Map 1D: 5-Mile Proximity to Hunting - Central Region

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 **STONE DEMONSTRATION SF**

Wildlife Management Areas

- 15 **AVONDALE WMA**
- 16 **DIERSEN WMA**
- 17 **EARLEVILLE WMA**
- 18 **GROVE FARM WMA**
- 19 **GWYNBROOK 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

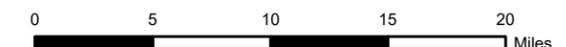
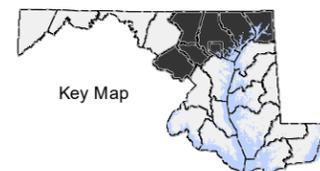
- 32 **CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK**
- 33 **CLARA BARTON NATIONAL HISTORIC SITE**
- 34 **FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE**
- 35 **GEORGE WASHINGTON MEMORIAL PARKWAY**
- 36 **GLEN ECHO PARK**
- 37 **HAMPTON NATIONAL HISTORIC SITE**

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 **IDYLWILD WMA**
- 19 **ISLE OF WIGHT WMA**
- 20 **JOHNSON WMA**
- 21 **LECOMPTÉ 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

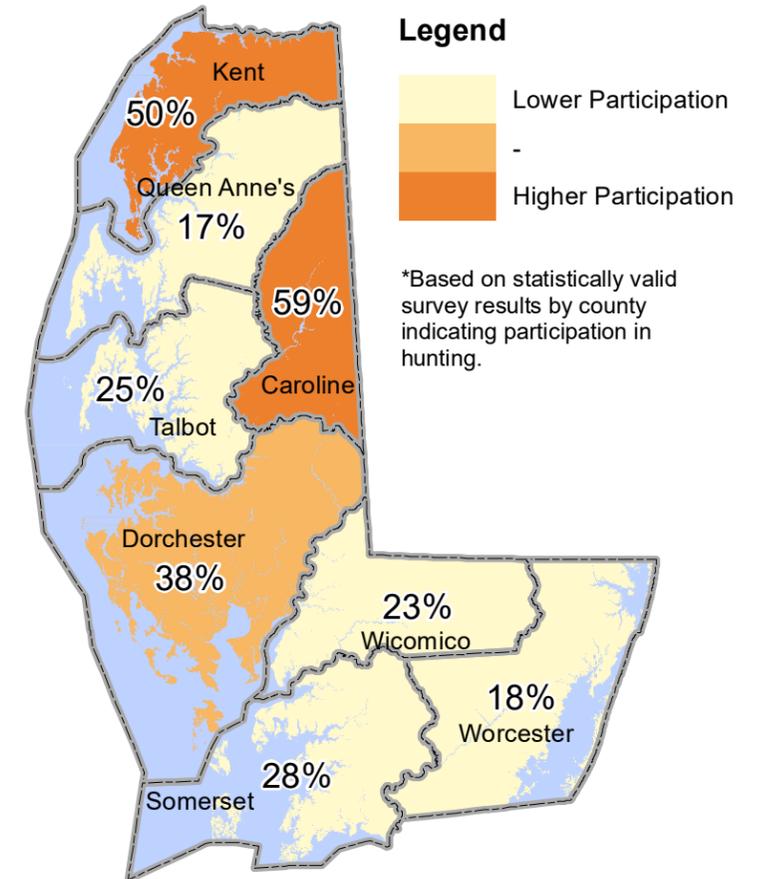
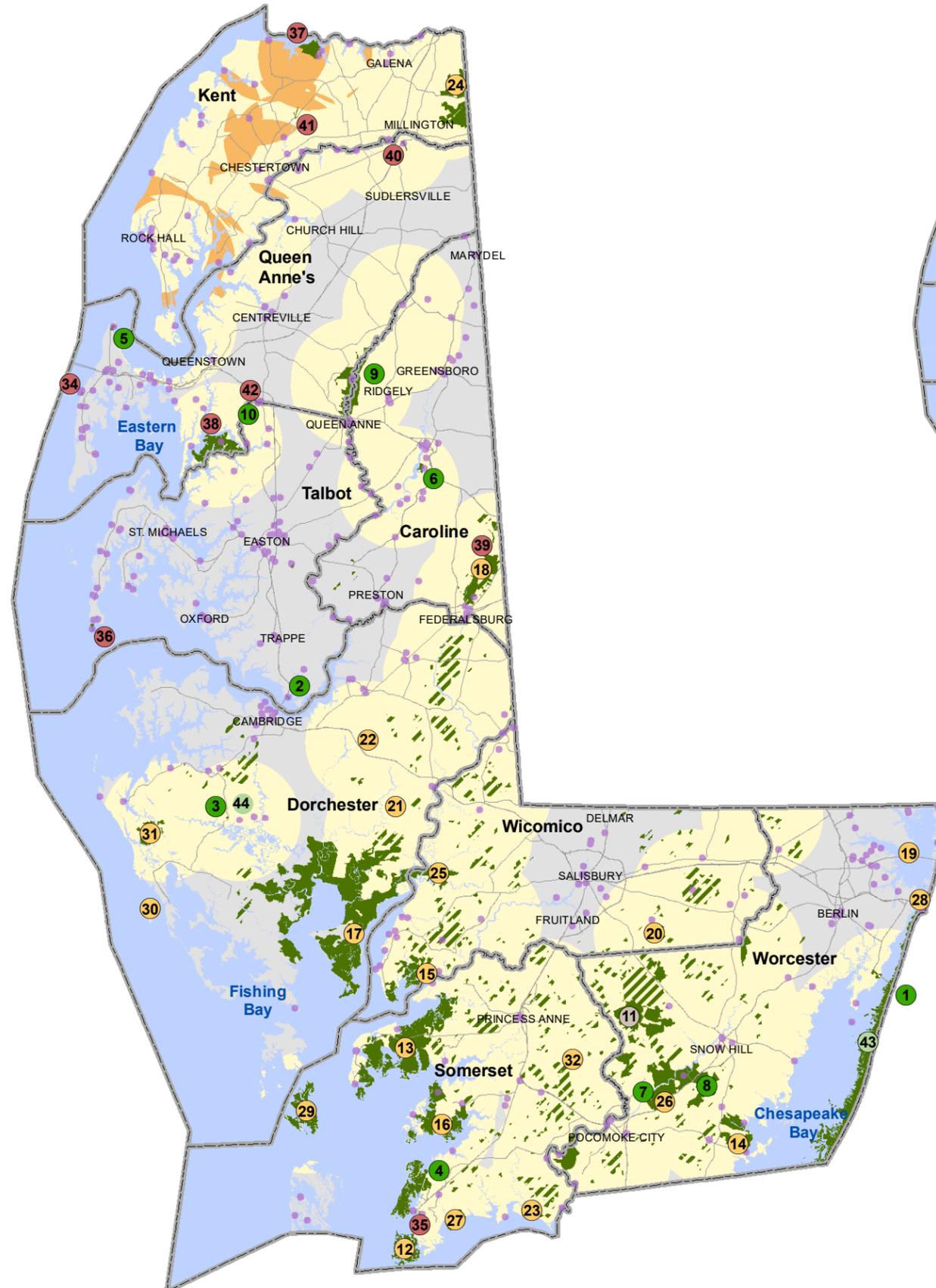
- 43 **ASSATEAGUE ISLAND NATIONAL SEASHORE**
- 44 **BLACKWATER NATIONAL WILDLIFE REFUGE**

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

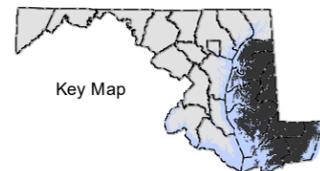
- Lower Participation
-
- Higher Participation

