

III. RESEARCH AND TRENDS

A. MARYLAND'S CHANGING POPULATION

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

Key Characteristics of Maryland's Population by Service Region

Total Population and Distribution of Residents

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

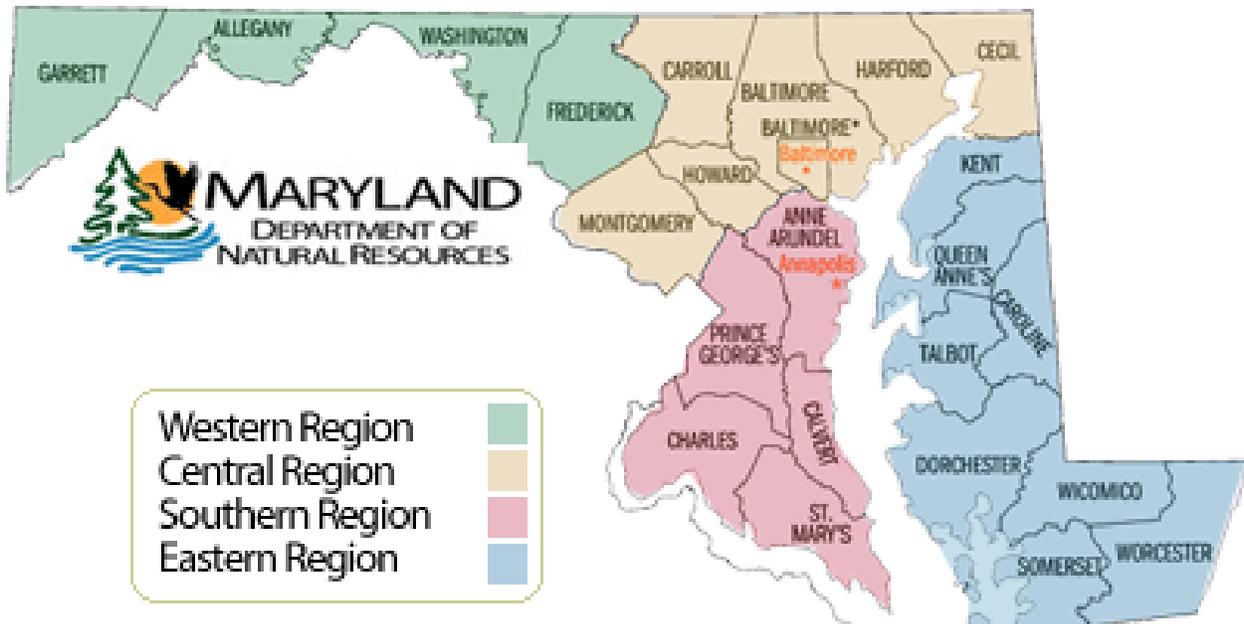
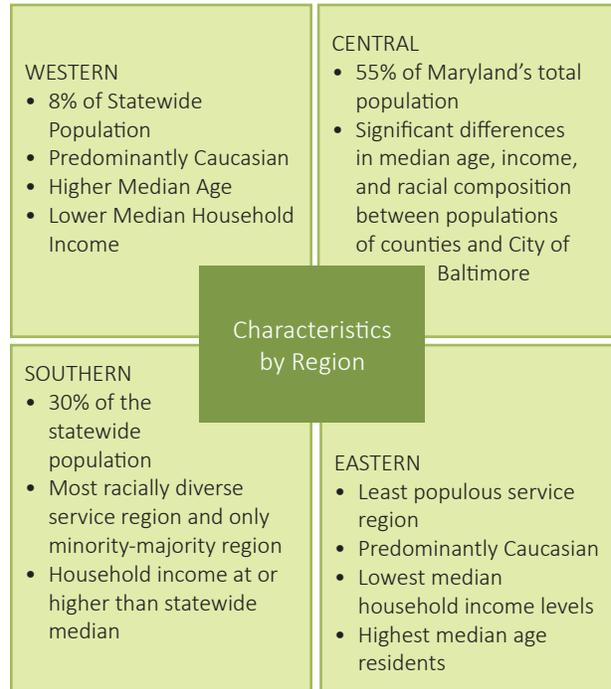
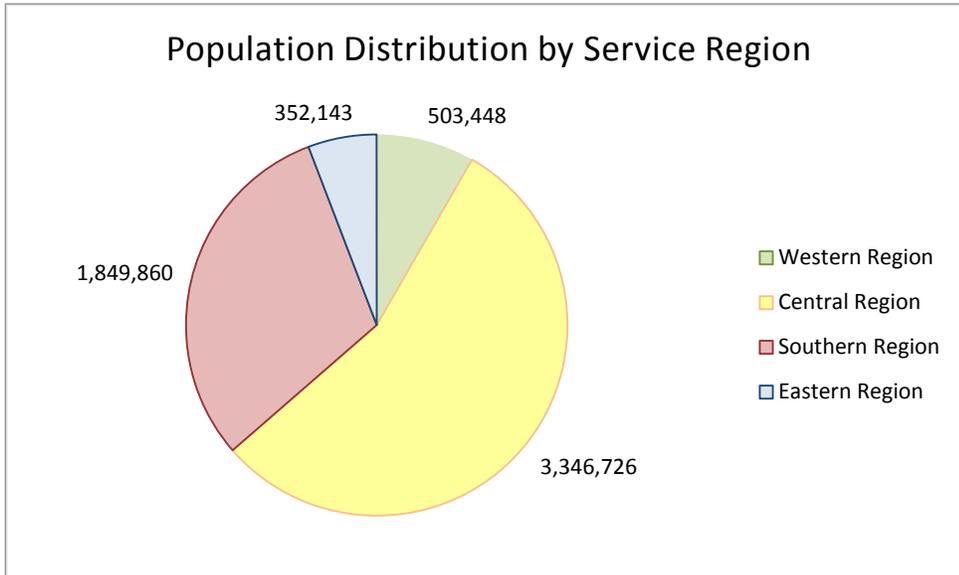


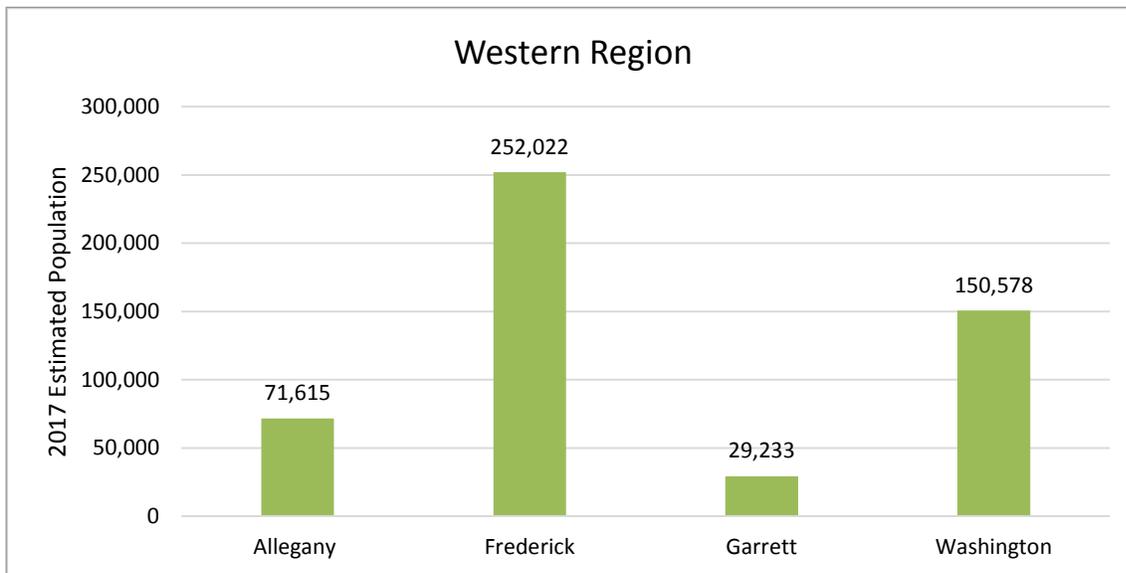
Figure 5: Maryland's Population Distribution by Department of Natural Resources Service Region



Source: Maryland Department of Planning

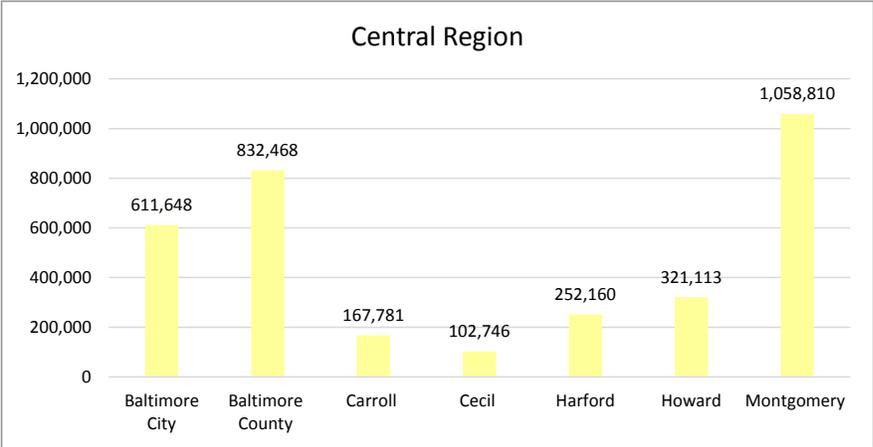
As **Figures 6 – 9** illustrate, the distribution of residents by county also varies.

Figure 6: Western Region Population Distribution



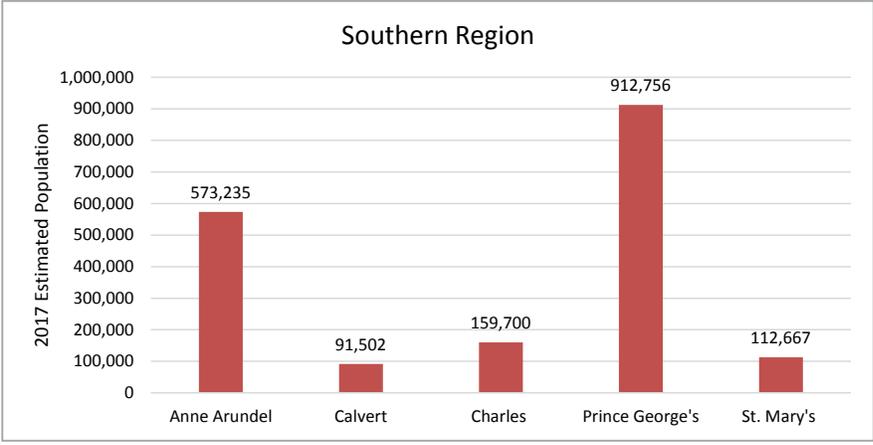
Source: Maryland Department of Planning

Figure 7: Central Region Population Distribution



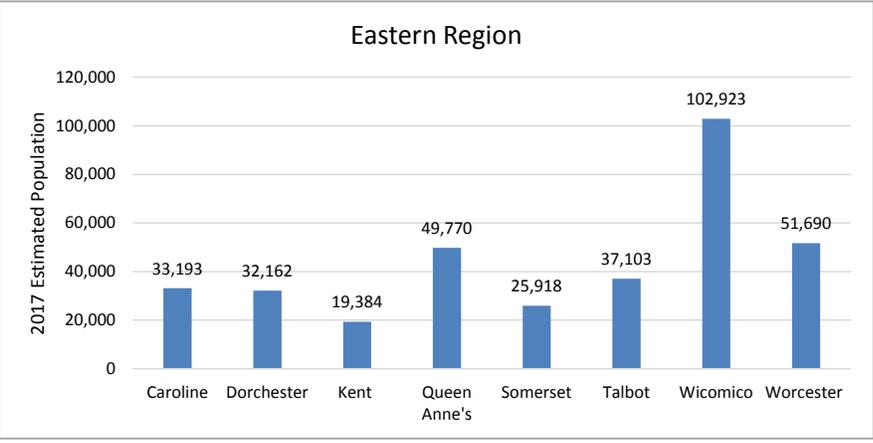
Source: Maryland Department of Planning

Figure 8: Southern Region Population Distribution



Source: Maryland Department of Planning

Figure 9: Eastern Region Population Distribution

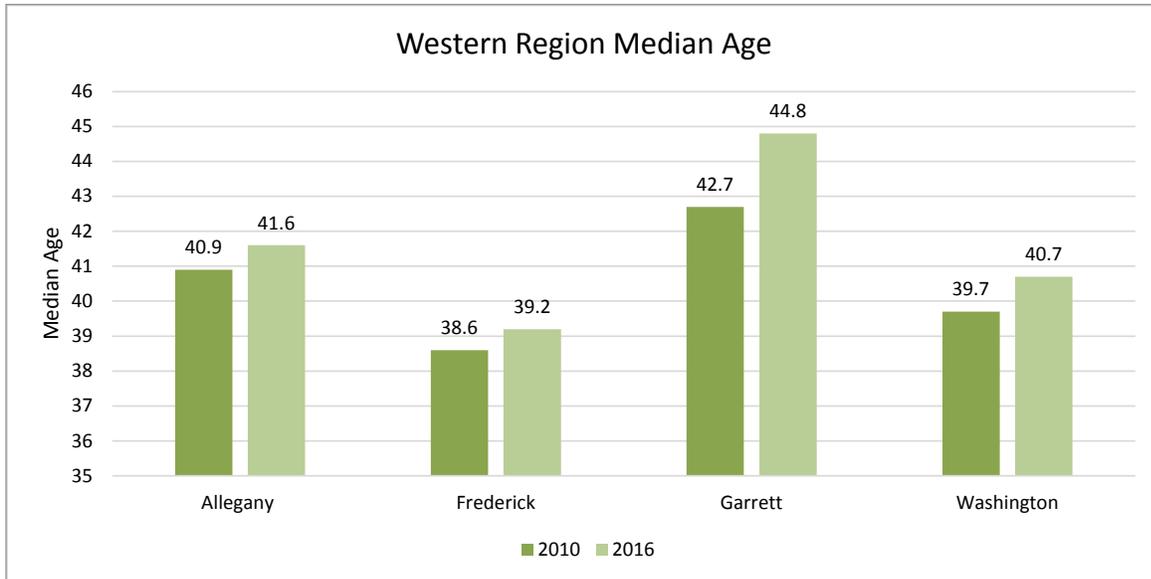


Source: Maryland Department of Planning

Population by Age

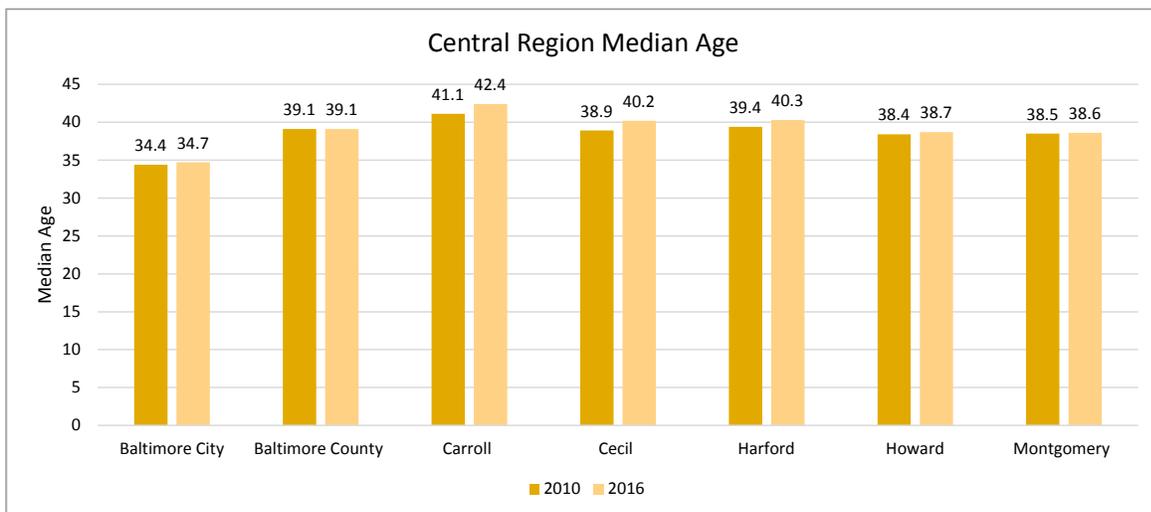
As of July 2017, the median age of Maryland residents was 38.7 years. Over the past decade, the statewide median age has fluctuated between roughly 37 to 40 years of age. The median age of residents by county varies widely across the state. **Figures 10 – 13** illustrate the current and 2010 median ages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

Figure 10: Median Age Comparison – Western Region



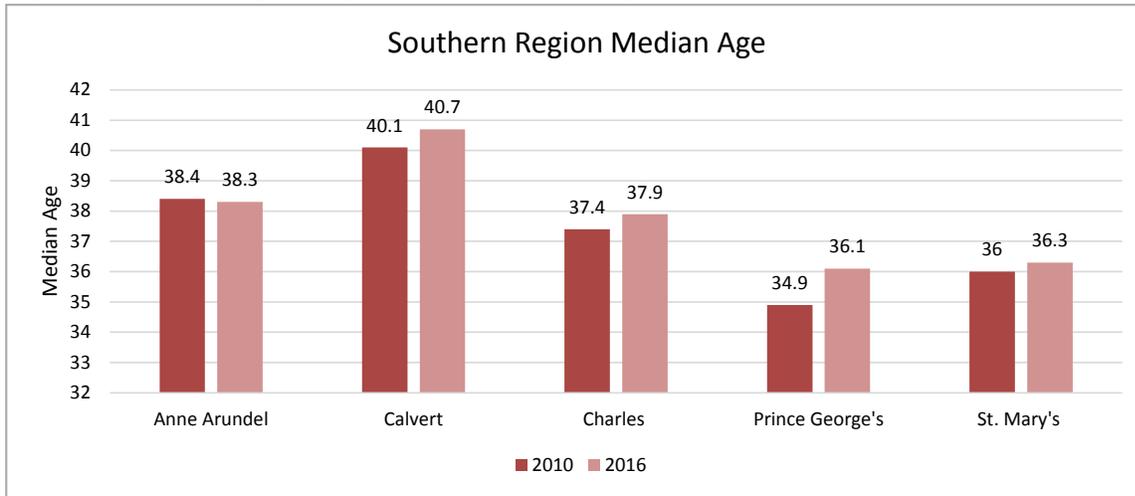
Source: U.S. Census Bureau American Community Survey 2016

Figure 11: Median Age Comparison – Central Region



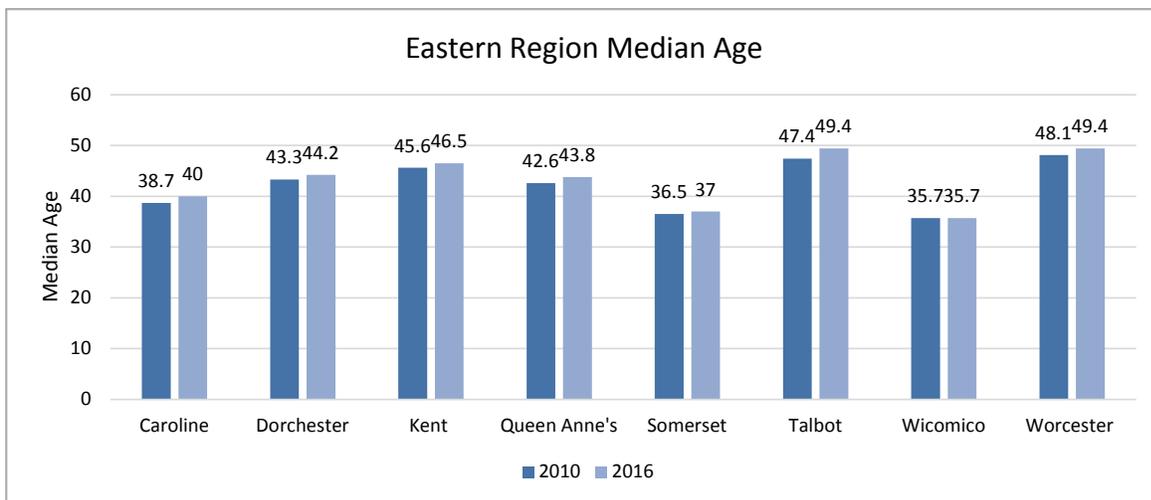
Source: U.S. Census Bureau American Community Survey 2016