*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

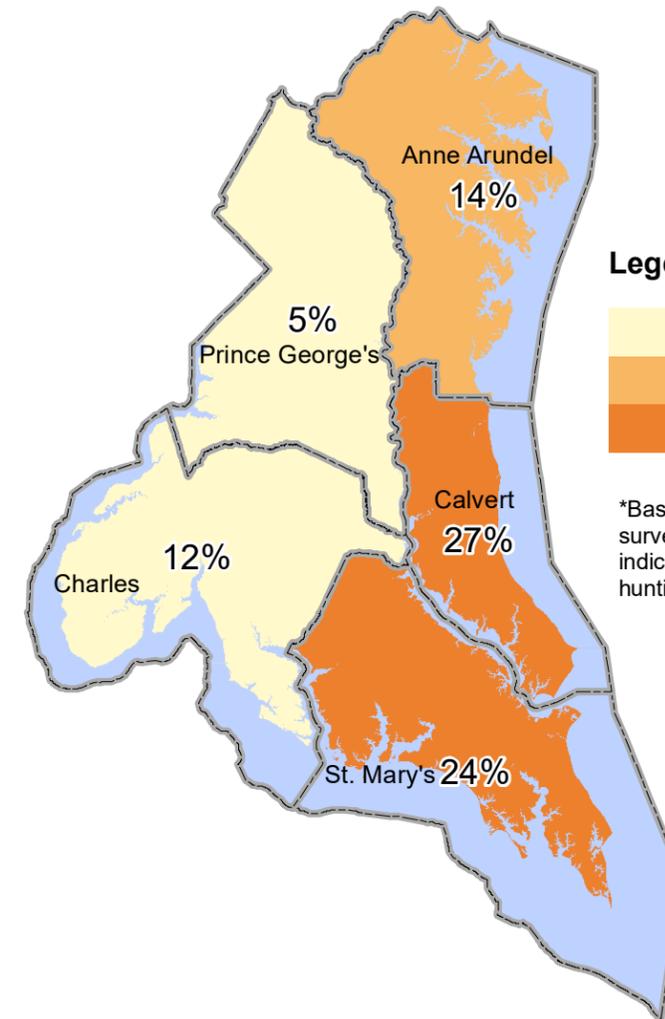
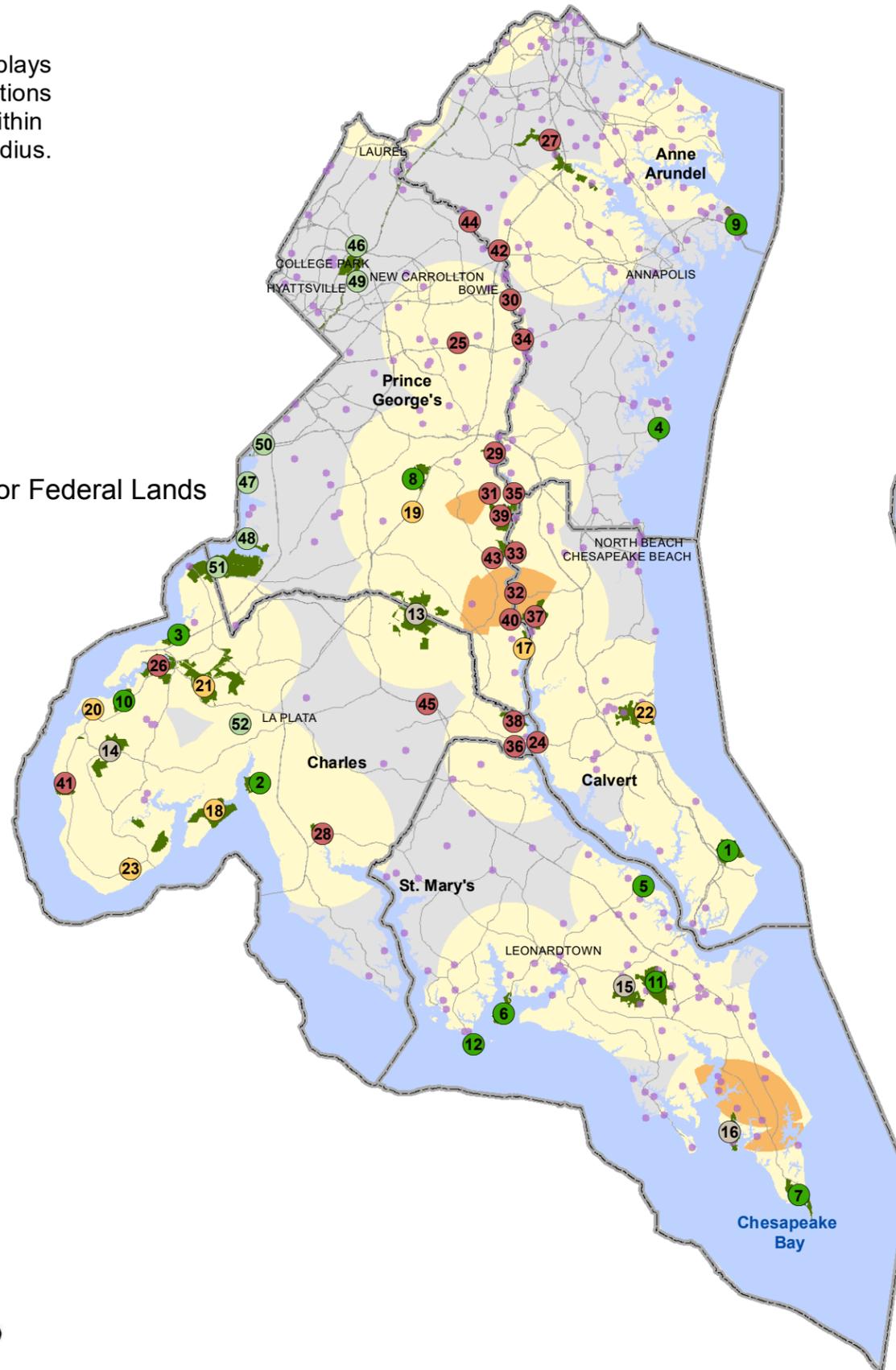
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

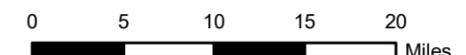
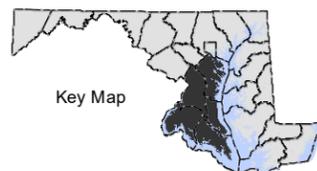
- Lower Participation
- Higher Participation