Figure 12: Median Age Comparison – Southern Region



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

Figure 13: Median Age Comparison – Eastern Region



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

Population by Race

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

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

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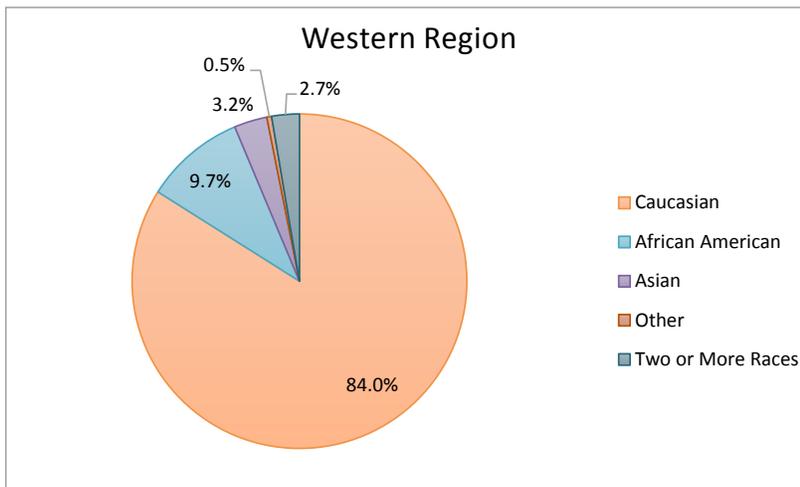
It should be noted that in reviewing population data, the U.S. Census Bureau does not consider Hispanic Origin as a category of race, but as a separate ethnic identifier counted separately from an individual’s racial identification. For example, an individual may identify as Caucasian and Hispanic, or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



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

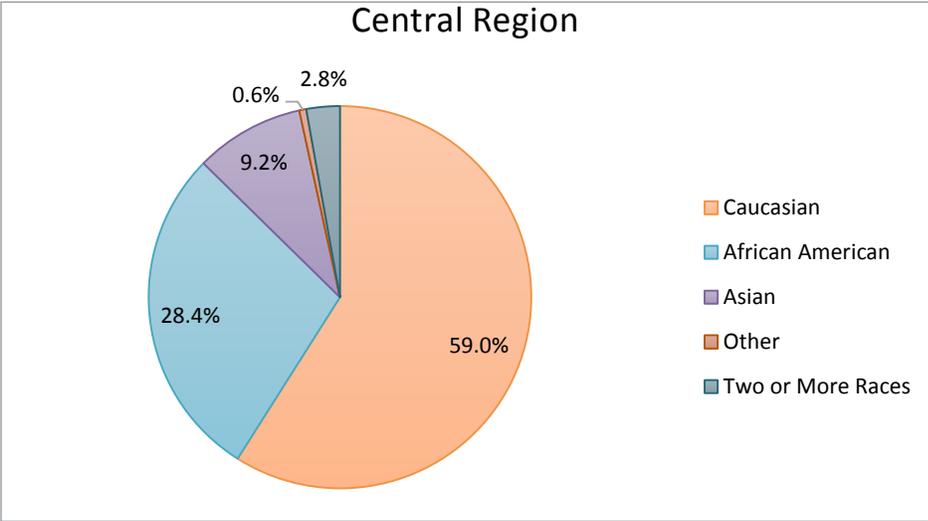
Figures 14 – 17 provide a breakdown of the racial character of the populations of each of the Department of Natural Resources service areas. The Central and Southern Regions are the most racially diverse statewide service regions.

Figure 14: Western Region Population Racial Character 2017



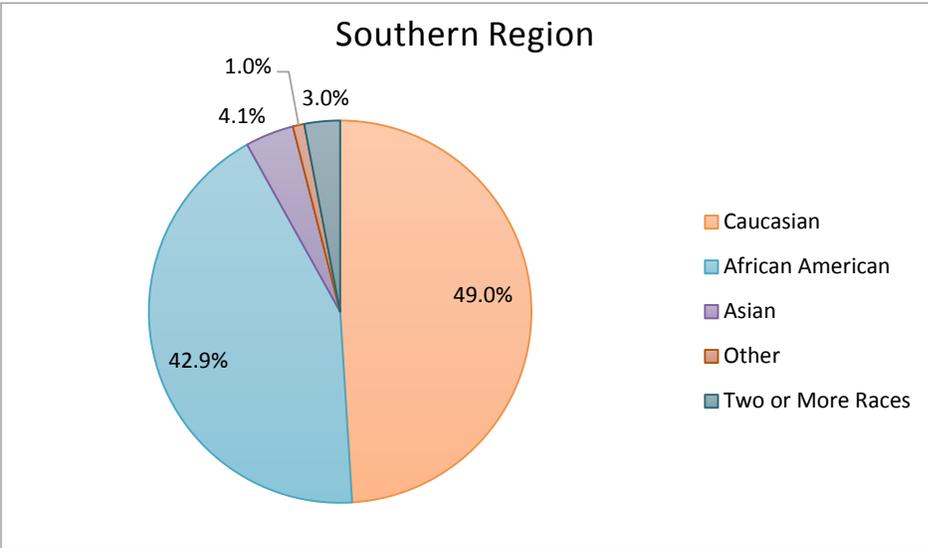
Source: Maryland Department of Planning

Figure 15: Central Region Population Racial Character 2017



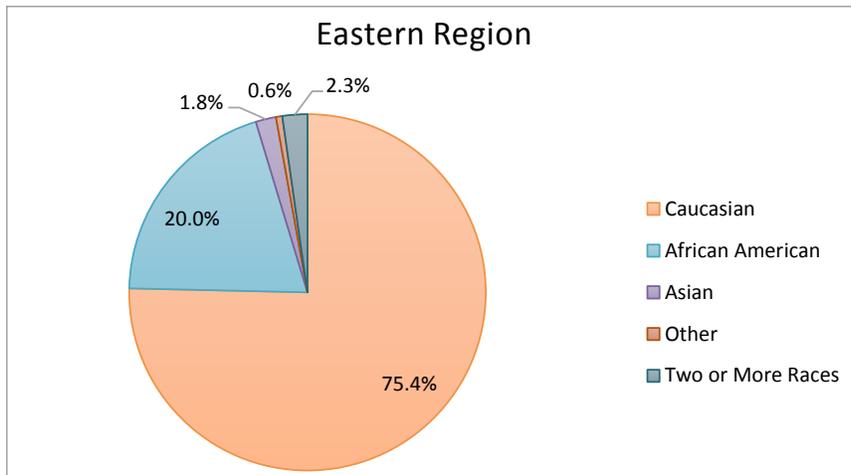
Source: Maryland Department of Planning

Figure 16: Southern Region Population Racial Character 2017



Source: Maryland Department of Planning

Figure 17: Eastern Region Population Racial Character 2017

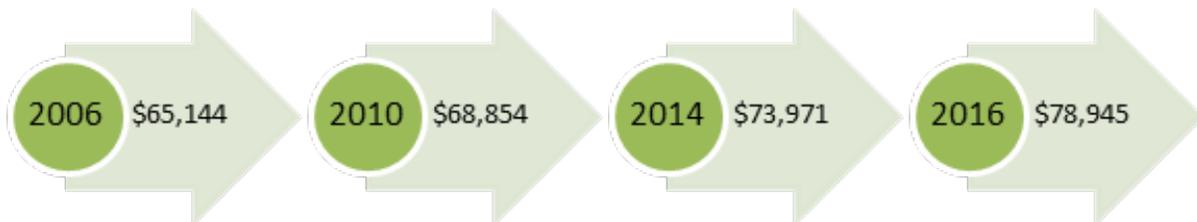


Source: Maryland Department of Planning

Median Household Income

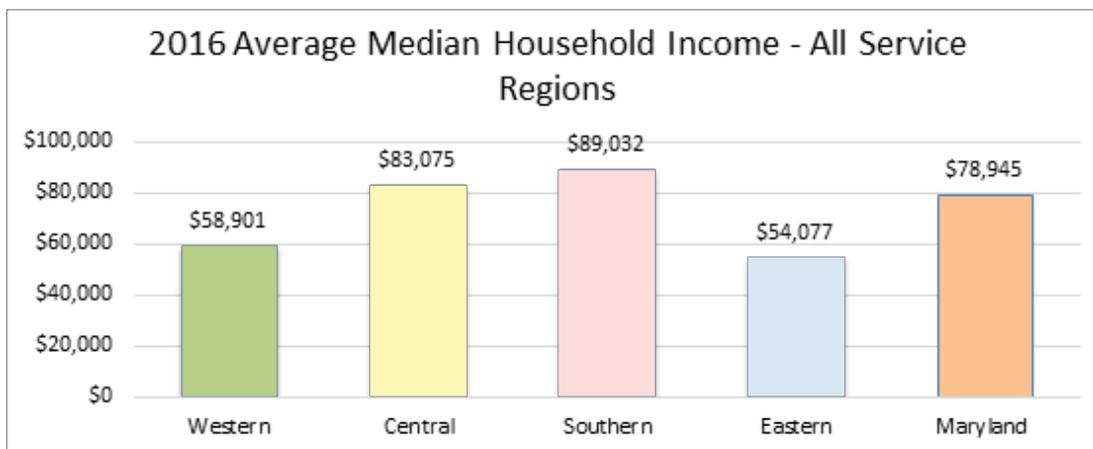
The median household income in Maryland has been steadily increasing over the past decade. While this is a positive trend overall, there are clear household income disparities between the populations of statewide service regions as well as between counties within each service region.

Figure 18: Maryland Median Household Income 2006 - 2016



Source: Maryland Department of Planning

Figure 19: Average Median Household Income by Service Region



Source: Maryland Department of Planning

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

Tourism and Visitation for Outdoor Recreation

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

B. PUBLIC INPUT – SURVEYS AND FOCUS GROUPS

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



Assateague | Summer 2017 by Brady Cooling, Maryland Park Service

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

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

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

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

Regional Stakeholder Focus Group Input

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

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

**Regional Stakeholder Focus Group
Workshop Schedule**

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

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

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

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

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

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

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

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

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

Connectivity – people value a trail system that connects:

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

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

Communication – enhance it between:

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

Access – is needed for recreation opportunities:

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

Operations and maintenance – need greater attention:

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

Open space and recreation – is necessary infrastructure that:

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

Statewide Outdoor Recreation Survey

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

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

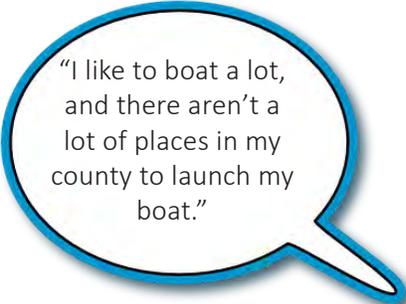
Statistically Valid Phone Survey

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

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

Public Open Link Survey

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



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



"I would like to see more walking trails."



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

Key Survey Findings

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

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

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

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

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

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



Figure 20: Survey Comparison - Outdoor Activities by Popularity

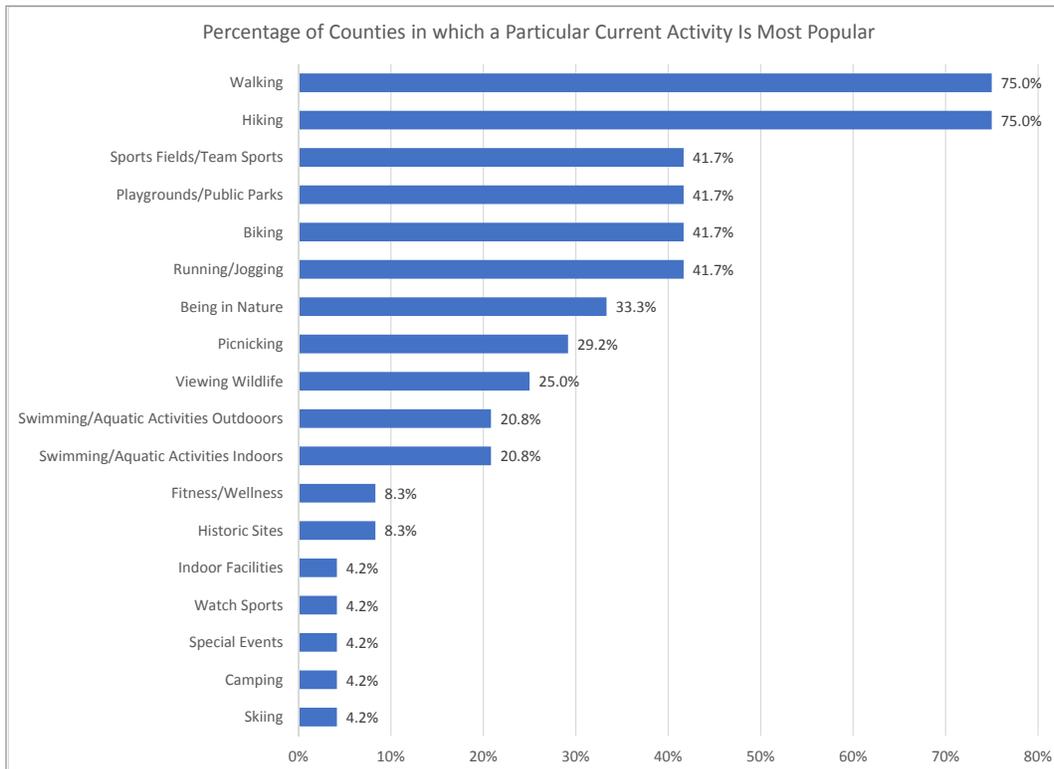
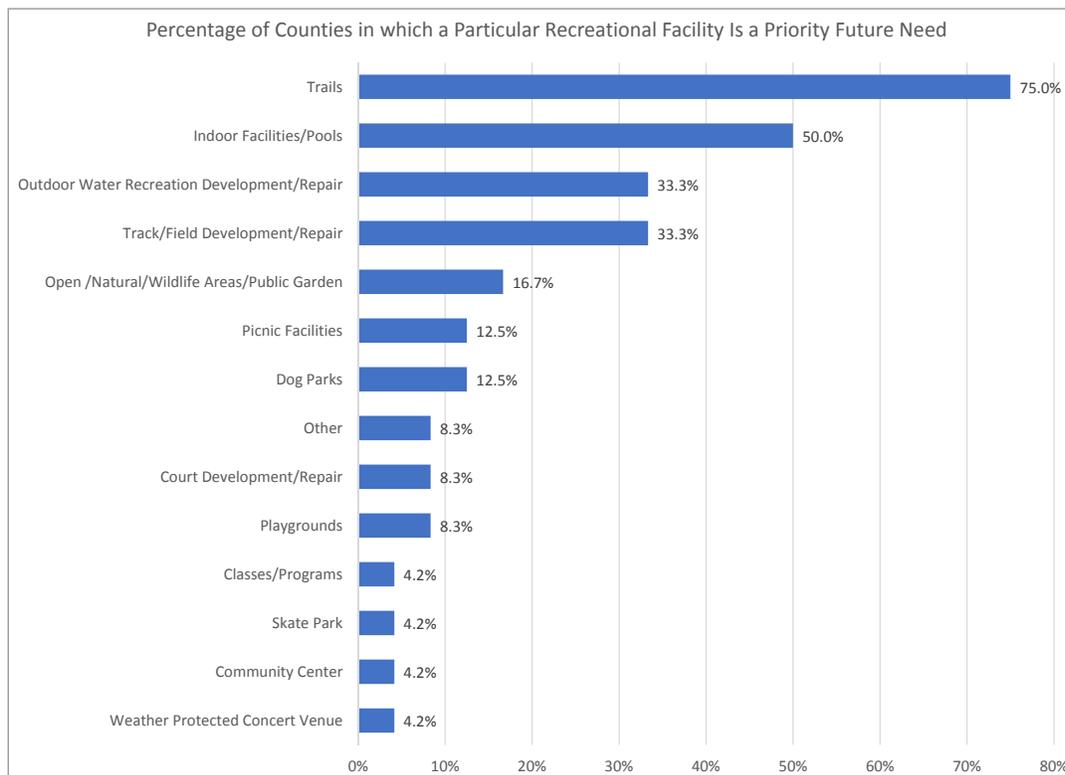


Figure 21: Survey Comparison - Outdoor Activities by Need



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Outdoor Recreation Participation

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

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

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

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

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

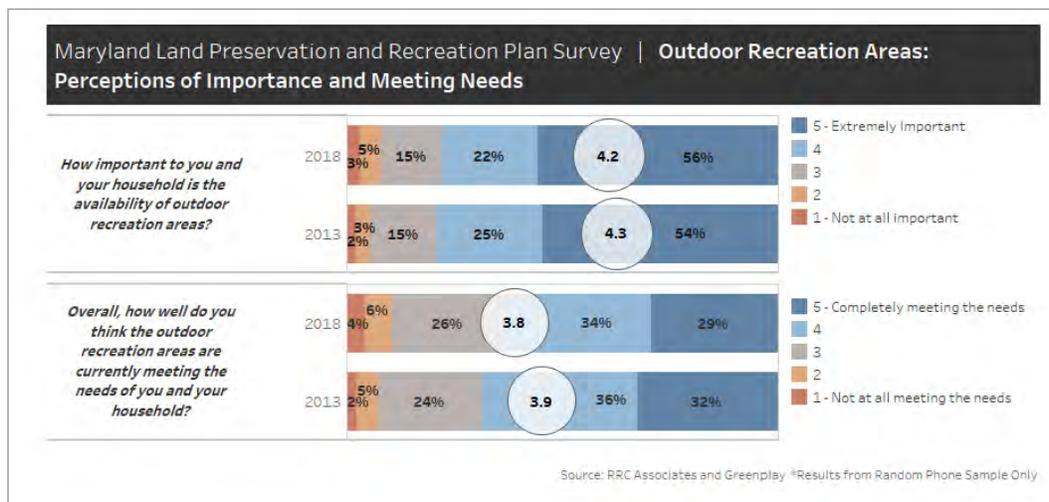
Regardless of where they lived, most residents accessed public lands by automobile and traveled less than an hour from home to do so. The availability of close-to-home recreation opportunities is important to Marylanders. This sentiment is also captured in many current local Land Preservation, Parks,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

TOP FIVE ACTIVITY PREFERENCES

- 1 Walking 
- 2 Hiking/Backpacking 
- 3 Running/Jogging 
- 4 Swimming Outdoors 
- 5 Visiting Playgrounds/
Nature Play Spaces 