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

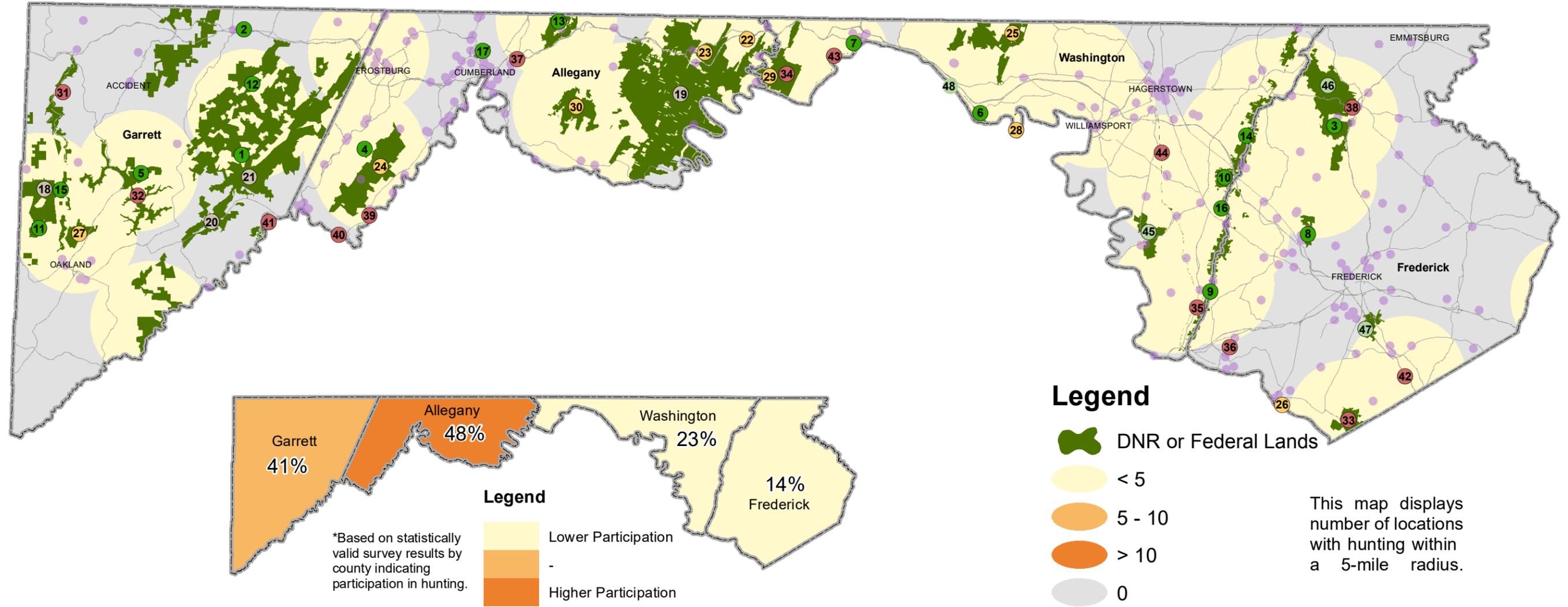
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Acronym Key

- 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



This map displays number of locations with hunting 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 AYODER 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

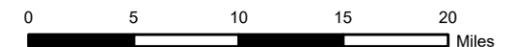
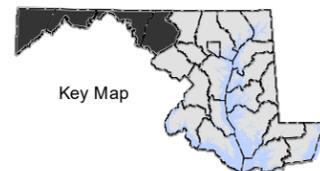
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

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

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- WMA Wildlife Management Area
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- PFA Public Fishing Area

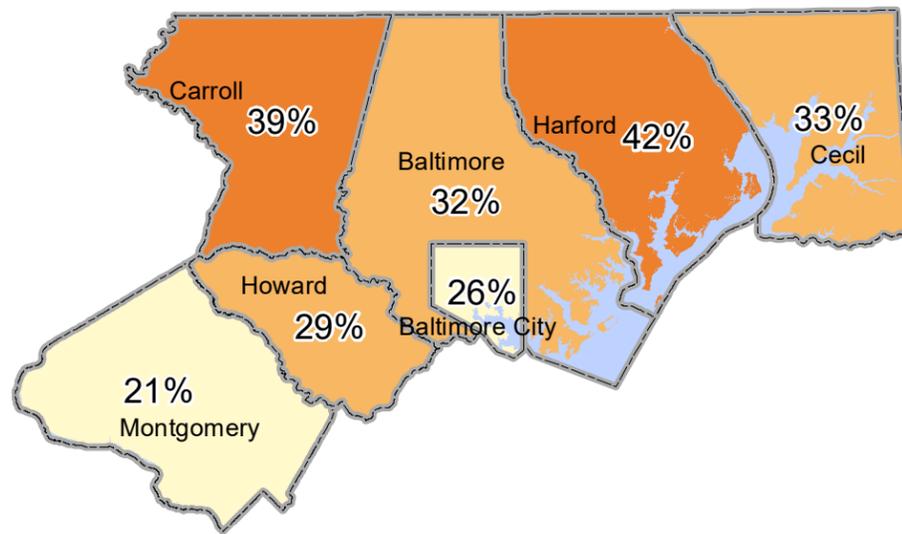
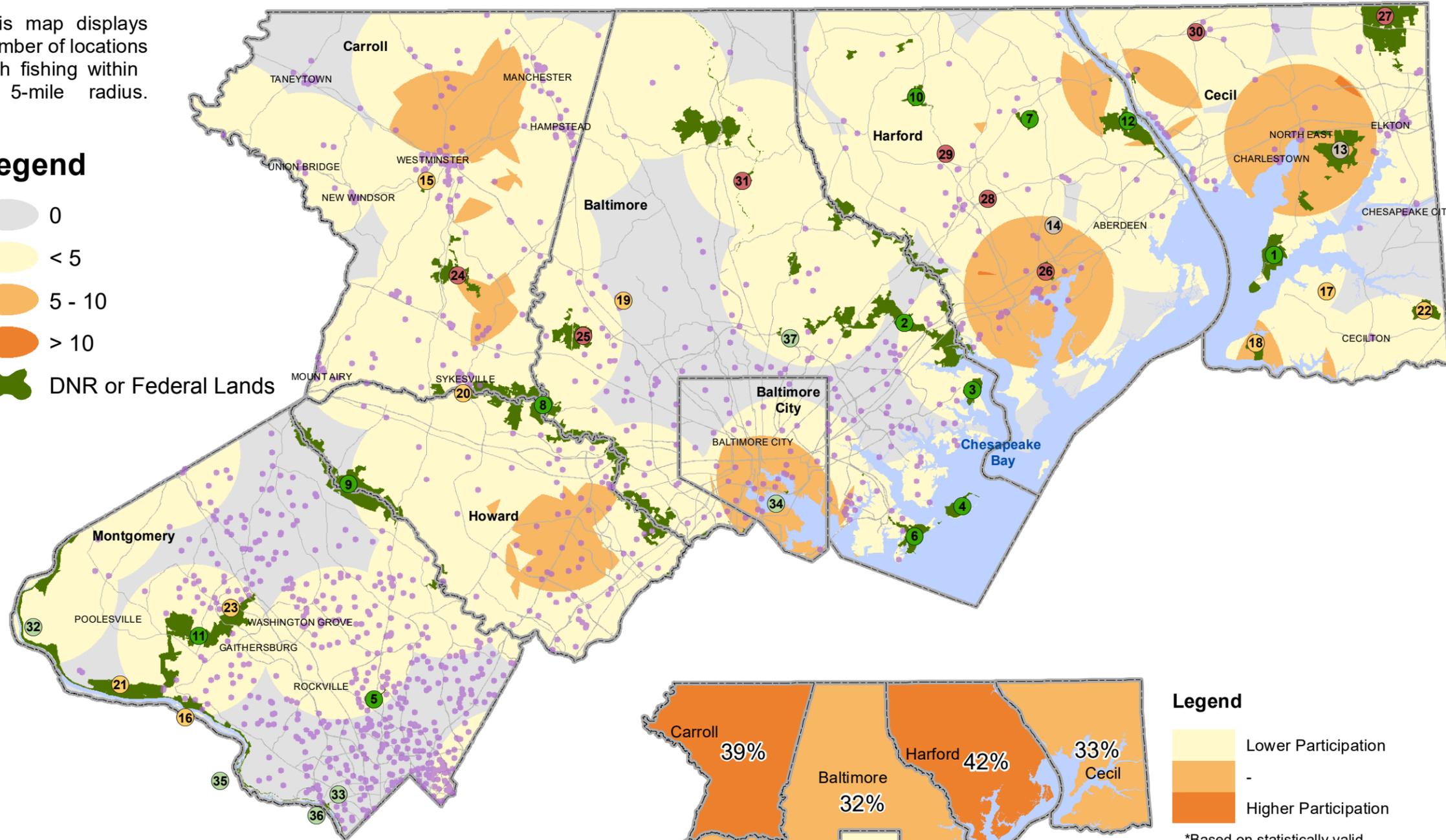


Map 1E: 5-Mile Proximity to Fishing - Central Region

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 DIERRSEN WMA
- 17 EARLEVILLE WMA
- 18 GROVE FARM WMA
- 19 GWYNNBROOK WMA
- 20 HUGG-THOMAS WMA
- 21 MCKEE BESHERS 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

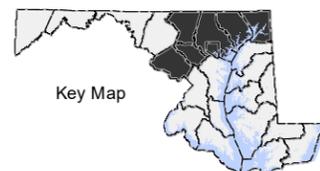
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

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 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

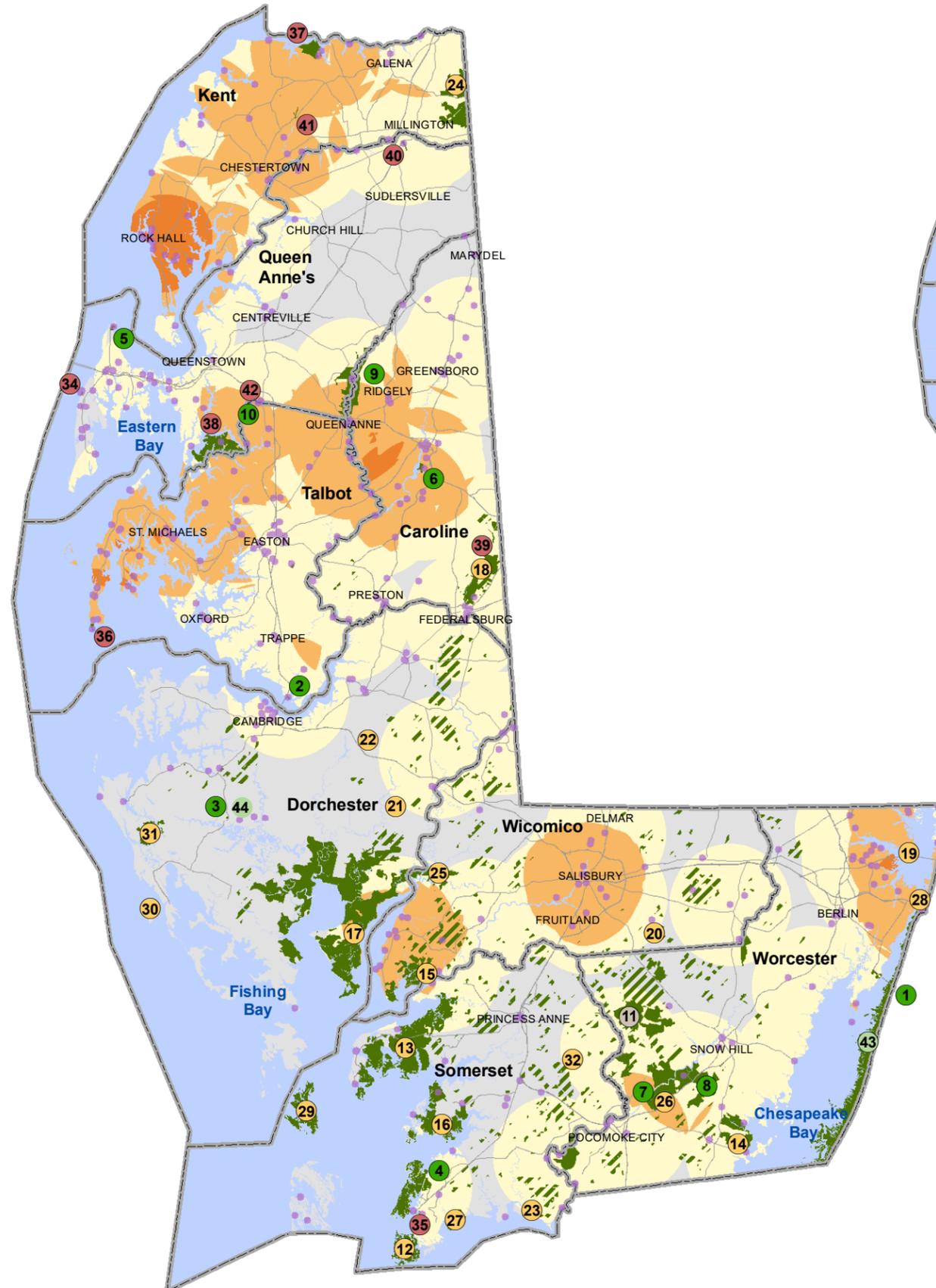
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

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

Legend

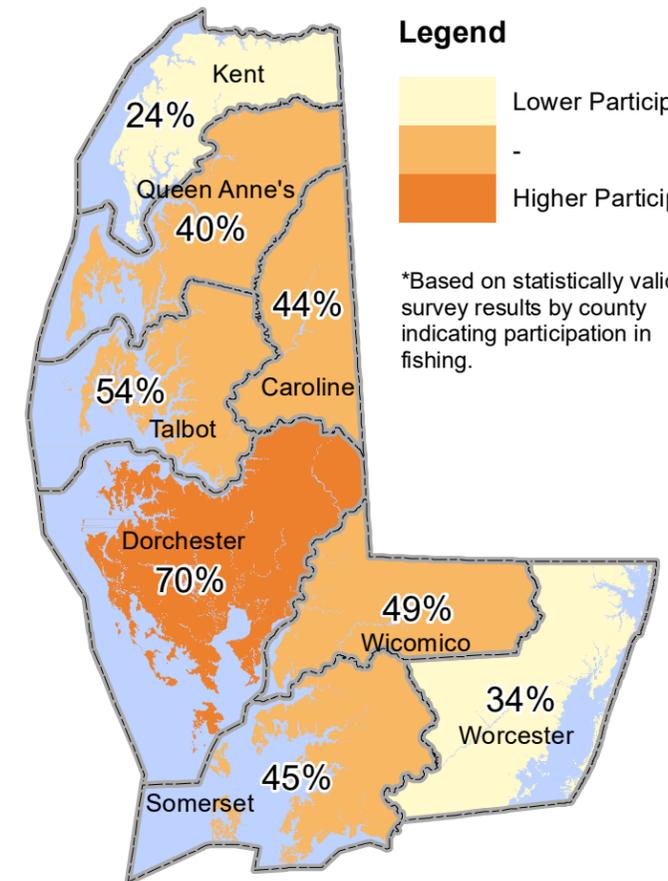
- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



Legend

- Lower Participation
-
- Higher Participation

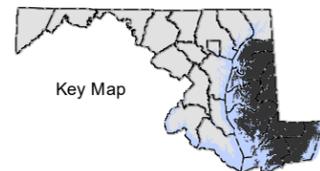
*Based on statistically valid survey results by county indicating participation in fishing.



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 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 **HUGHVILLE POND PFA**