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

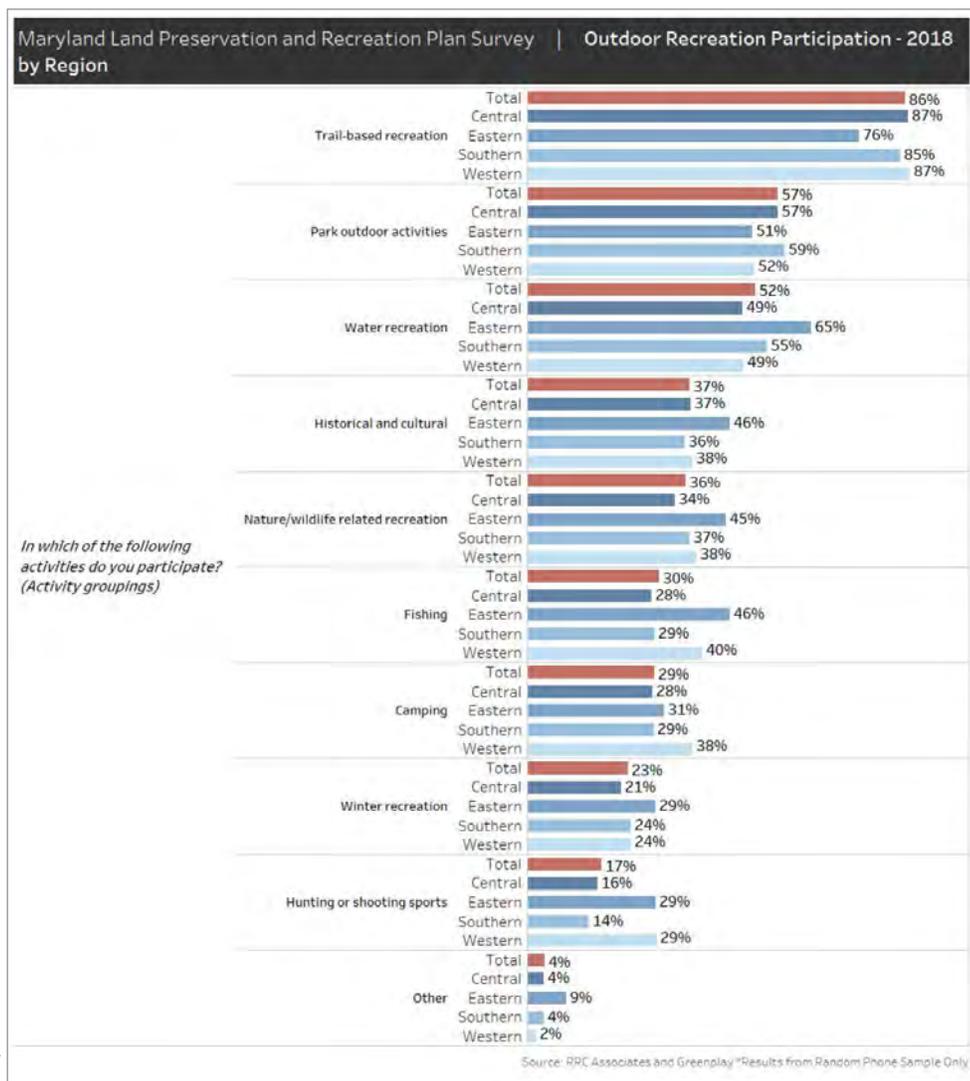
Figure 22: Importance of Outdoor Recreation and Needs Met



Top Activity Preferences

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

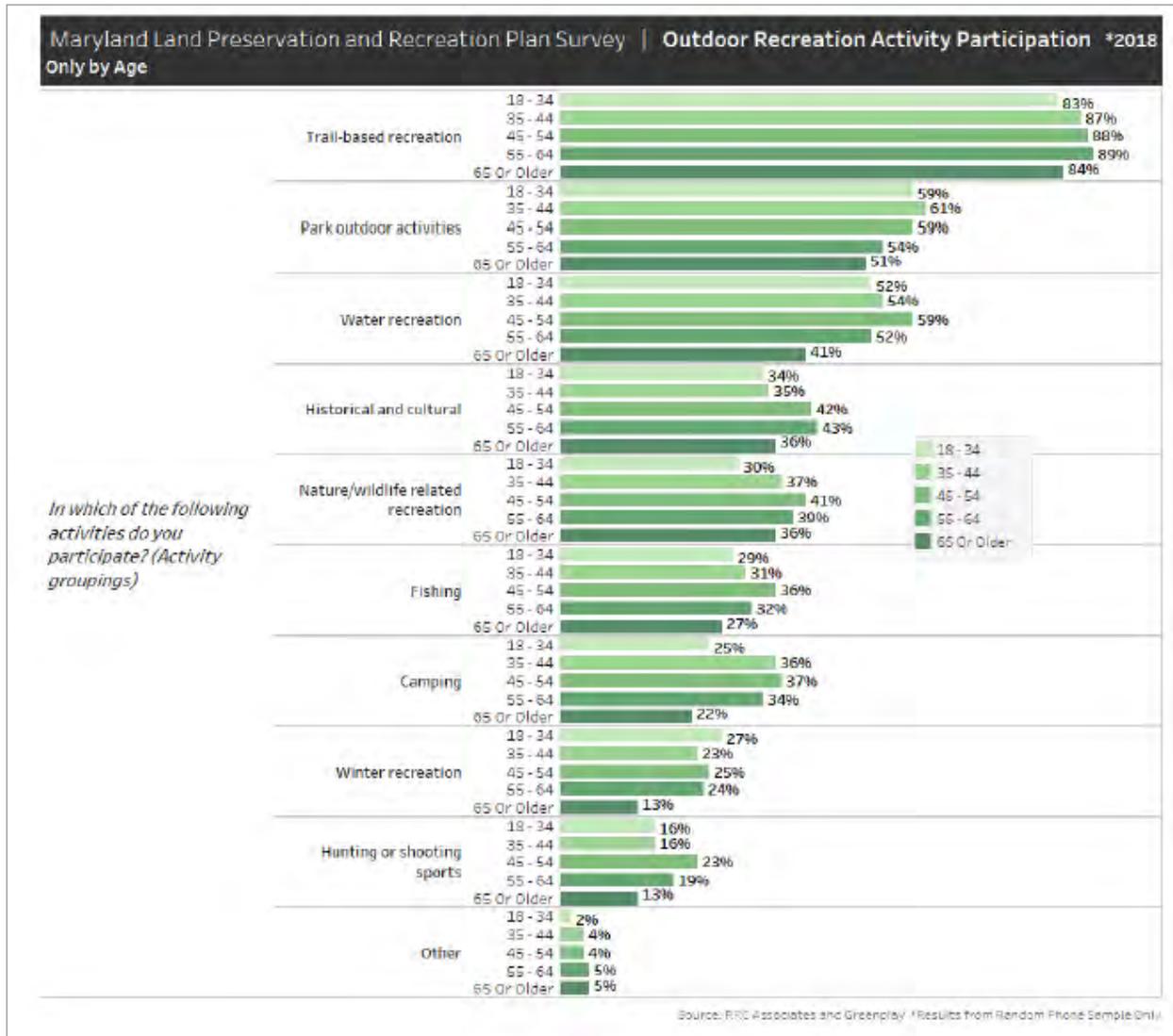
Figure 23: Outdoor Recreation Participation by Region



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

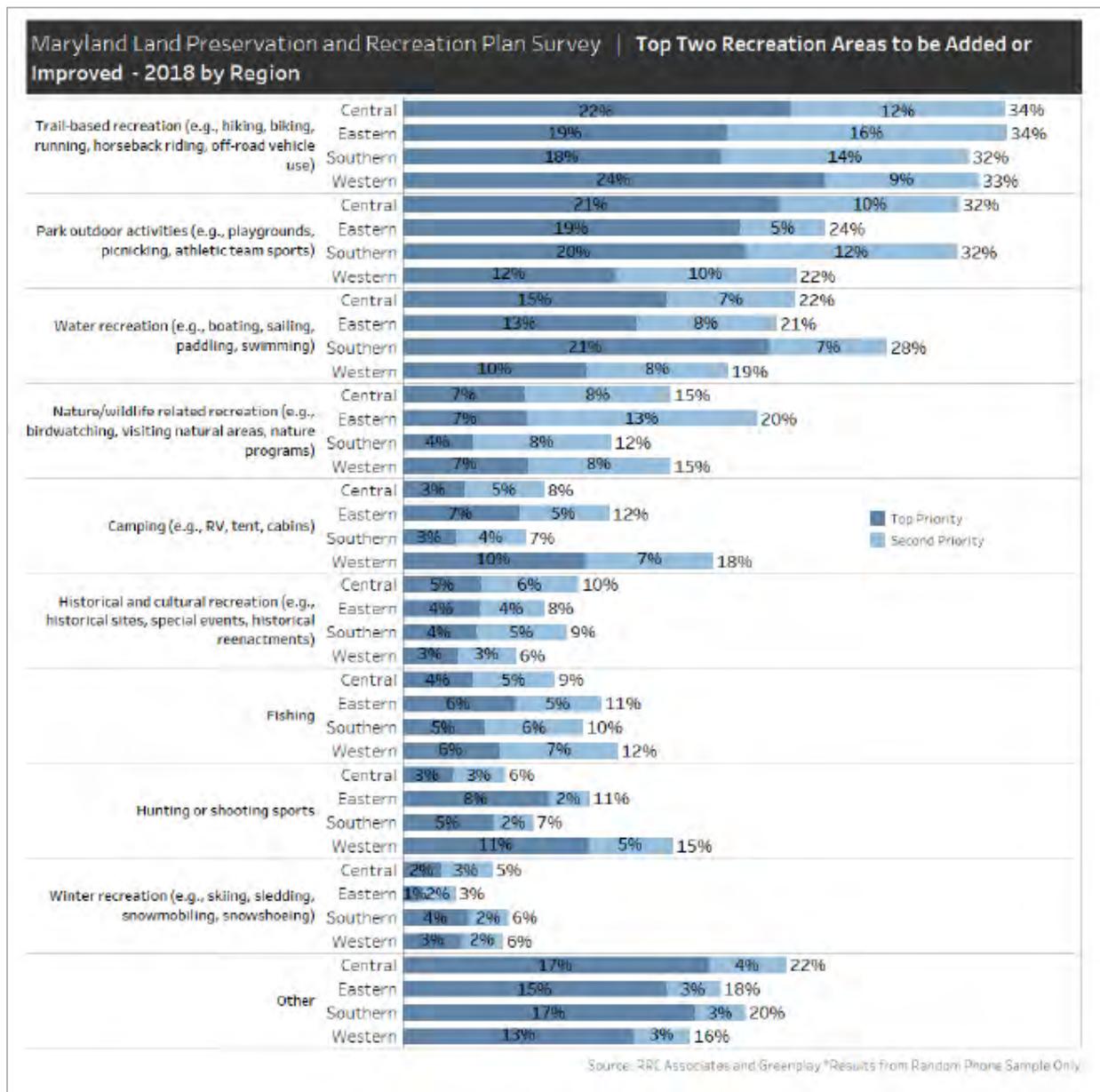
Figure 24: Outdoor Recreation Participation by Age



Priorities for Improvement

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

Figure 25: Top Recreation Opportunities to Improve by Regional Respondents



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

C. LEVEL OF SERVICE ANALYSIS

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

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

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

Methodology

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

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

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

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

Proximity vs. Access

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

Proximity Maps

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

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

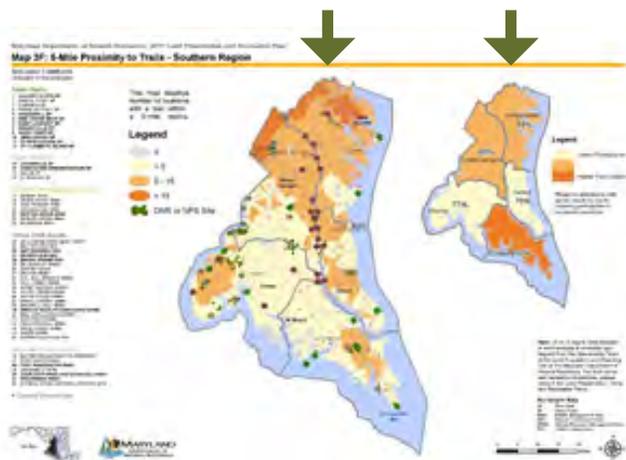
to provide a view of the current supply and demand for key outdoor recreation amenities and activities in Maryland. The resulting comparisons provide a basis to explore the dynamic between where outdoor amenities are located and where survey respondents indicated they participate in corresponding activities.

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

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

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

Proximity Map Participation Map



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

Analysis A: 5-Mile Proximity to Natural Areas

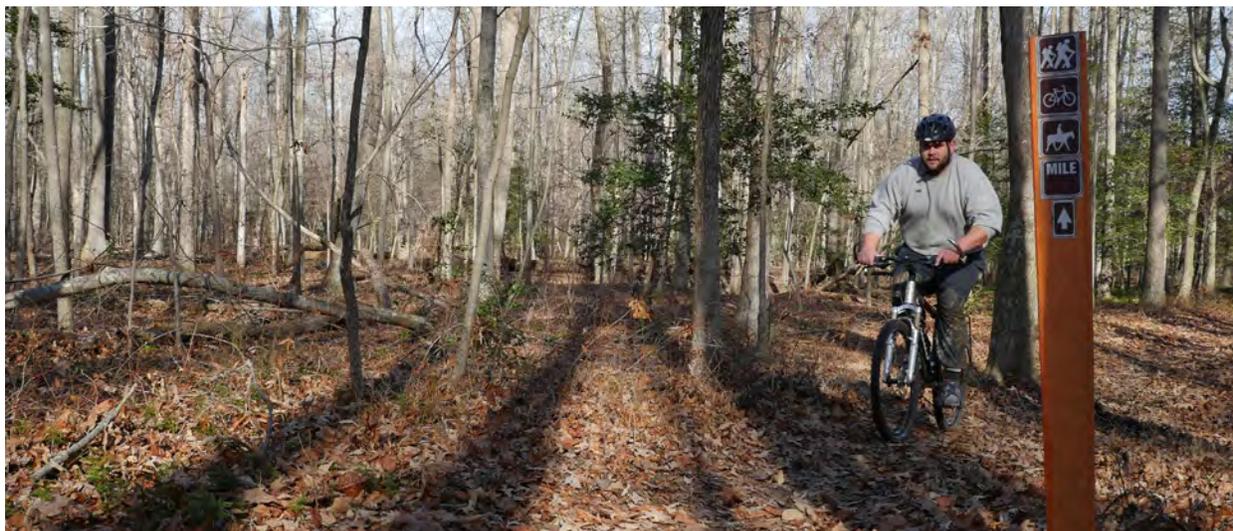
All locations included in the inventory were assumed to offer public natural areas. Based on this assumption this proximity map also served to display 5-mile proximity to all inventory locations. Participation rates were based on survey responses that indicate participation in “nature/wildlife related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

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

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

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

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



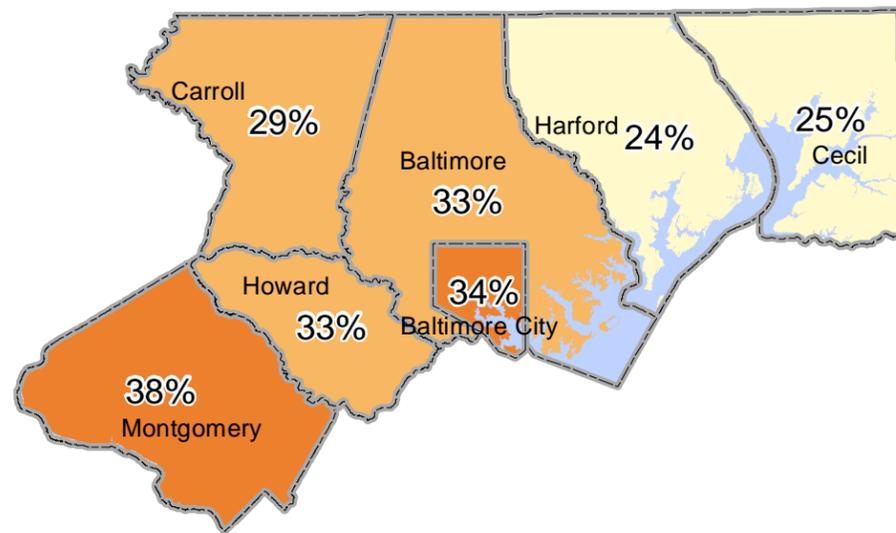
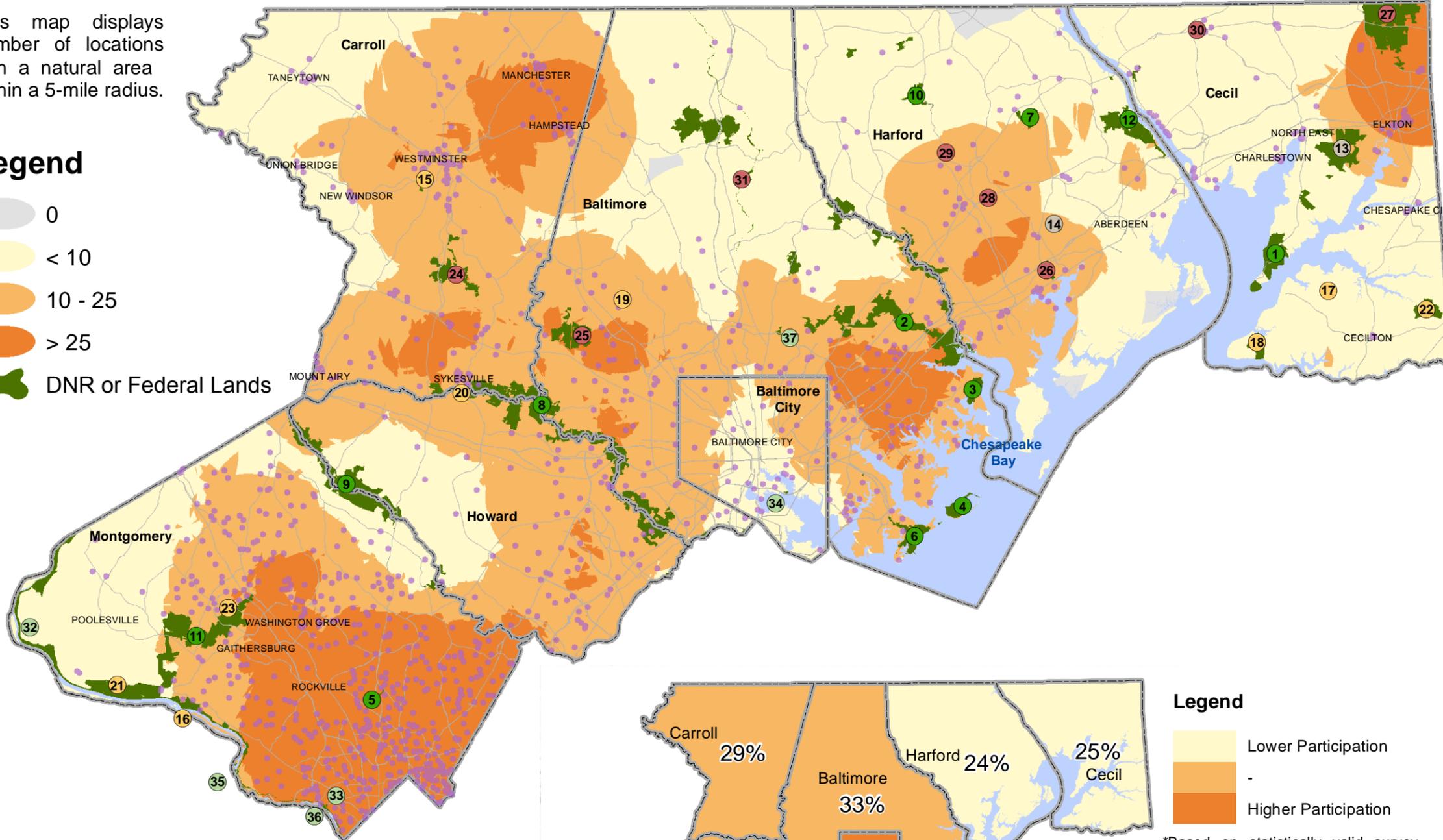
2015 First Day Hike | Cedarville State Forest Photo by Stephen Badger

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

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

Legend

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



Legend

- Lower Participation
- Higher Participation

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

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

State Parks

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

State Forests

- 13 **ELK NECK SF**
- 14 **STONE DEMONSTRATION SF**

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

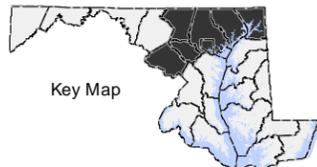
- 32 **CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK**
- 33 **CLARA BARTON NATIONAL HISTORIC SITE**
- 34 **FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE**
- 35 **GEORGE WASHINGTON MEMORIAL PARKWAY**
- 36 **GLEN ECHO PARK**
- 37 **HAMPTON NATIONAL HISTORIC SITE**

County/ Baltimore City Properties

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

Acronym Key

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



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

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

State Parks

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

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

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

Other DNR Assets

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

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

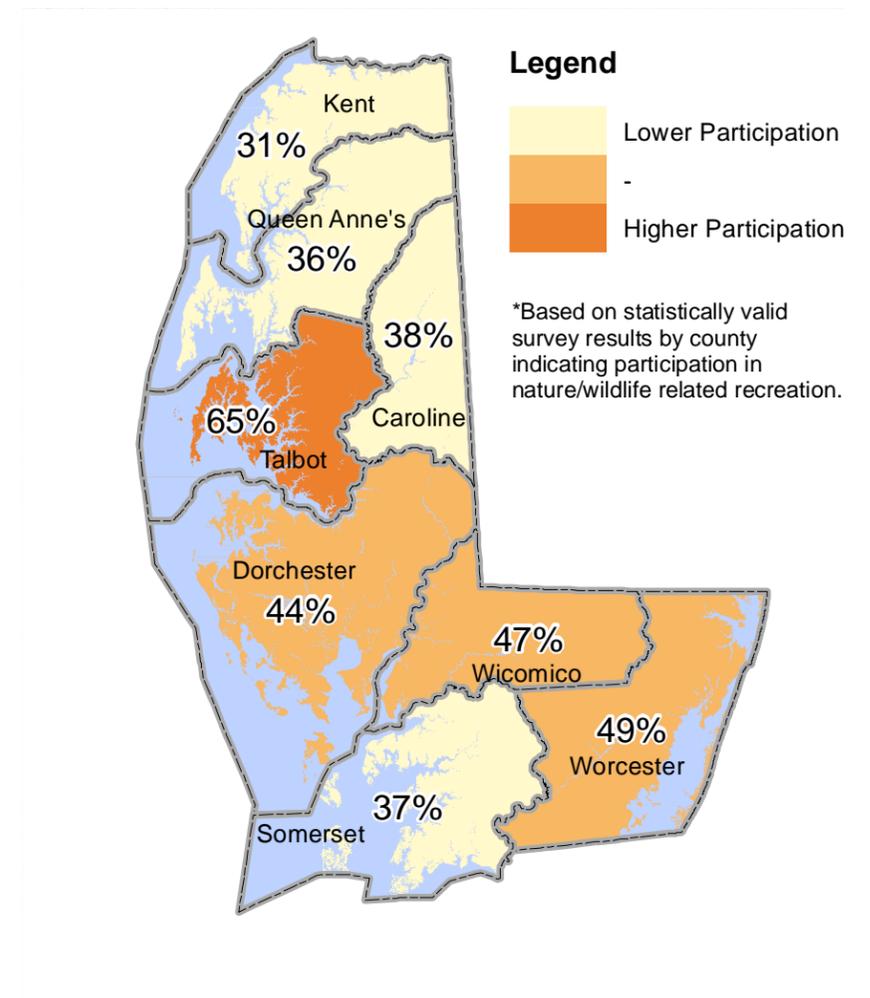
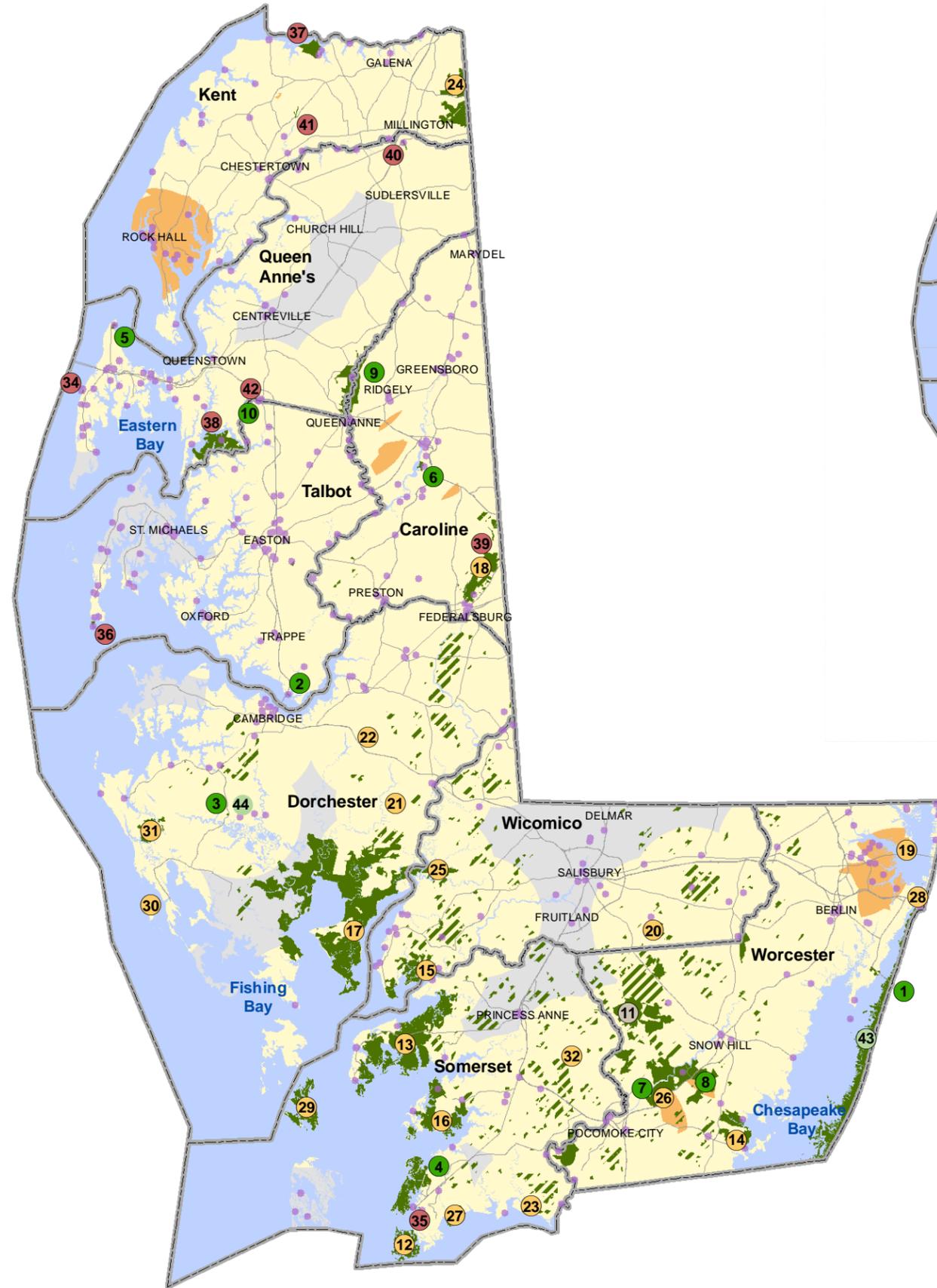
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

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

Legend

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



Legend

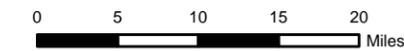
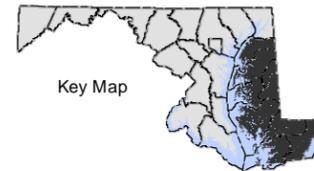
- Lower Participation
-
- Higher Participation

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

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

Acronym Key

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



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

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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

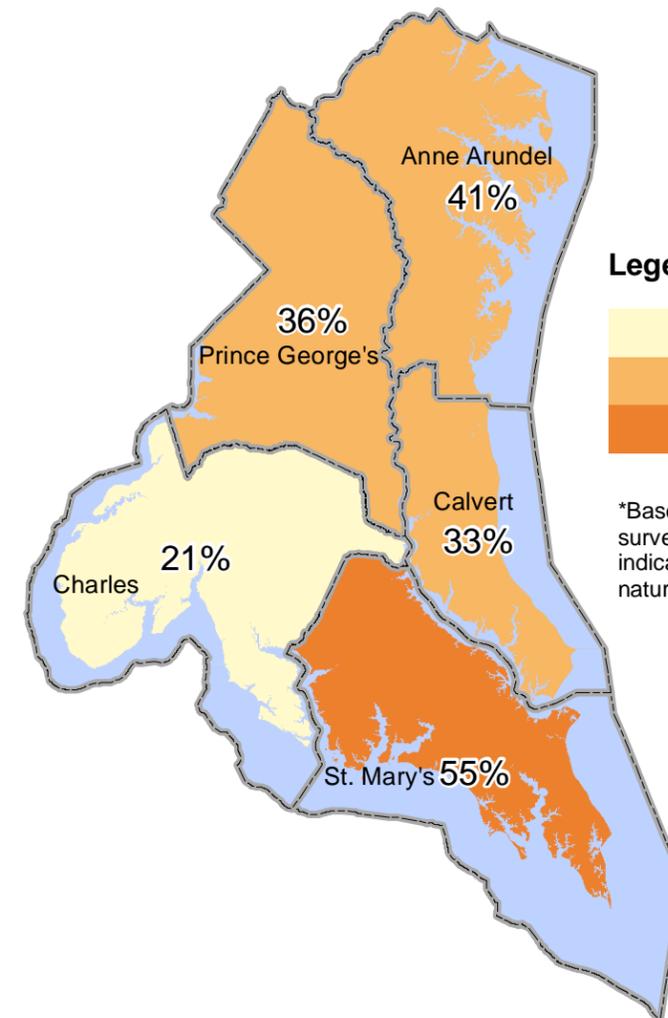
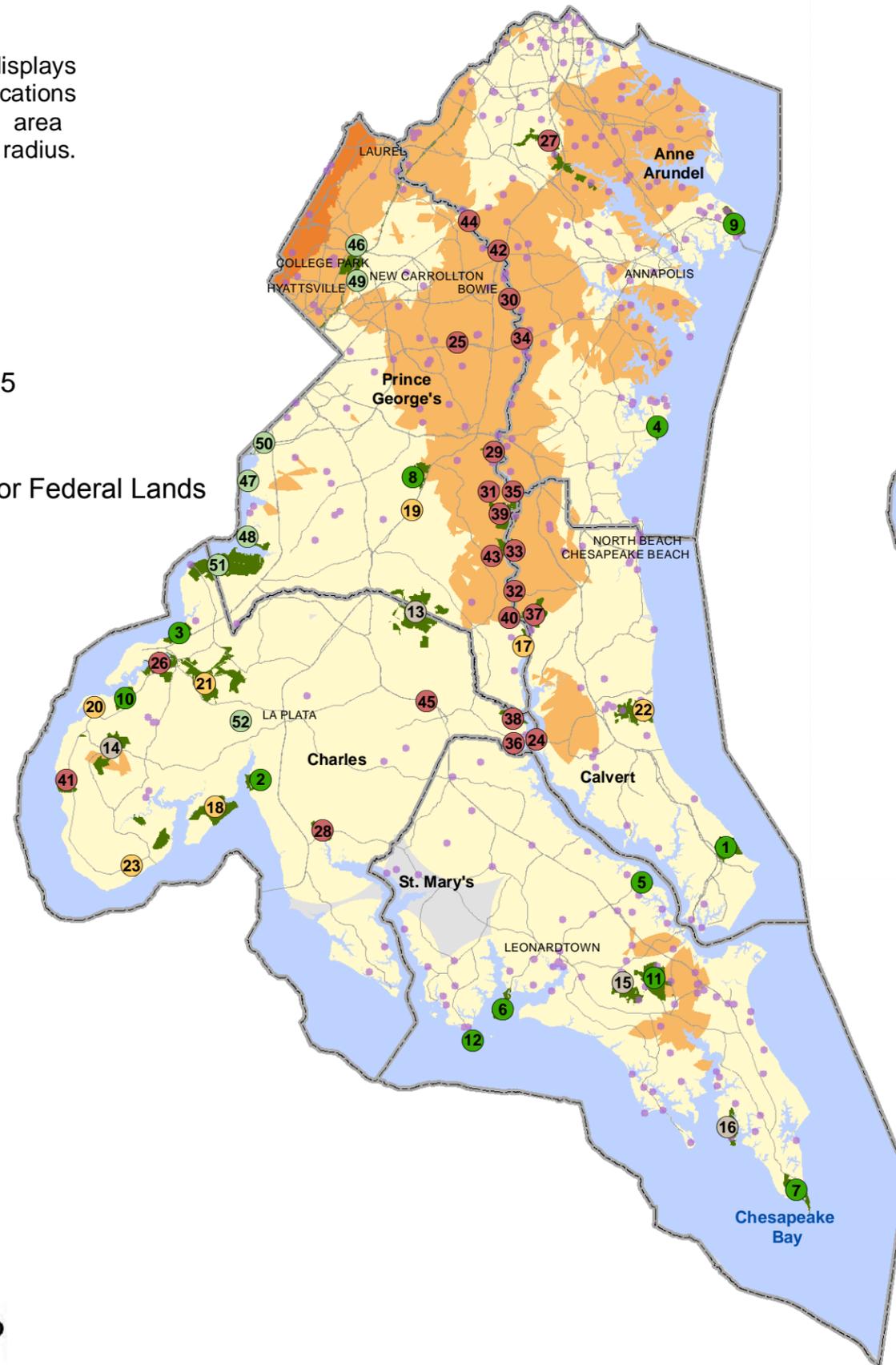
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

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

Legend

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



Legend

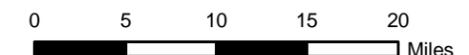
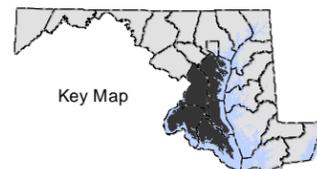
- Lower Participation
-
- Higher Participation

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

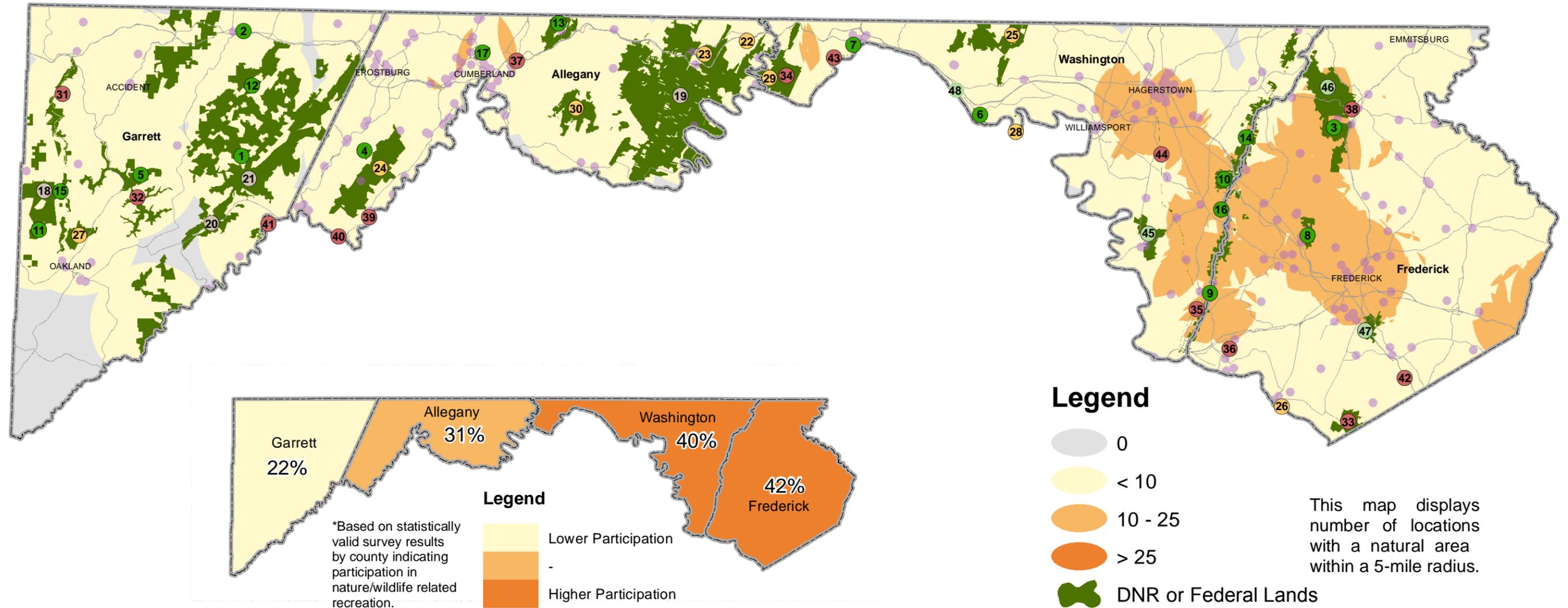
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

Acronym Key

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



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



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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

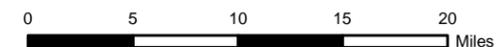
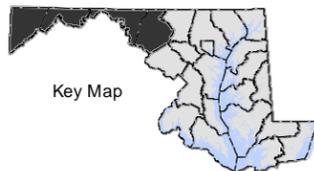
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

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

Acronym Key

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



Analysis B: 5-Mile Proximity to Water Recreation

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

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

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

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

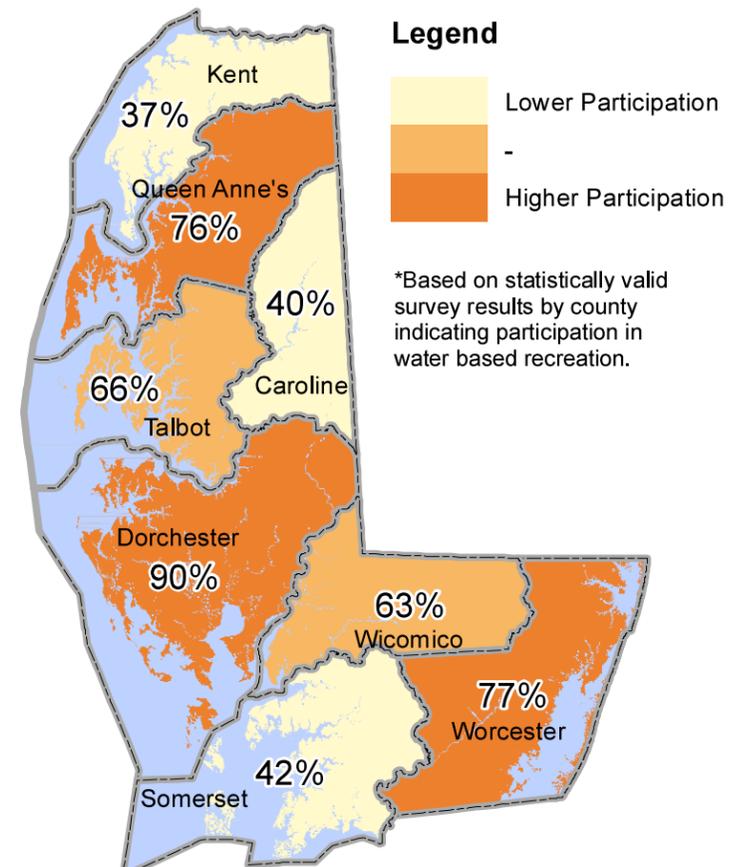
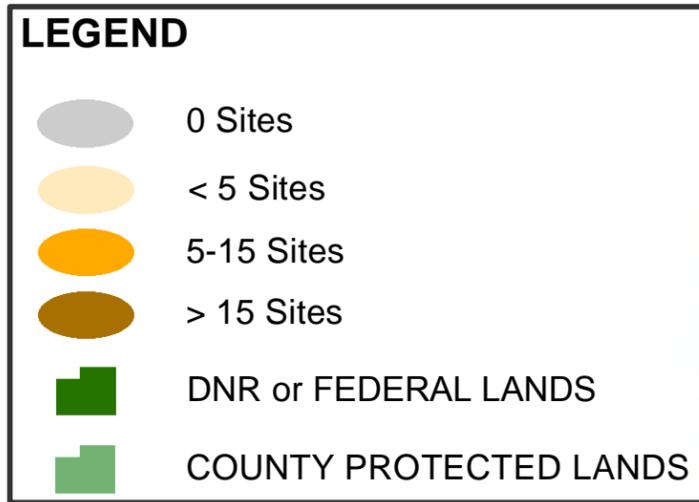


Big Spray by Paula Neumann

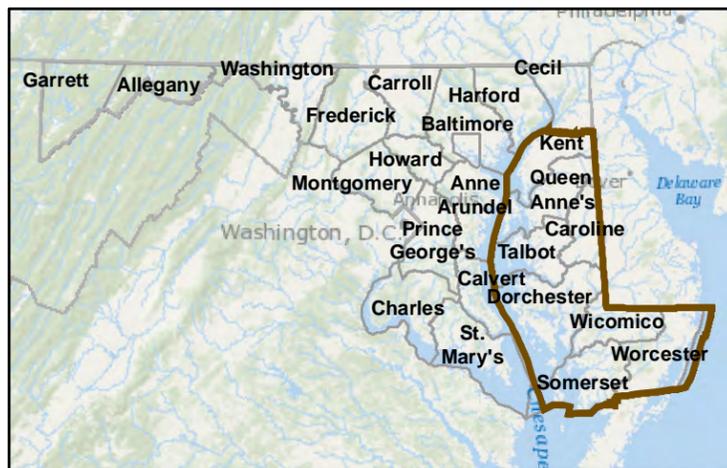
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5-Mile Proximity to Water Recreation - Eastern Region

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.