Federal Lands

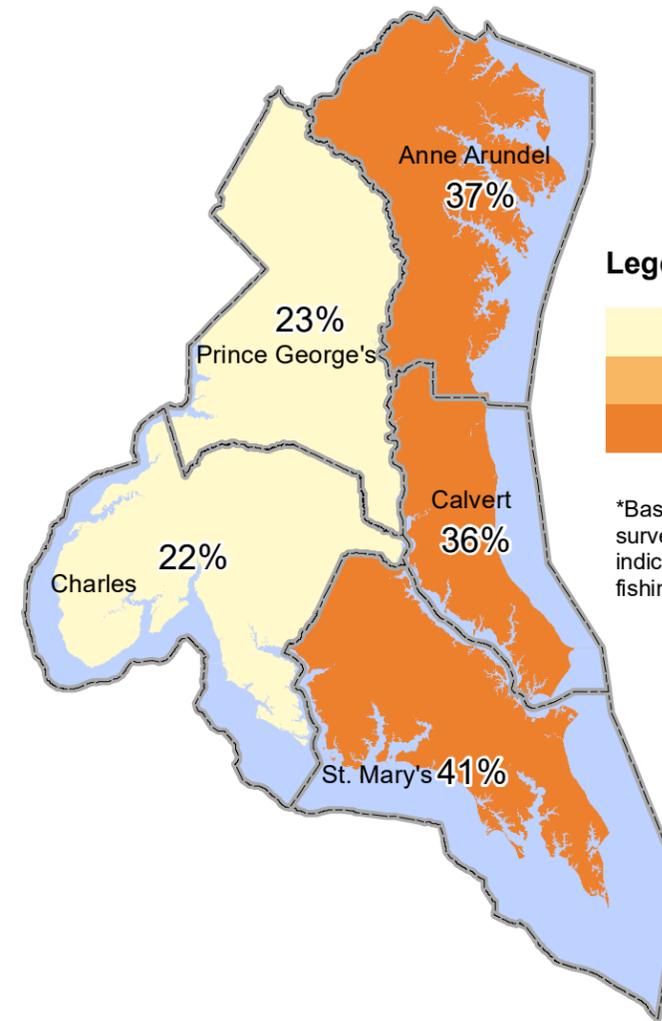
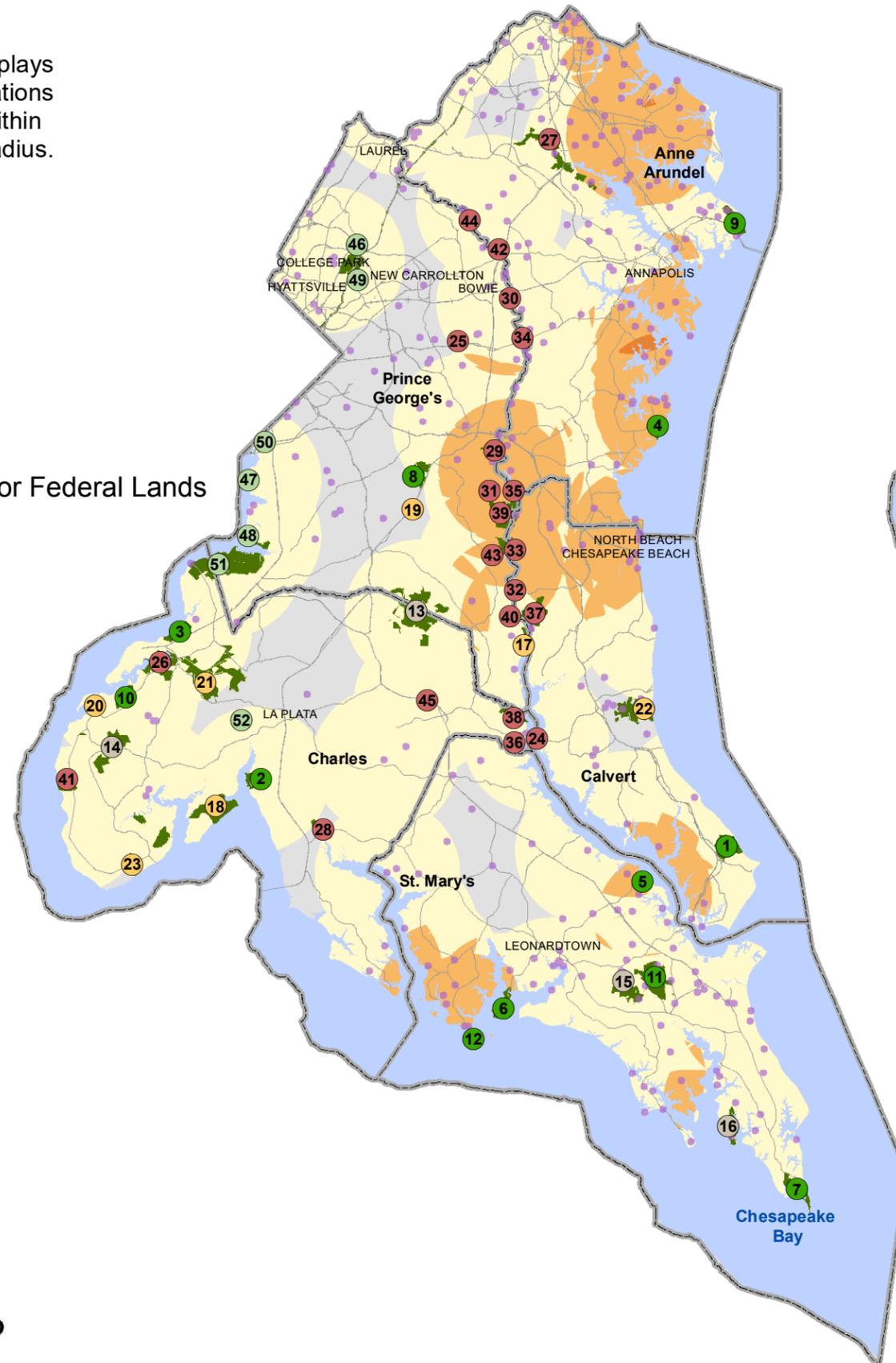
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 **PISCATAWAY PARK**
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

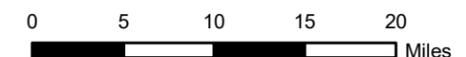
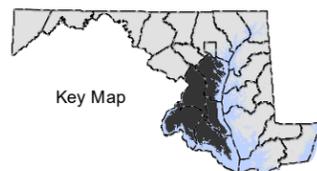
- Lower Participation
-
- Higher Participation

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

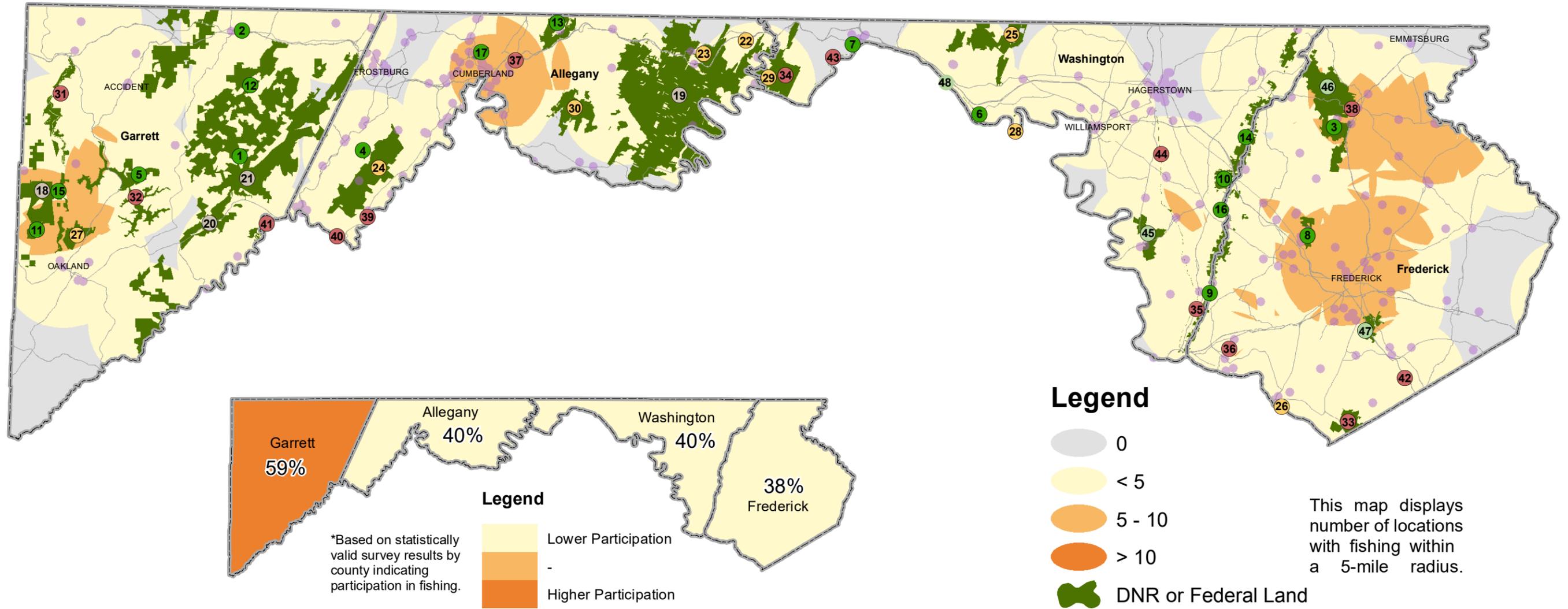
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



This map displays number of locations with fishing 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

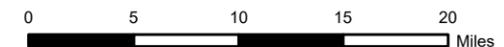
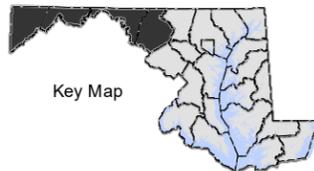
- 45 **ANTIETAM NATIONAL BATTLEFIELD**
- 46 **CATOCTIN MOUNTAIN PARK**
- 47 **MONOCACY NATIONAL BATTLEFIELD**
- 48 **CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK**

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

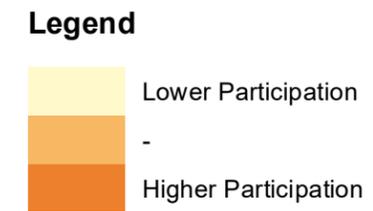
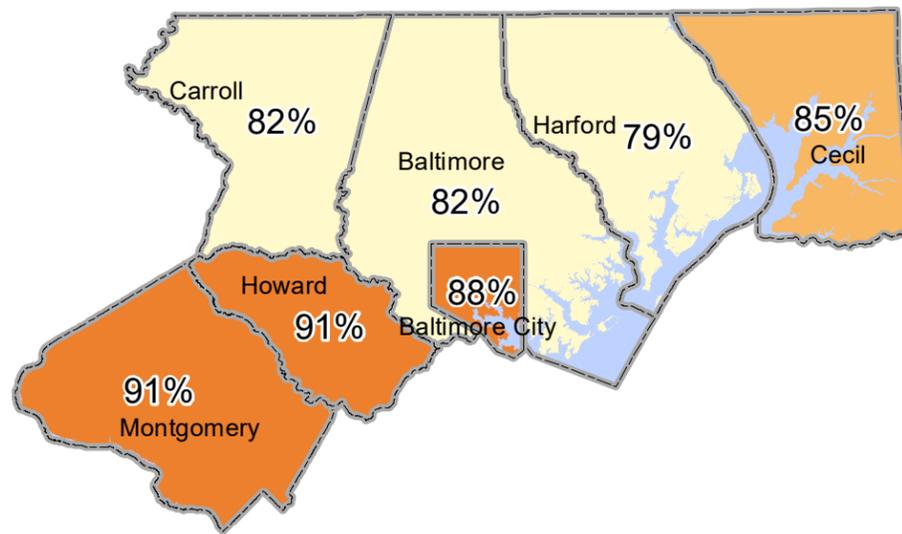
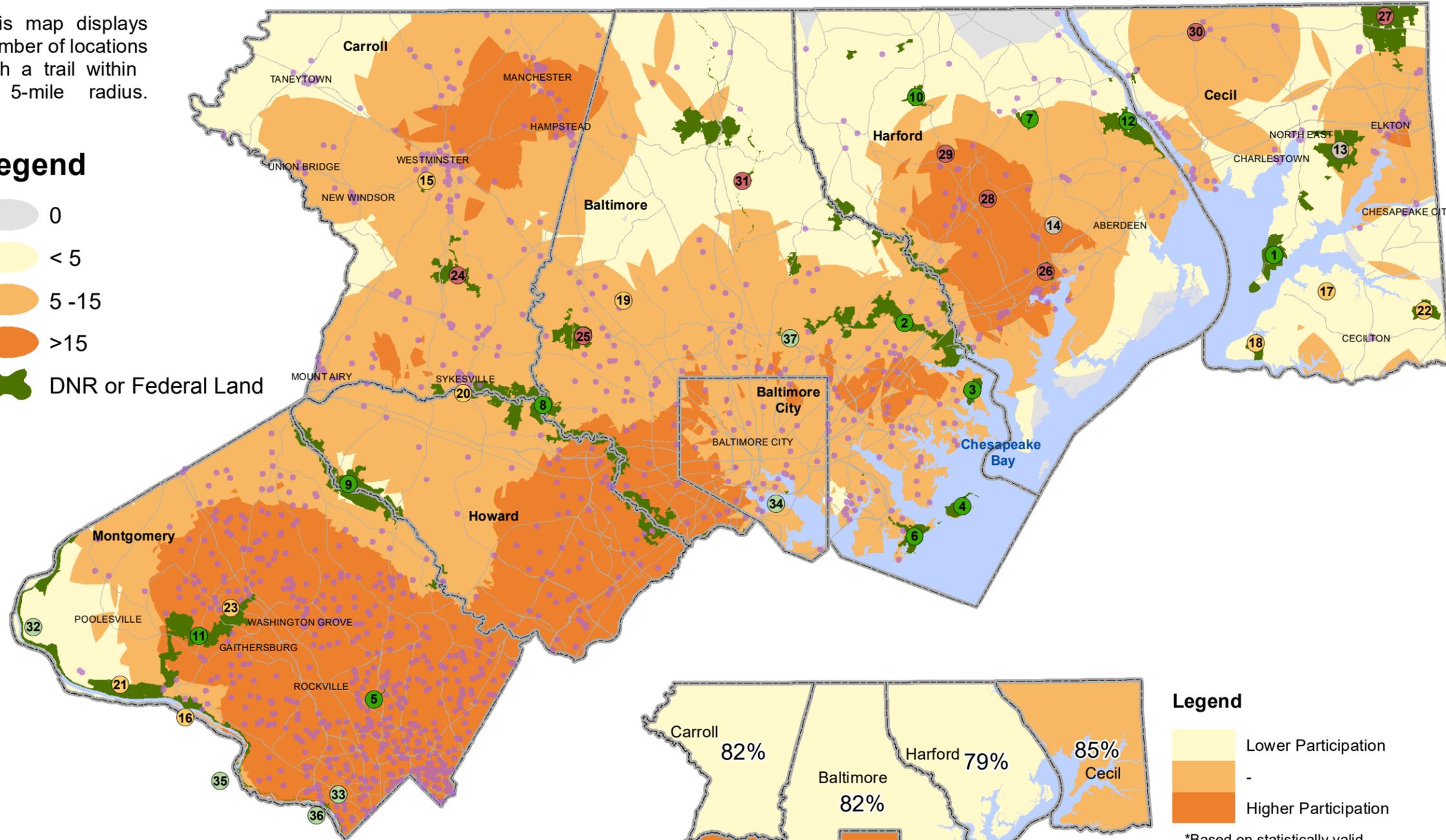
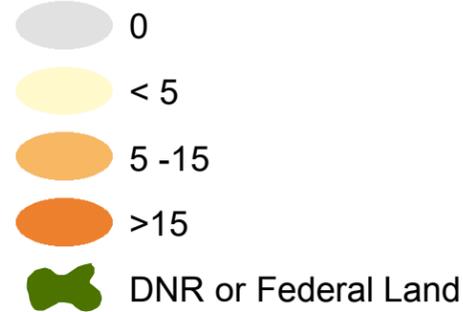
- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- NRMA Natural Resource Management Area
- PFA Public Fishing Area



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

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

Legend



*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 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

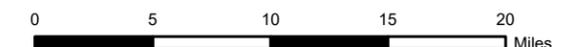
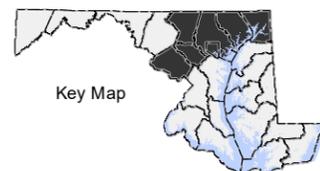
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

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 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