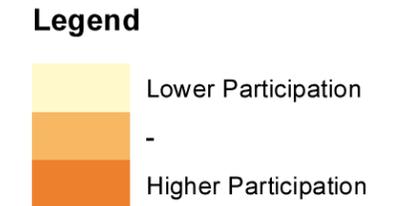
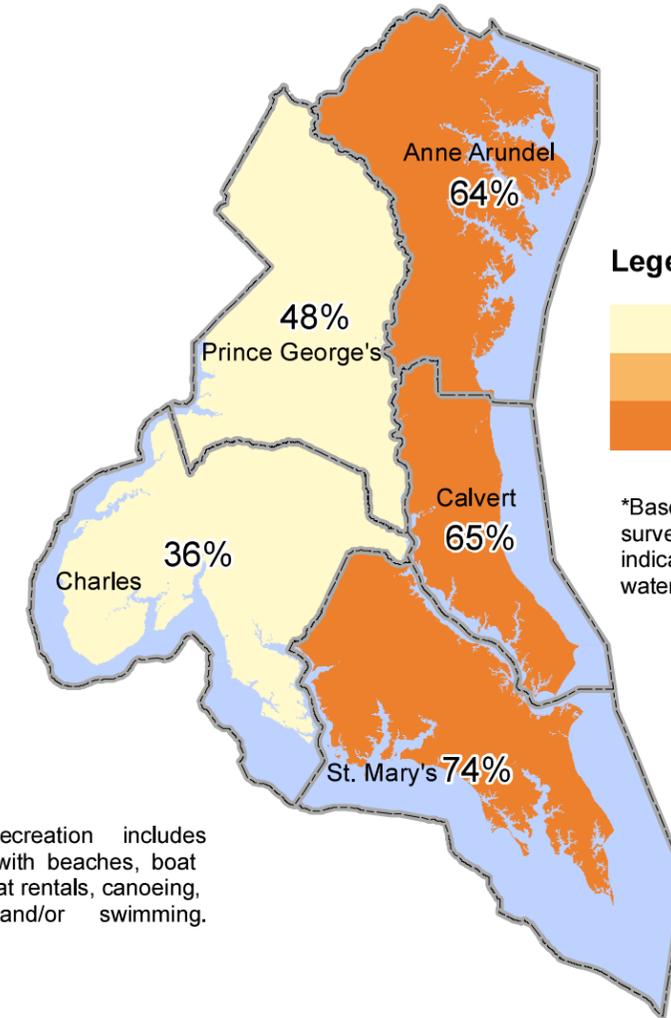
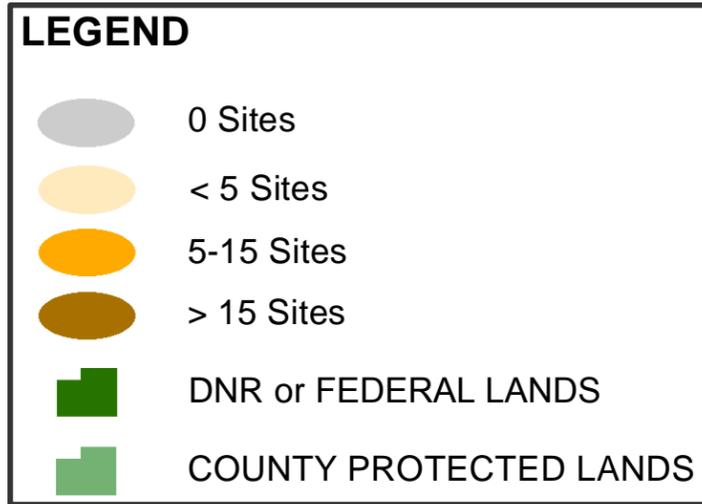


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



5-Mile Proximity to Water Recreation - Southern Region

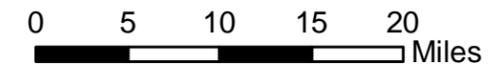
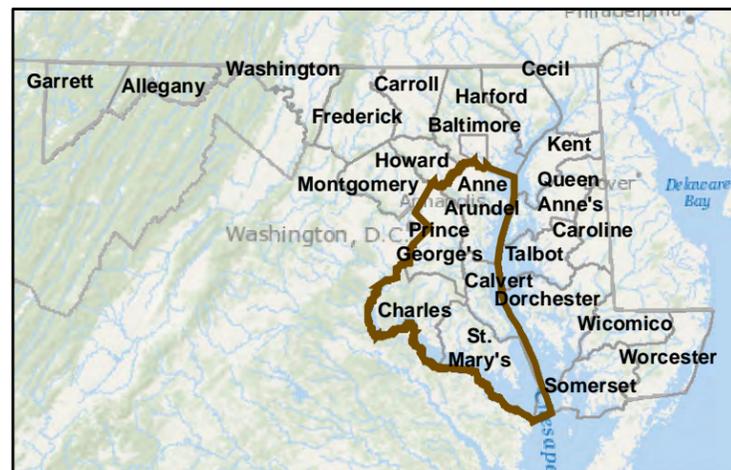
This map displays number of locations with water recreation* within a 5-mile radius.



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

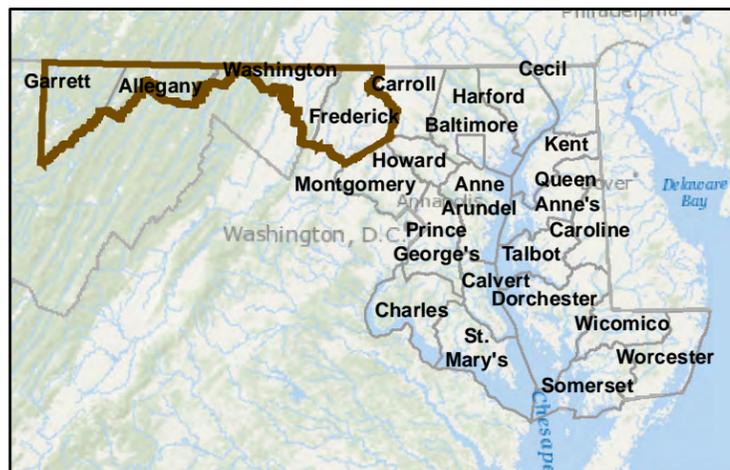
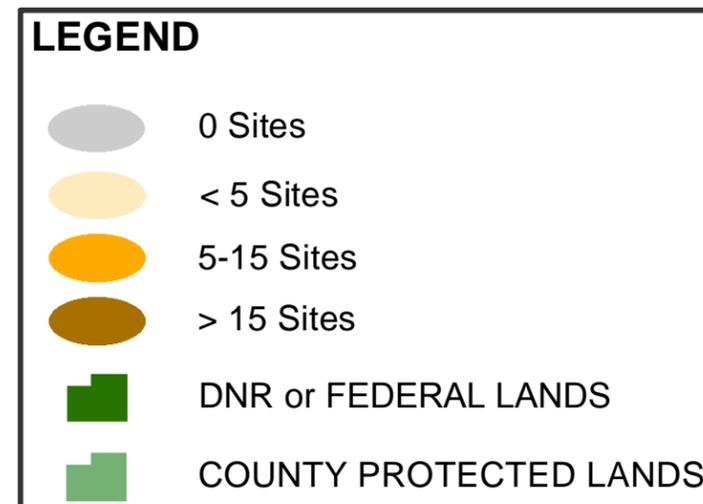
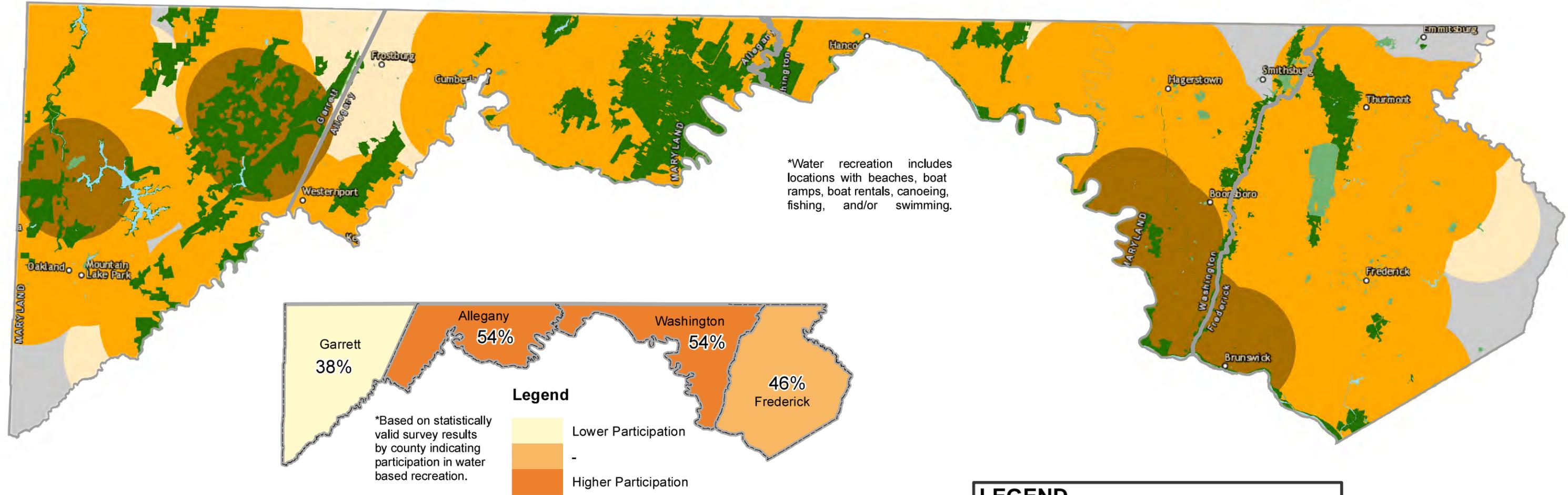
*Water recreation includes locations with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming.

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.



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



Analysis C: 5-Mile Proximity to Picnicking

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

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

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

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

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



Photo by Stephen Badger, DNR Office of Communications

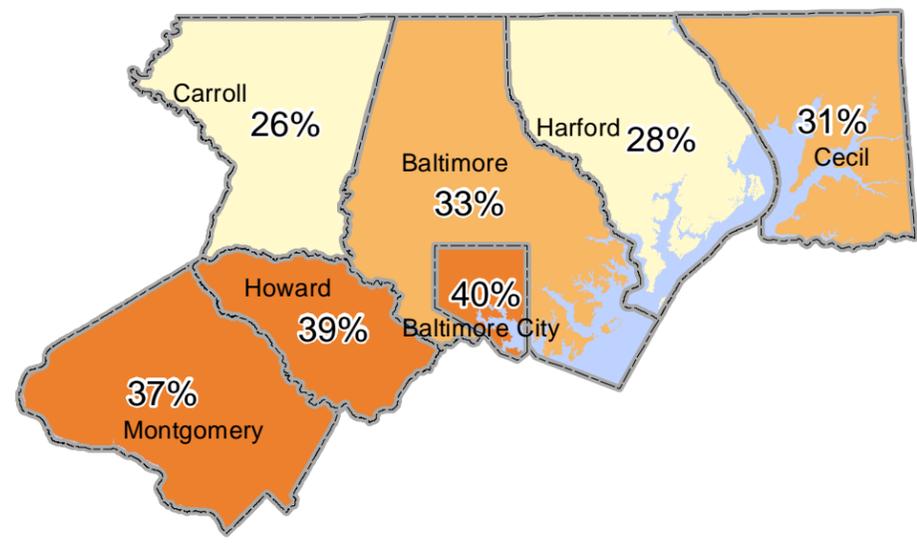
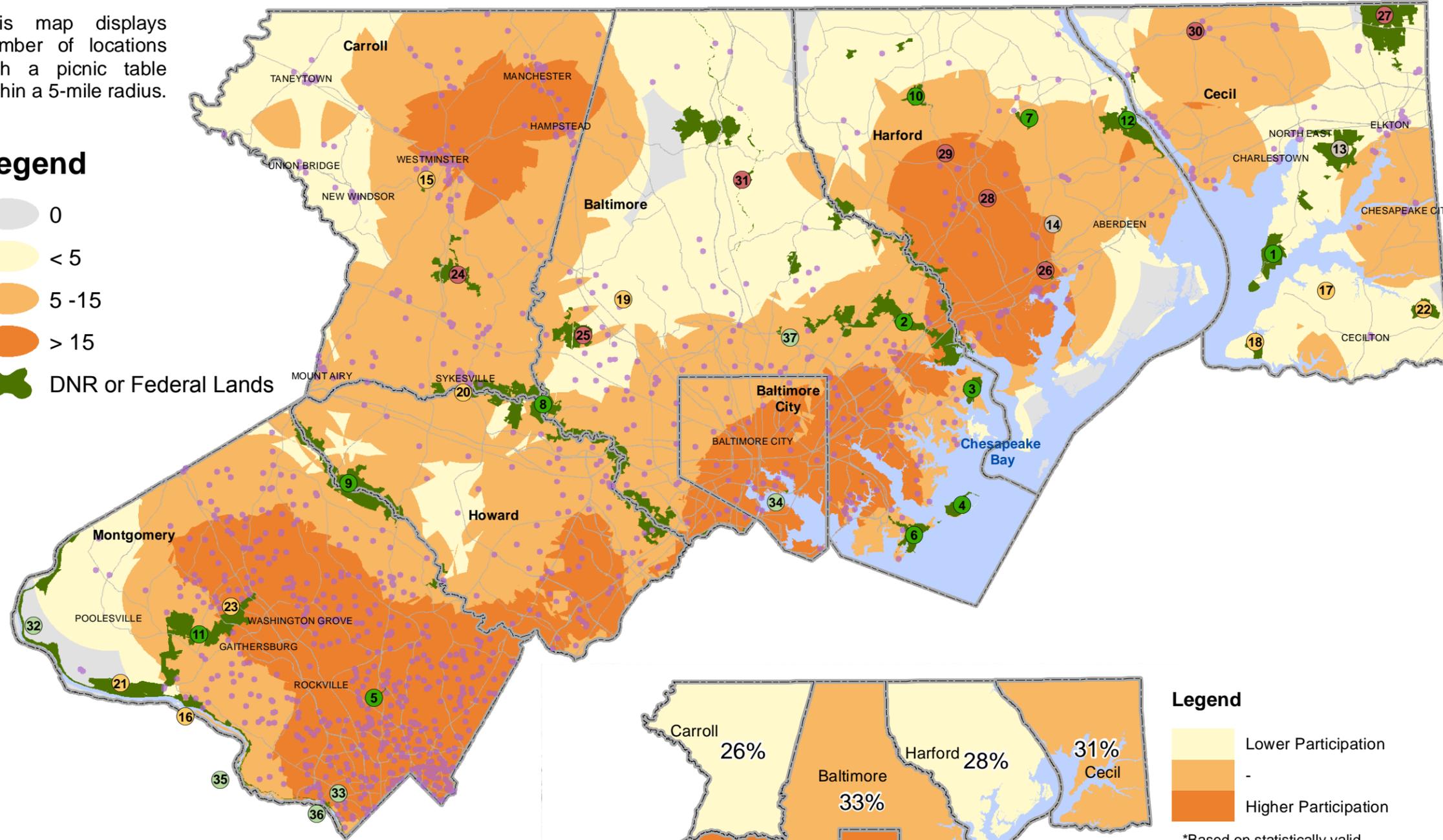
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Map 1C: 5-Mile Proximity to Picnicking - Central Region

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

Legend

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



Legend

- Lower Participation
- Higher Participation

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

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

State Parks

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

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

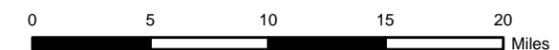
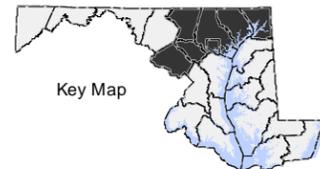
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 **GEORGE WASHINGTON MEMORIAL PARKWAY**
- 36 **GLEN ECHO PARK**
- 37 HAMPTON NATIONAL HISTORIC SITE