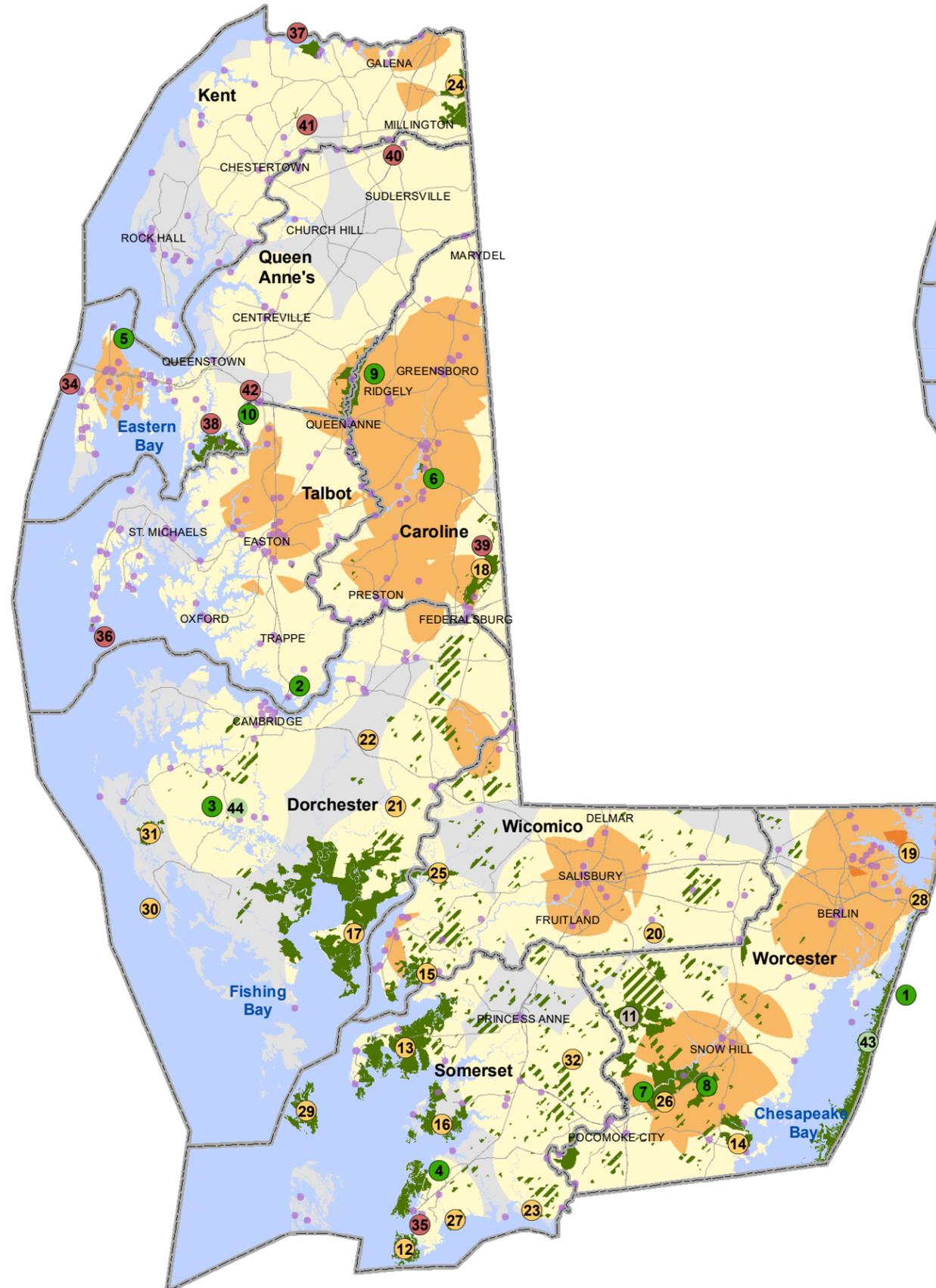
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

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

Legend

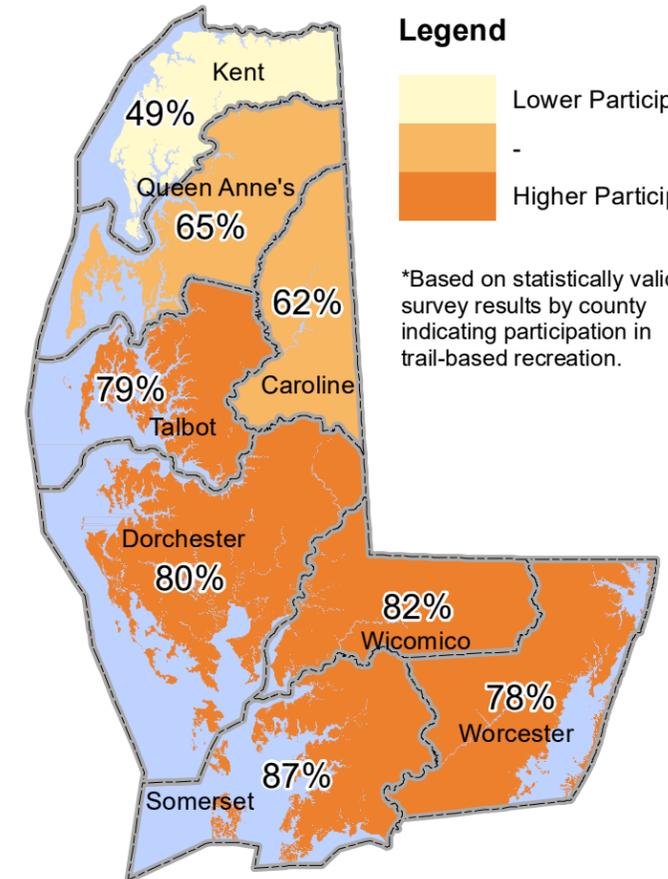
- 0
- < 5
- 5 - 15
- > 15
- DNR or Federal Land



Legend

- Lower Participation
-
- Higher Participation

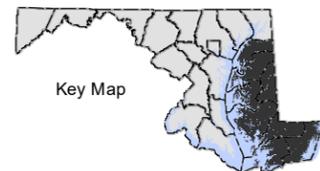
*Based on statistically valid survey results by county indicating participation in trail-based recreation.



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

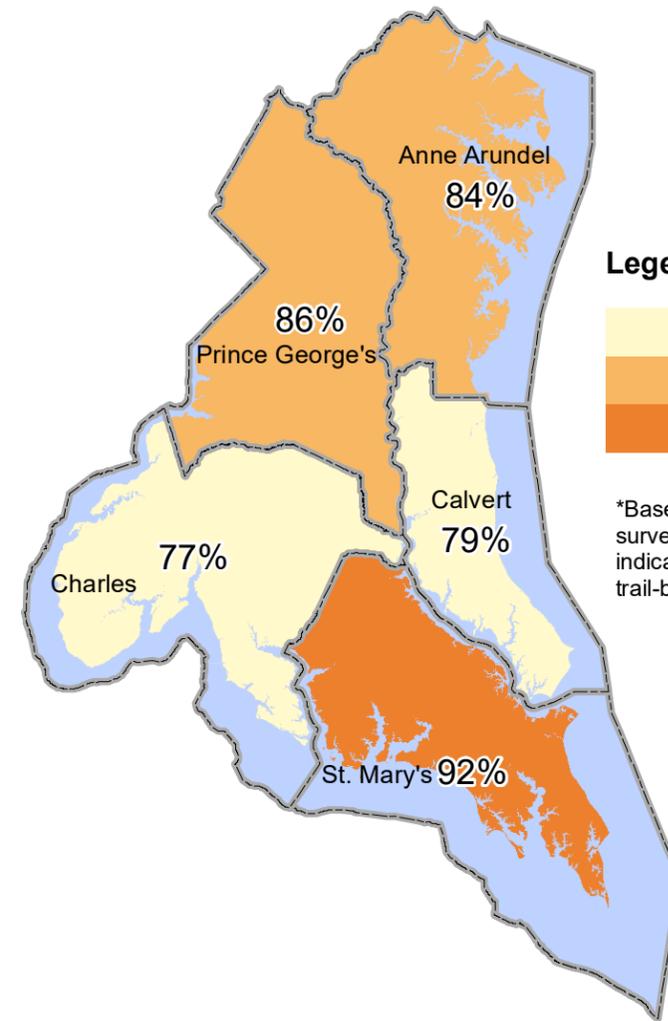
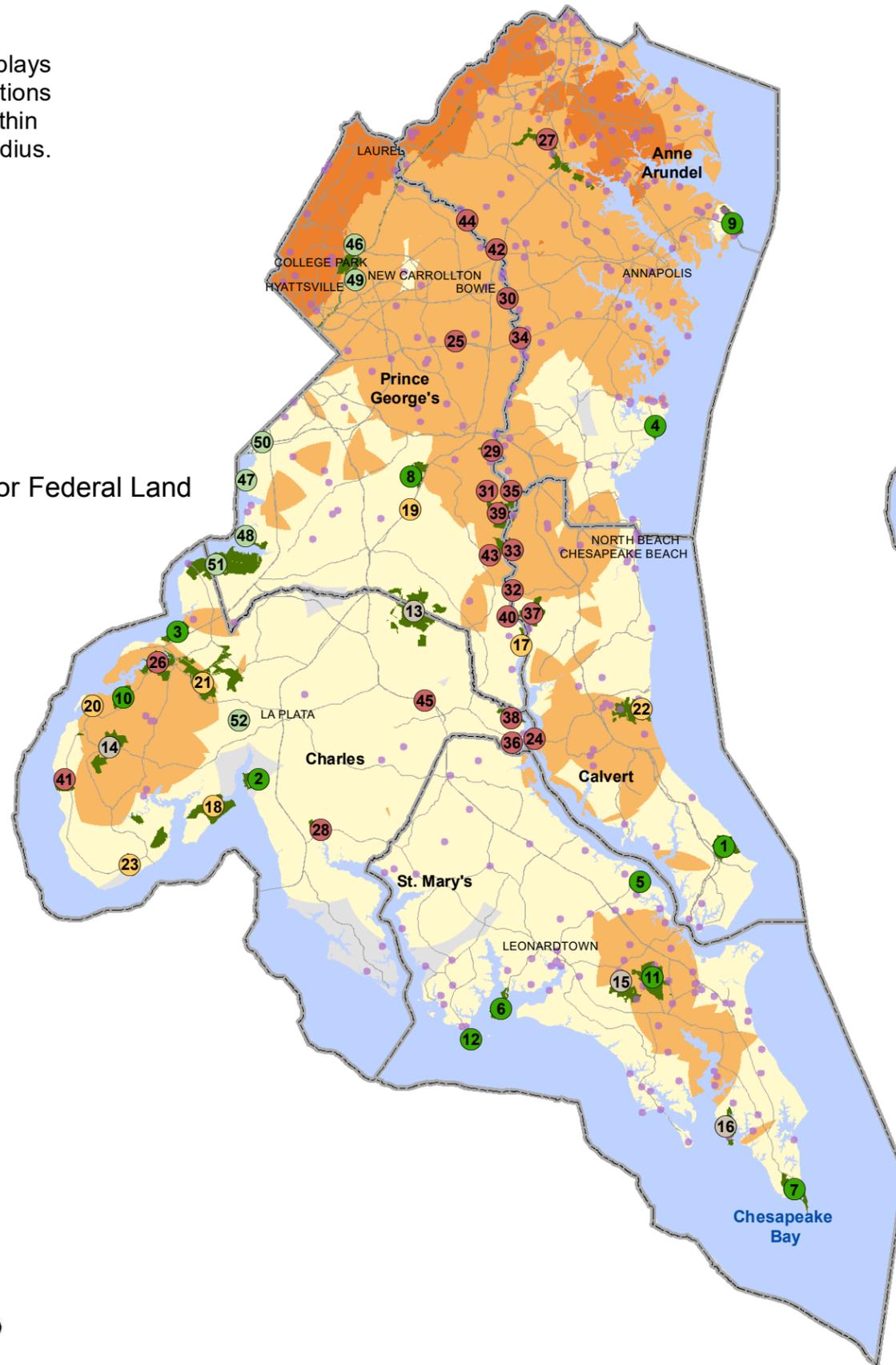
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

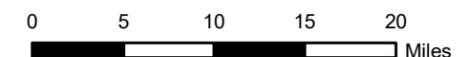
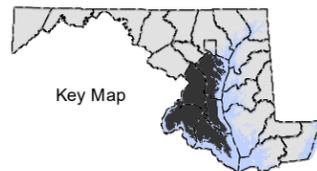
- Lower Participation
-
- Higher Participation

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

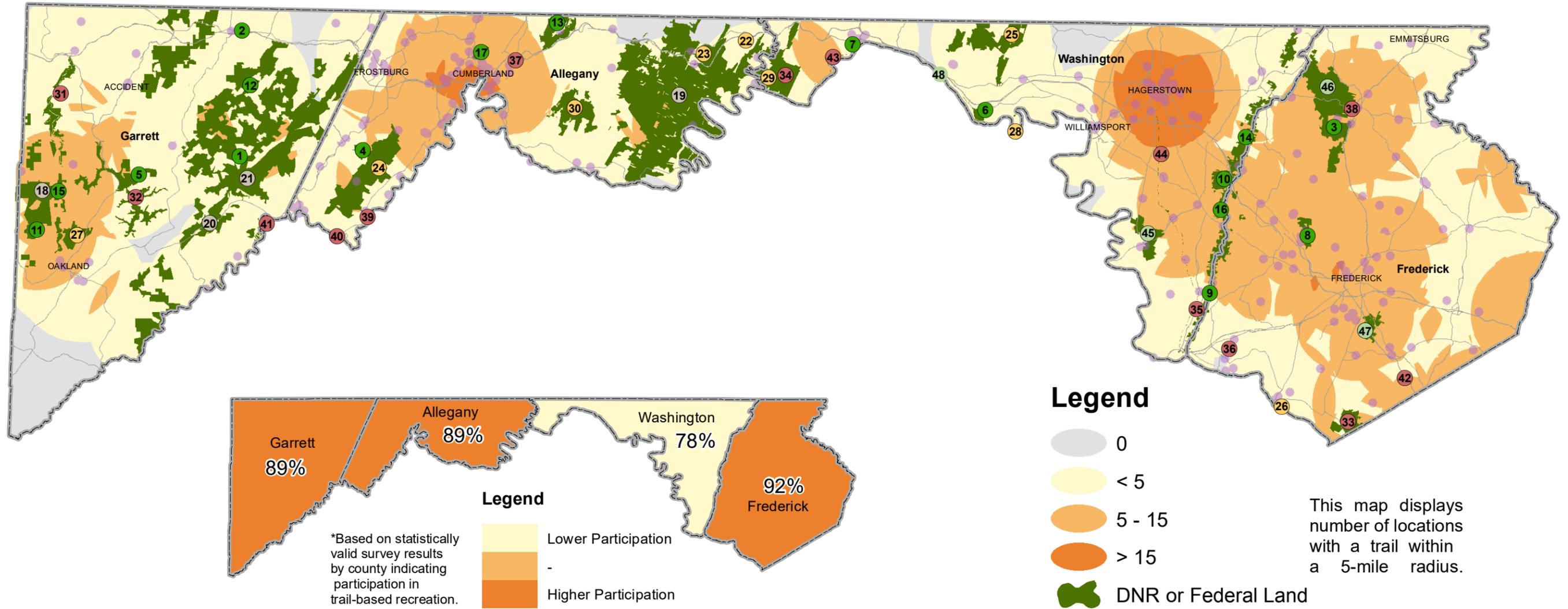
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Acronym Key

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



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



This map displays number of locations with a trail 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 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