• County/ Baltimore City Properties

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

Acronym Key

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



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

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

State Parks

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

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

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

Other DNR Assets

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

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

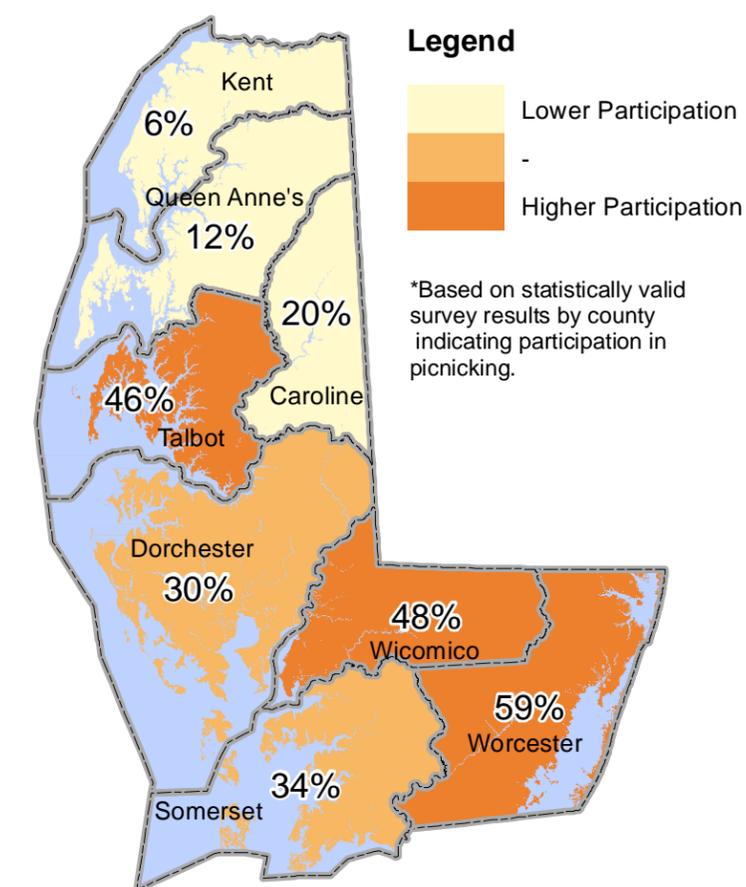
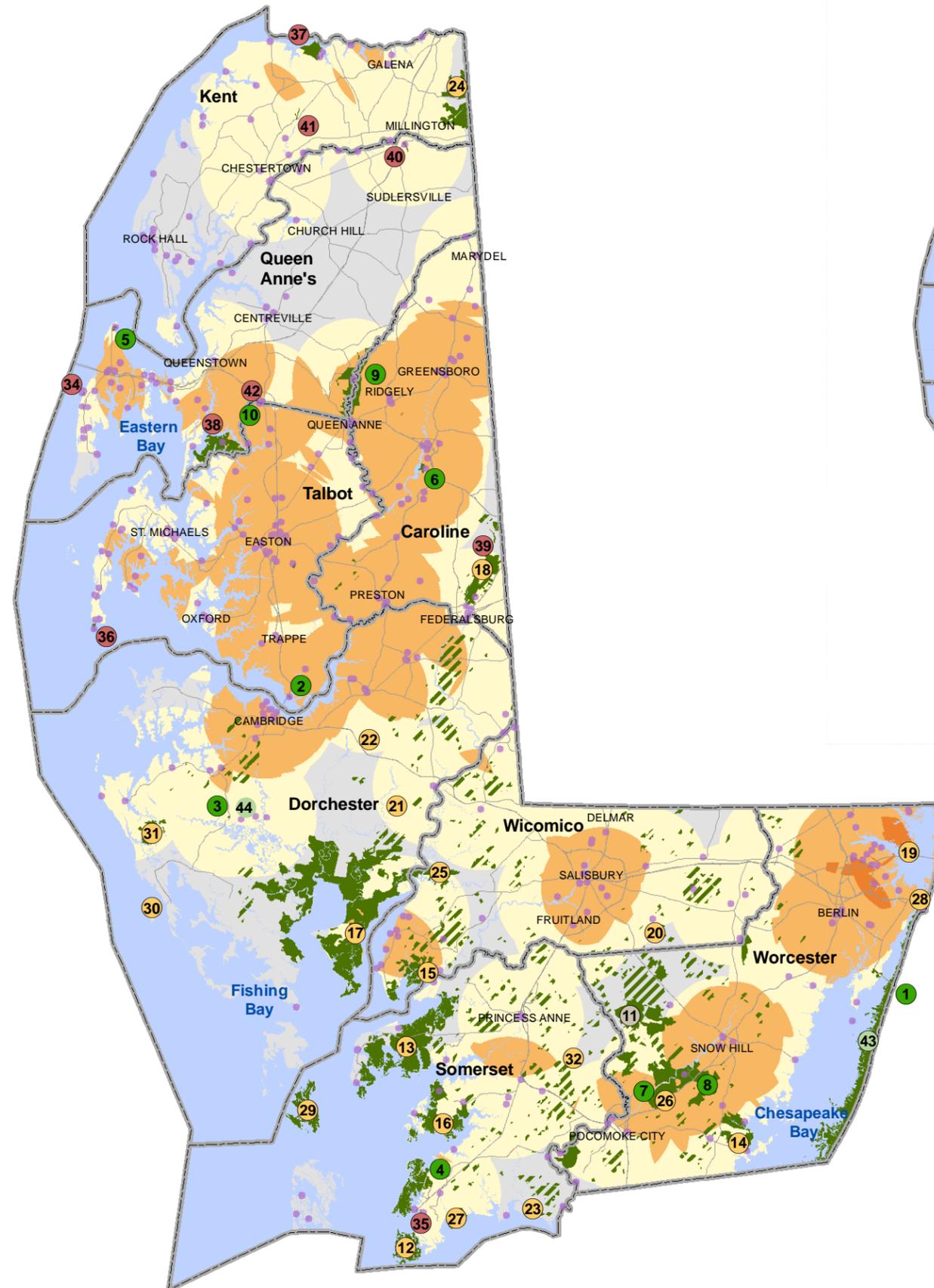
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

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

Legend

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



Legend

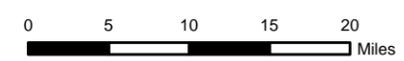
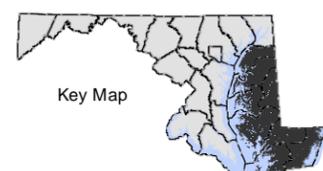
- Lower Participation
-
- Higher Participation

*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

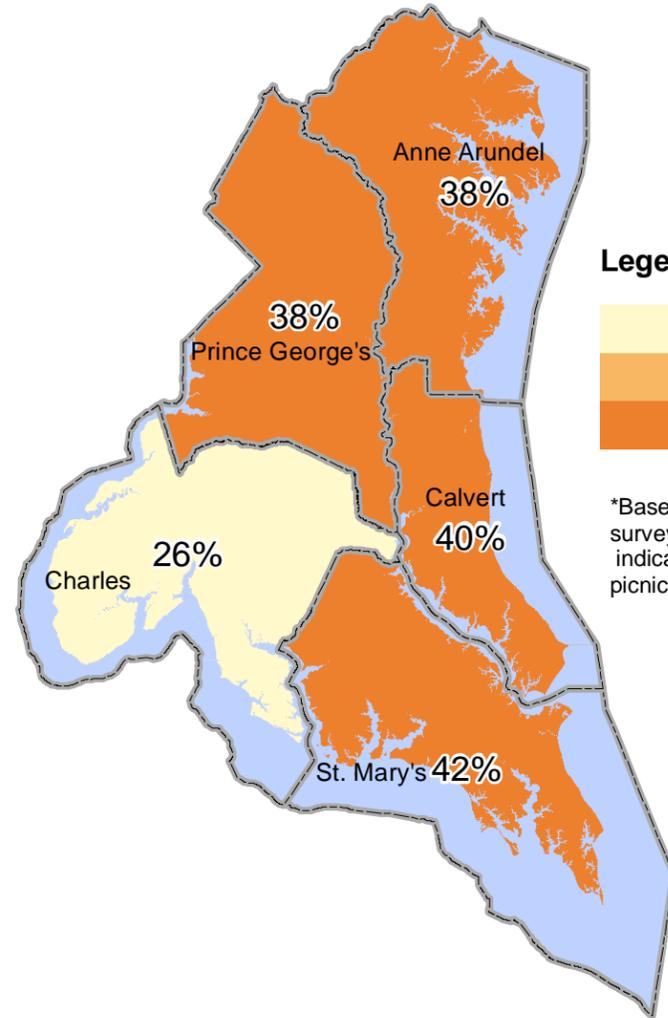
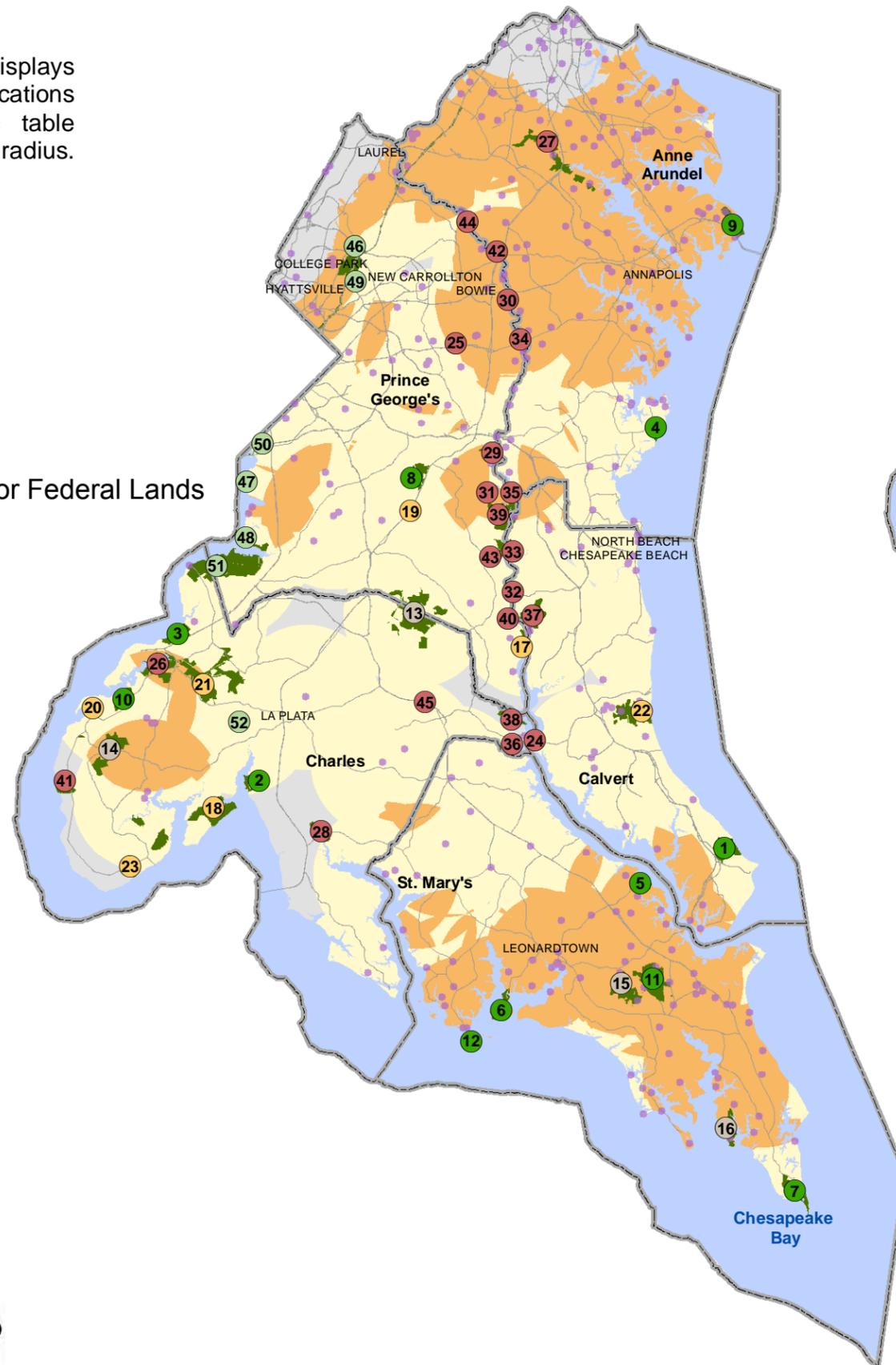
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

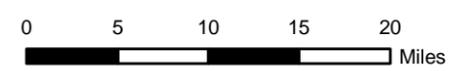
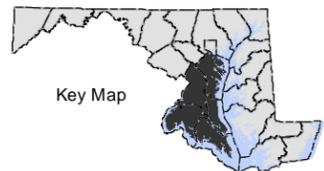
- Lower Participation
-
- Higher Participation

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

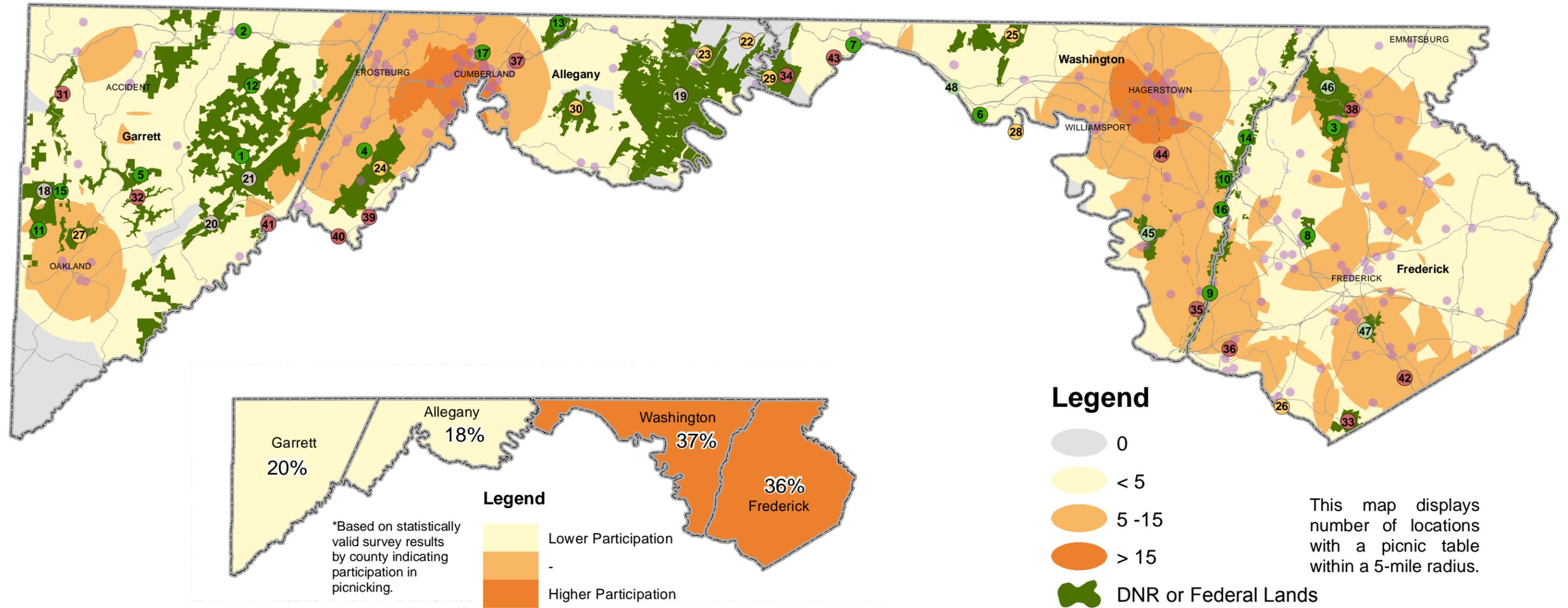
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

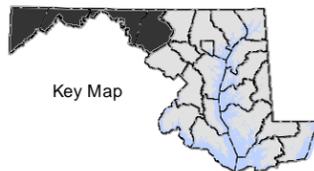
- 45 **ANTIETAM NATIONAL BATTLEFIELD**
- 46 **CATOCTIN MOUNTAIN PARK**
- 47 **MONOCACY NATIONAL BATTLEFIELD**
- 48 **CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK**

County Properties

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

Acronym Key

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



Analysis D: 5-Mile Proximity to Hunting

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

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

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

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



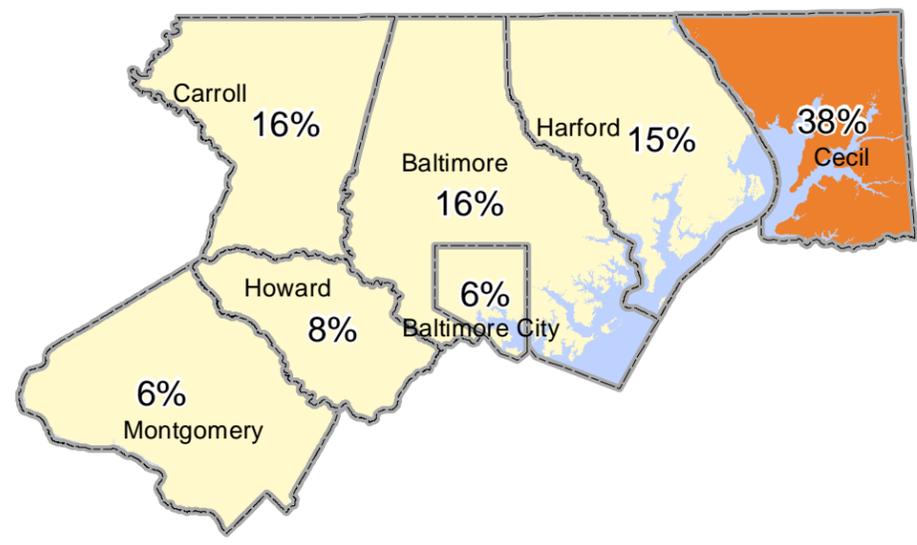
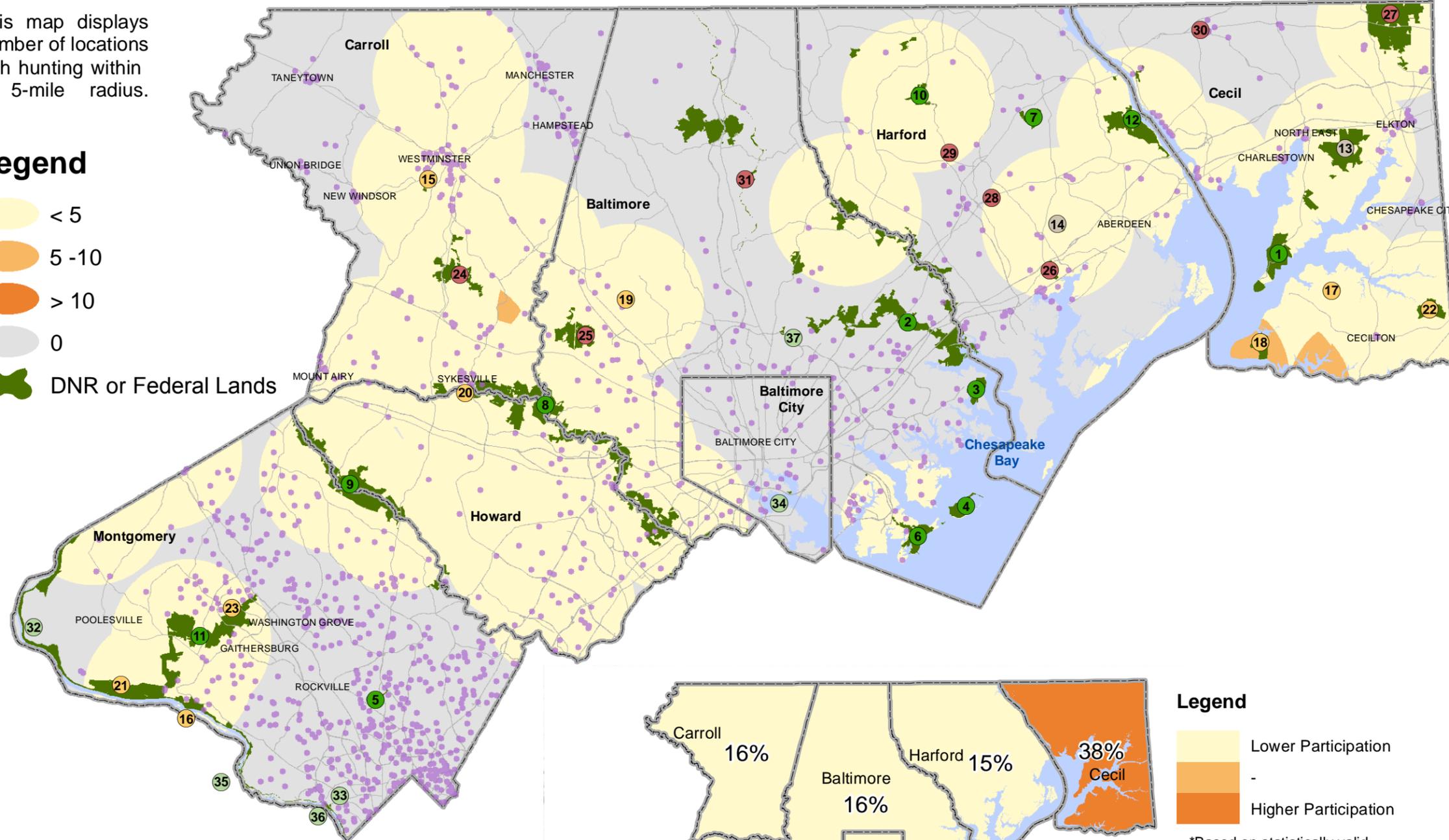
*2015 National Hunting and Fishing Day
Wildlife and Heritage Service*

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

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

Legend



Legend



*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 GWYNNBROOK WMA
- 20 HUGG-THOMAS WMA
- 21 **MCKEE BESHES WMA**
- 22 **OLD BOHEMIA WMA**
- 23 STRIDER WMA

Other DNR Assets

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

Federal Lands

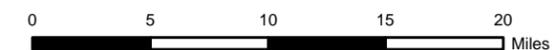
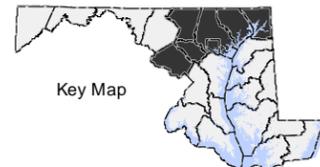
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

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

Acronym Key

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



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

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

State Parks

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

State Forests

- 11 **POCOMOKE RIVER SF**

Wildlife Management Areas

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

Other DNR Assets

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

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

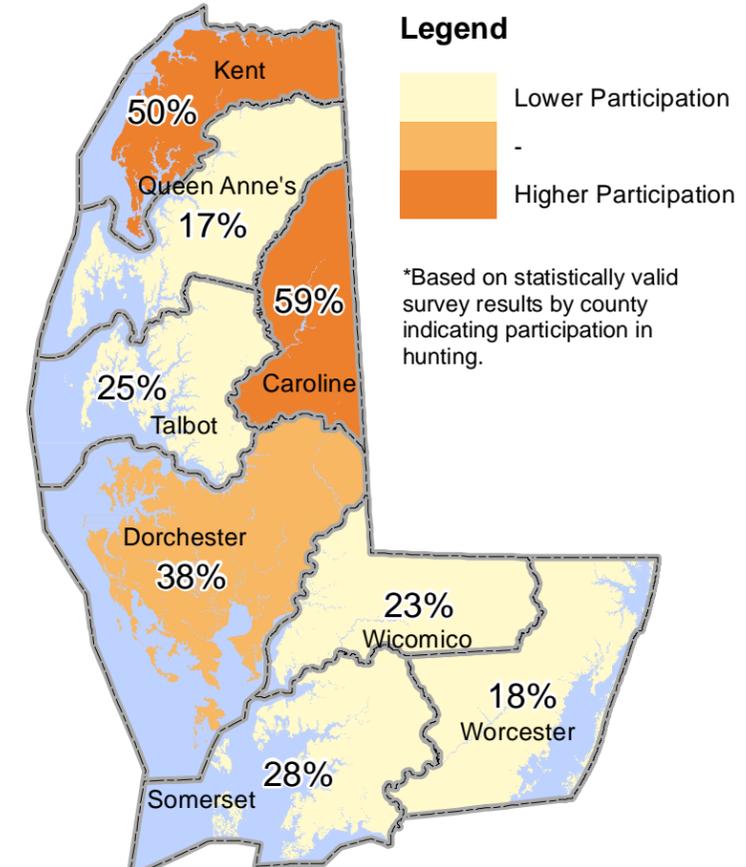
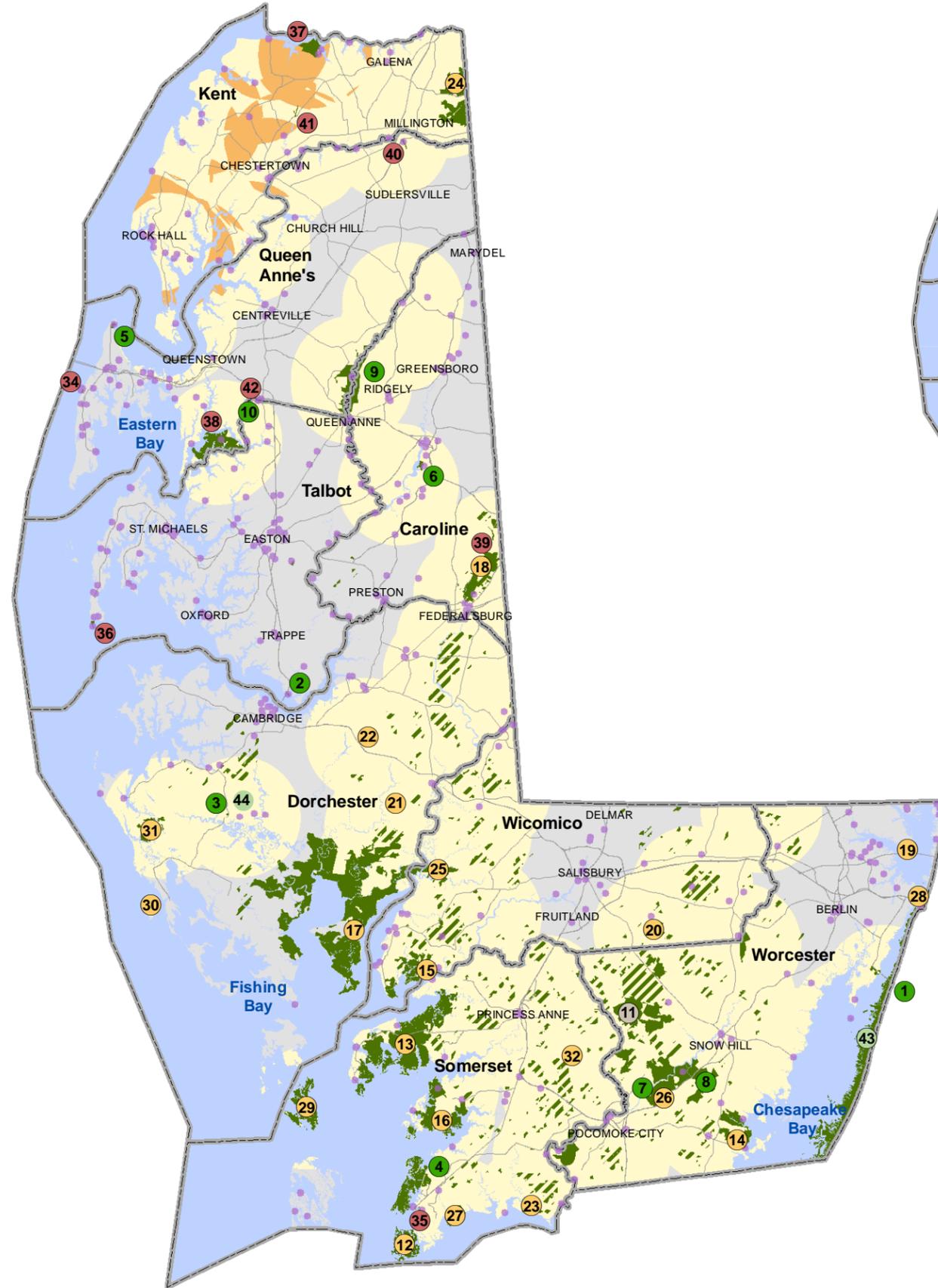
- 43 **ASSATEAGUE ISLAND NATIONAL SEASHORE**
- 44 **BLACKWATER NATIONAL WILDLIFE REFUGE**

County Properties

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

Legend

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



Legend

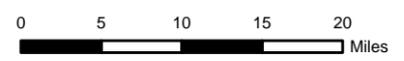
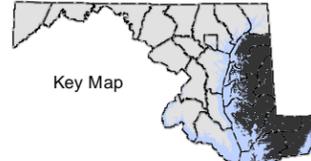
- Lower Participation
-
- Higher Participation

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

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

Acronym Key

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



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

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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

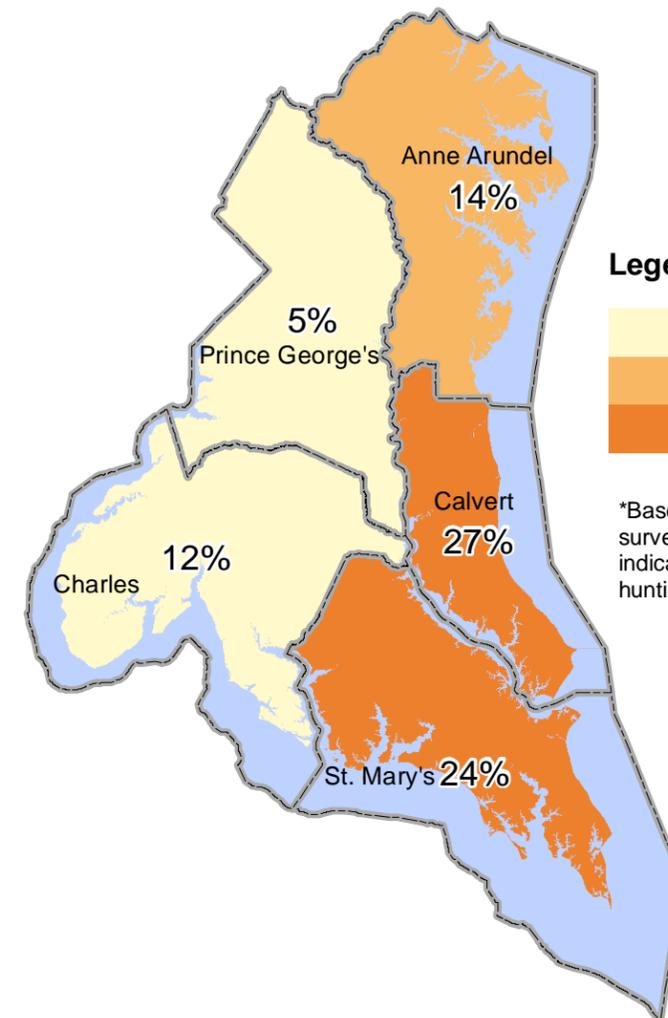
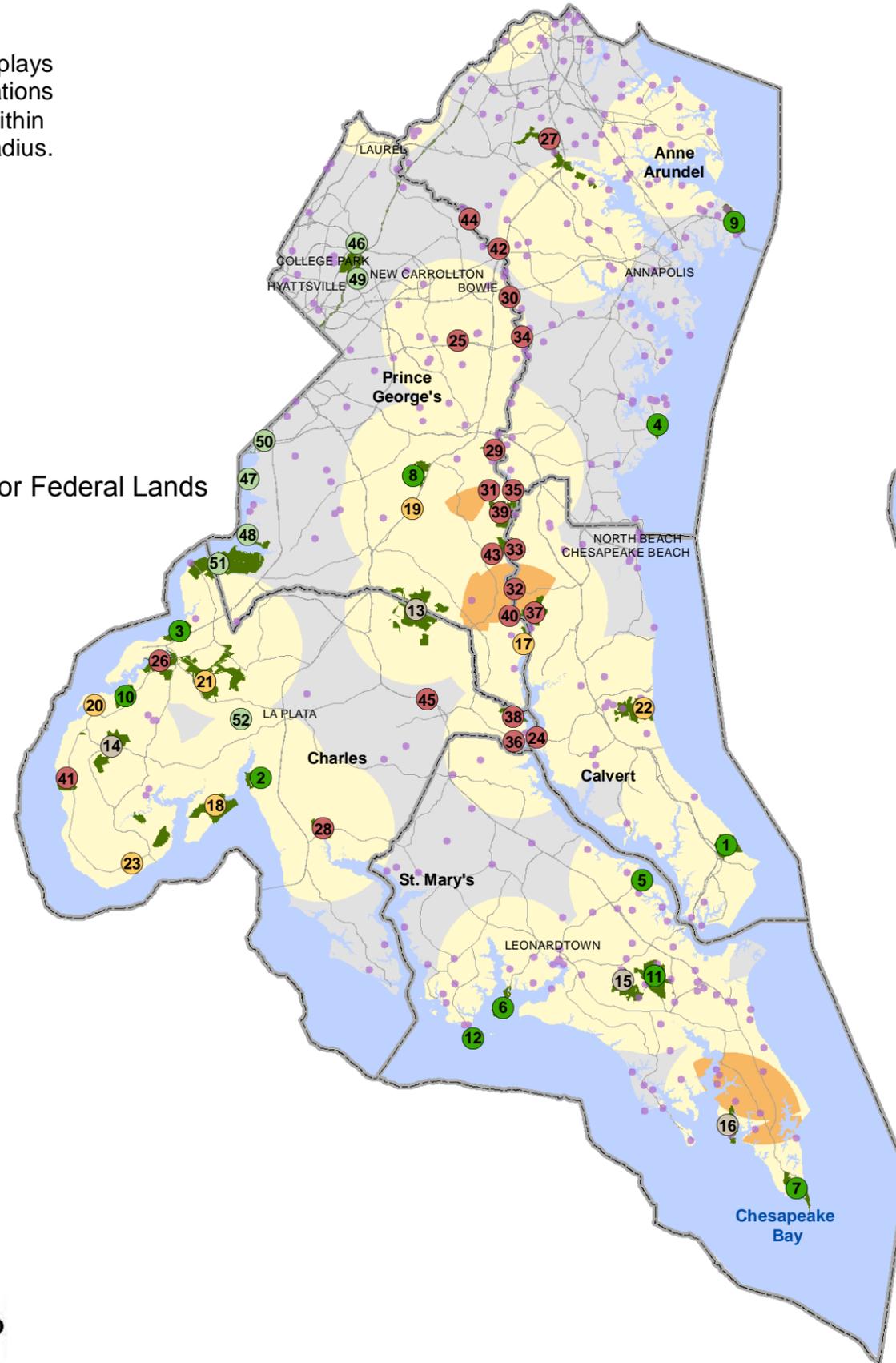
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

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

Legend

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



Legend

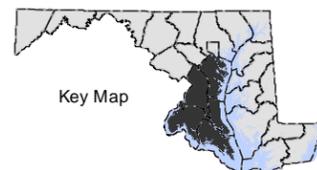
- Lower Participation
-
- Higher Participation

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

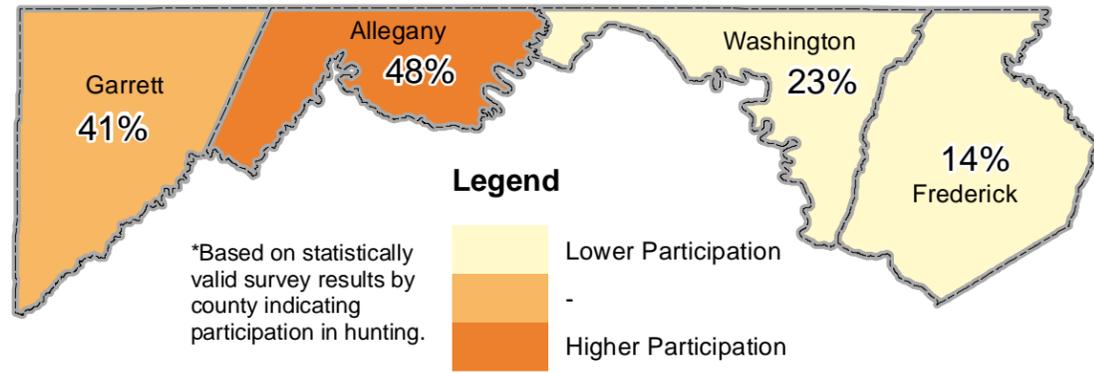
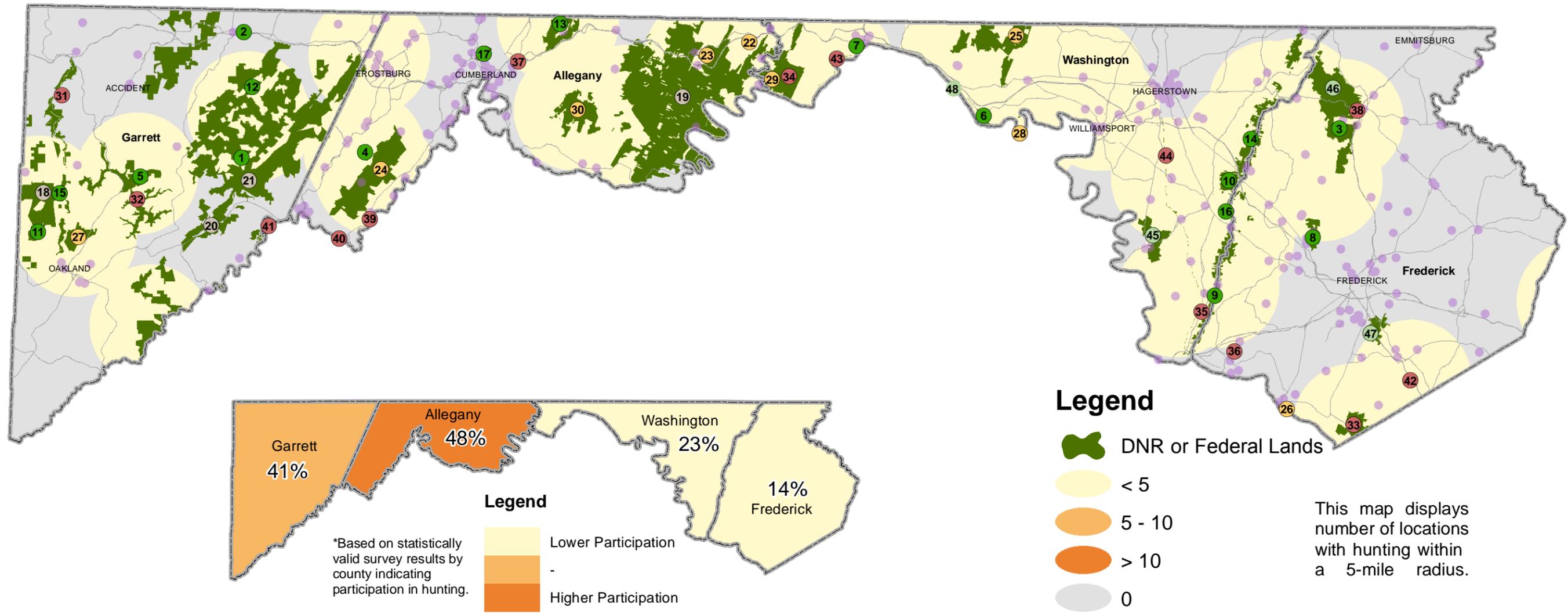
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

Acronym Key

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



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



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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

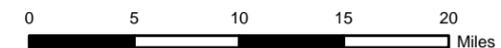
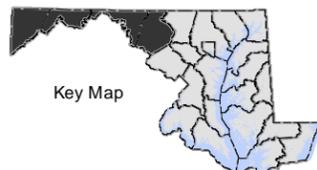
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

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

Acronym Key

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



Analysis E: 5-Mile Proximity to Fishing

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

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

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

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

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

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



The Sun’s Reflection on Life by Dan Shannon

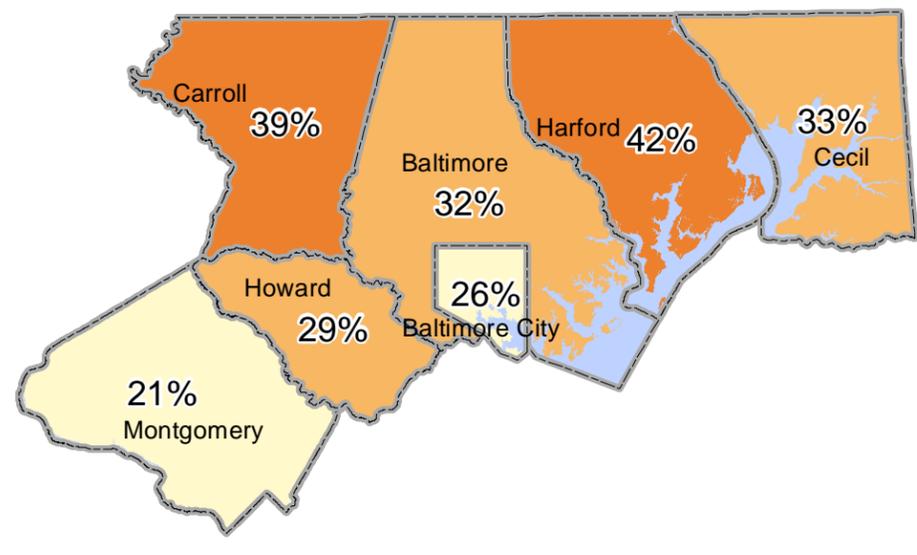
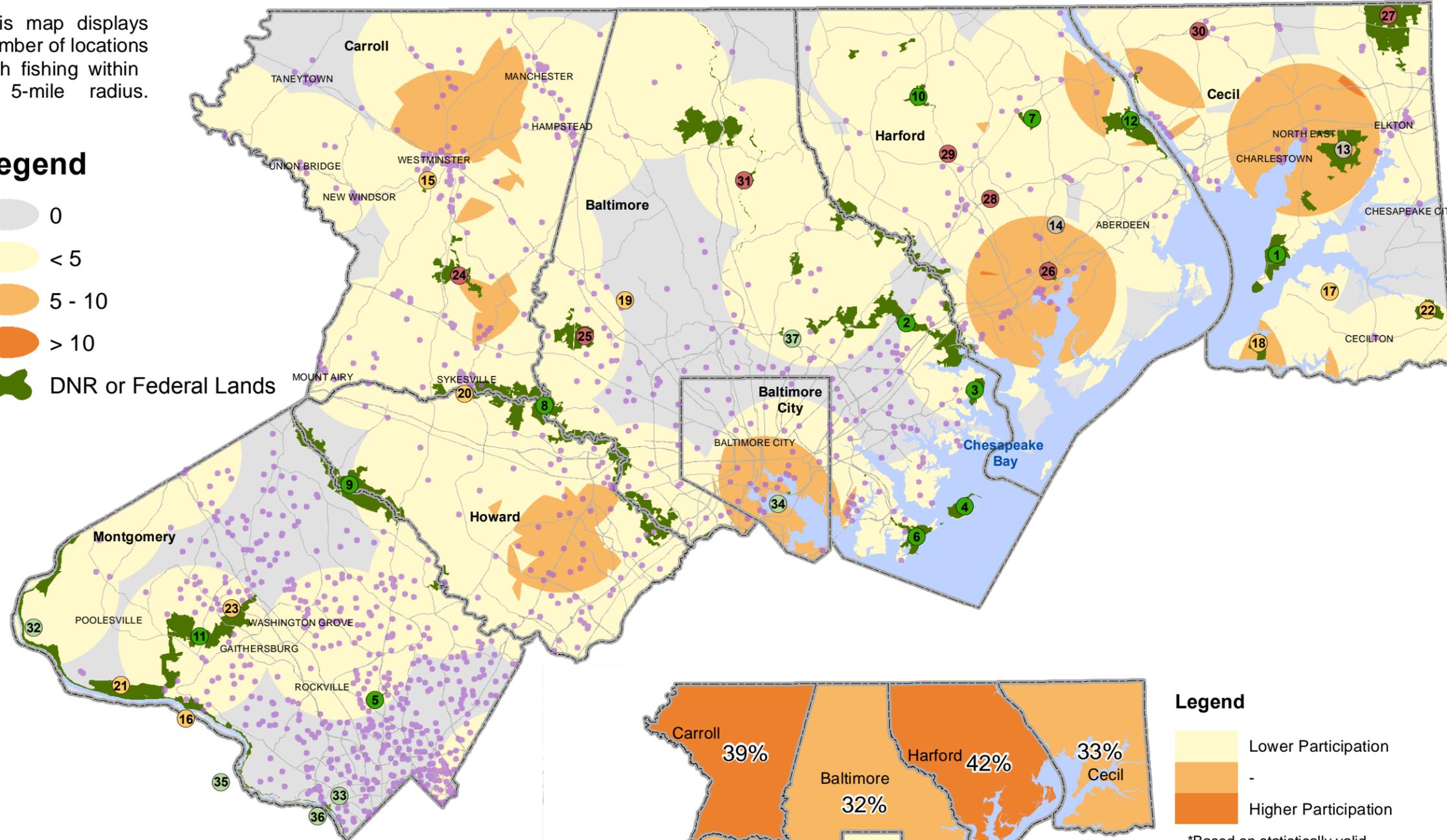
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Map 1E: 5-Mile Proximity to Fishing - Central Region

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

Legend

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



Legend

- Lower Participation
- Higher Participation

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

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

State Parks

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

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

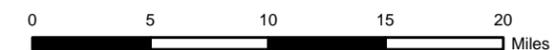
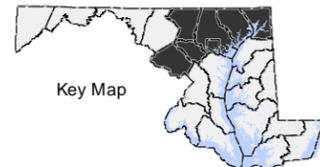
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

County/ Baltimore City Properties

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

Acronym Key

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



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

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

State Parks

- 1 **ASSATEAGUE SP**
- 2 **BILL BURTON SP**
- 3 HARRIET TUBMAN SP
- 4 **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

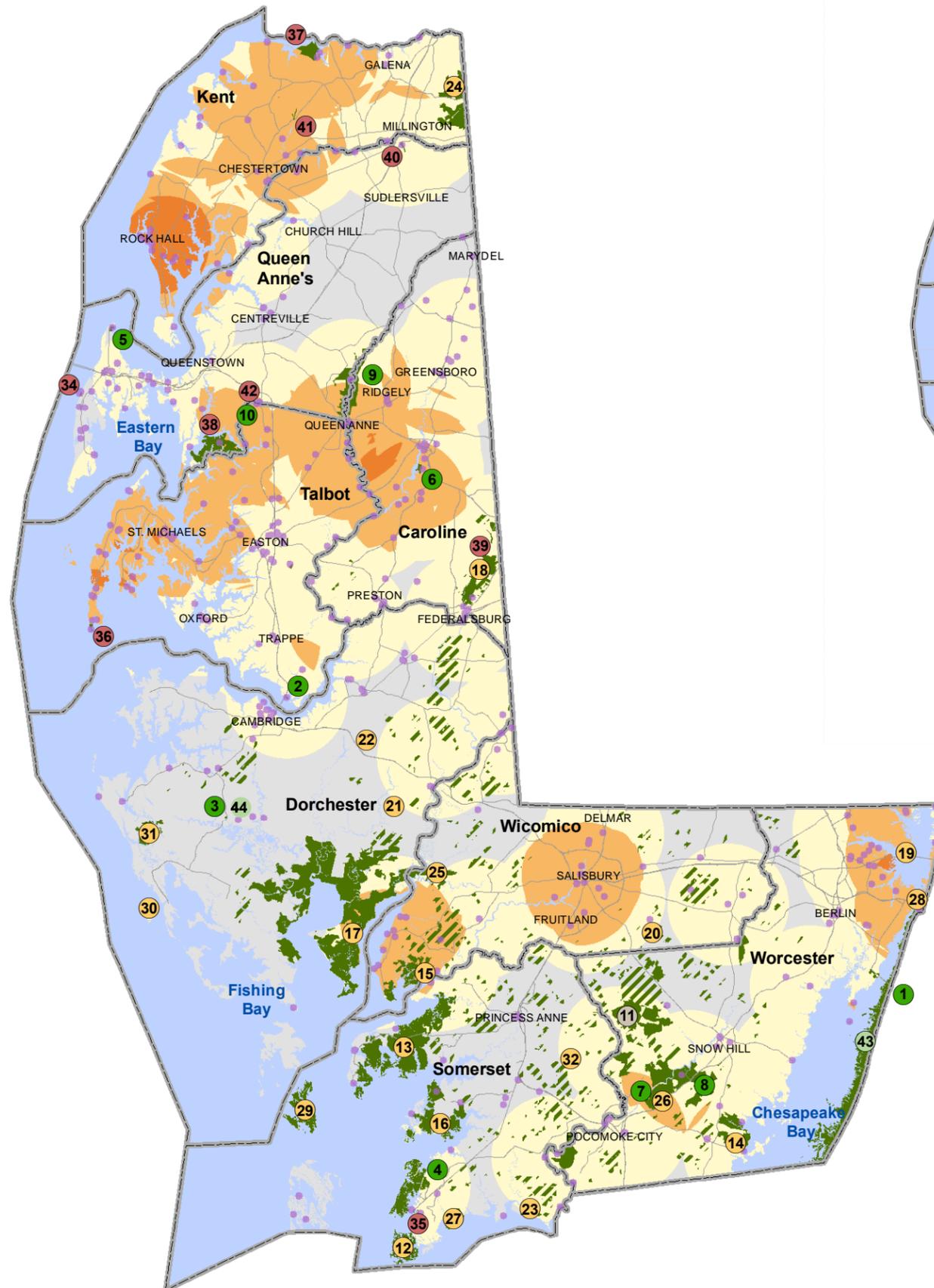
- 43 **ASSATEAGUE ISLAND NATIONAL SEASHORE**
- 44 **BLACKWATER NATIONAL WILDLIFE REFUGE**

County Properties

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

Legend

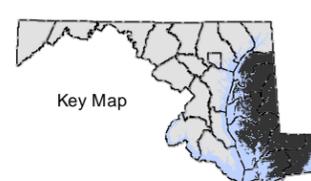
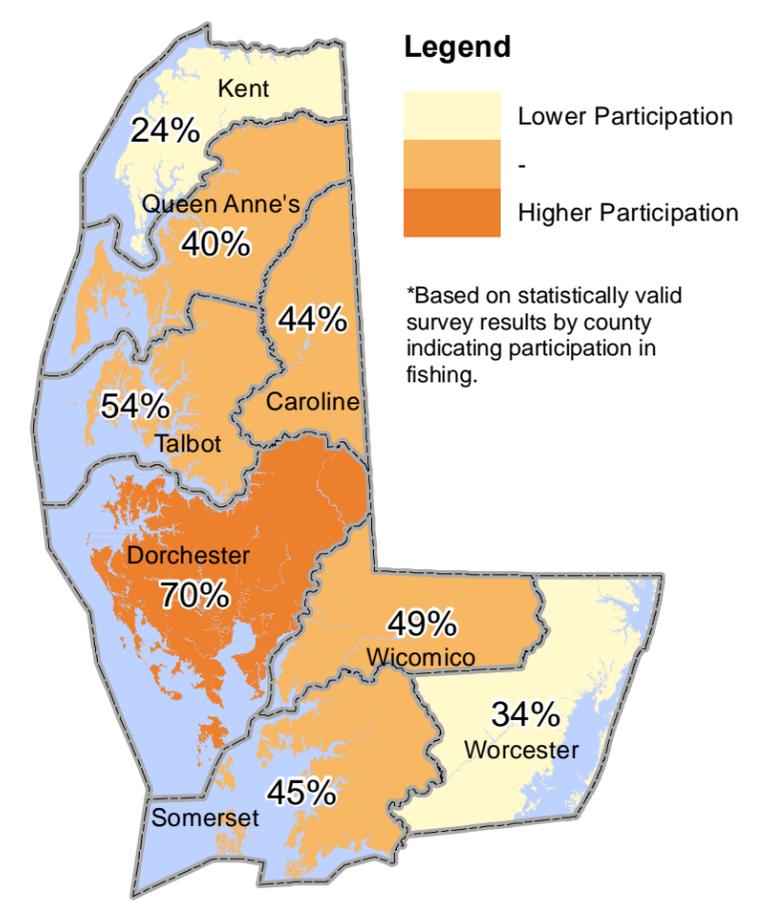
- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



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 INGOES SF

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

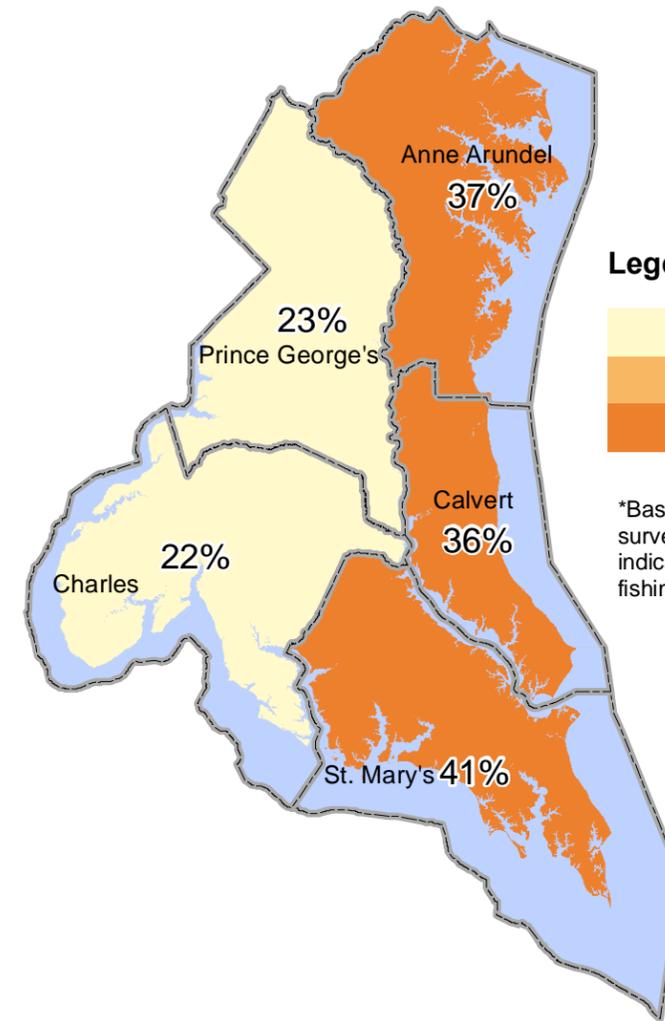
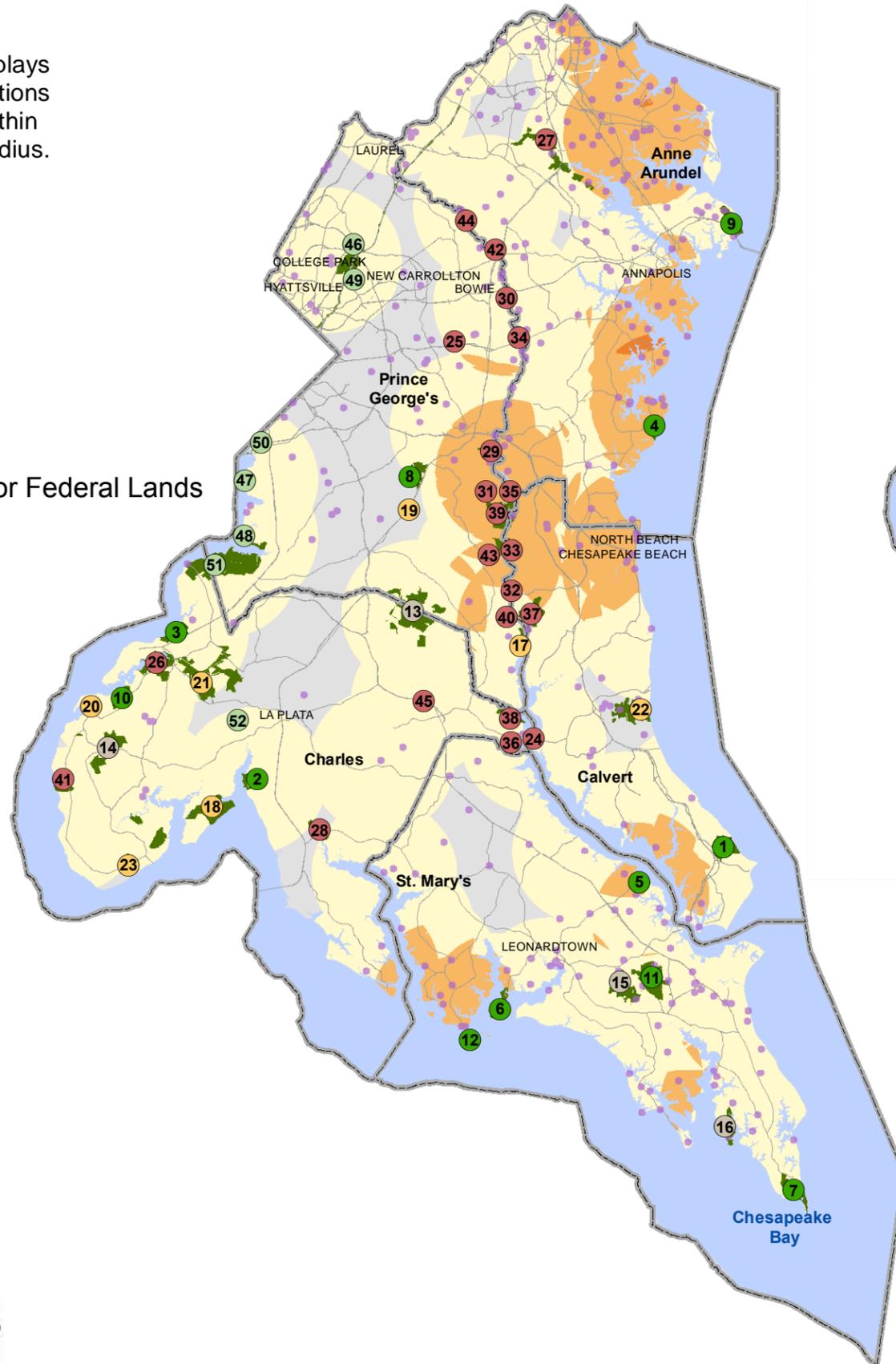
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

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

Legend

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



Legend

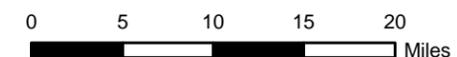
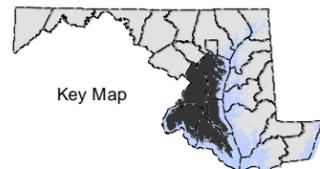
- Lower Participation
- Higher Participation

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

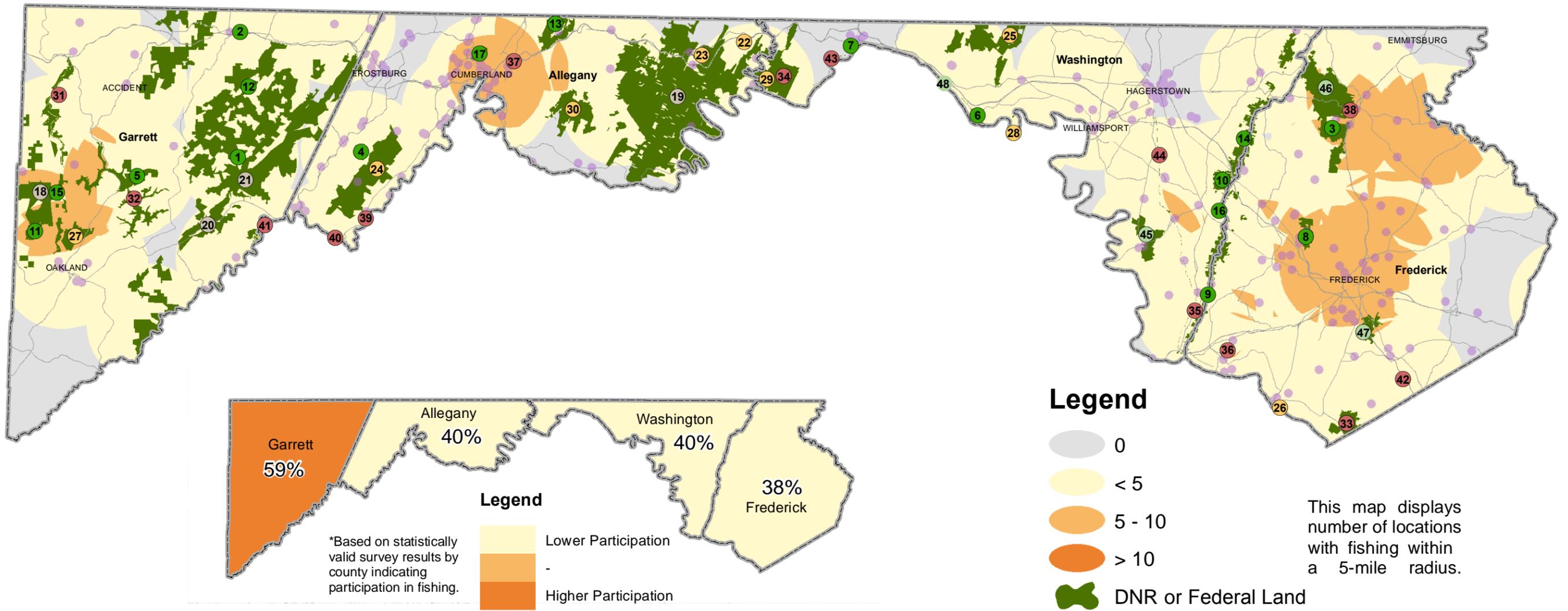
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

Acronym Key

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



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



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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

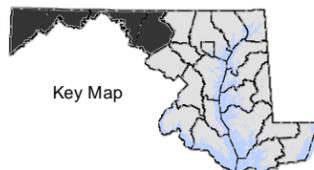
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

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

Acronym Key

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



Analysis F: 5-Mile Proximity to Trails

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

Participation in Trail-Based Recreation Activities

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

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

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

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

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

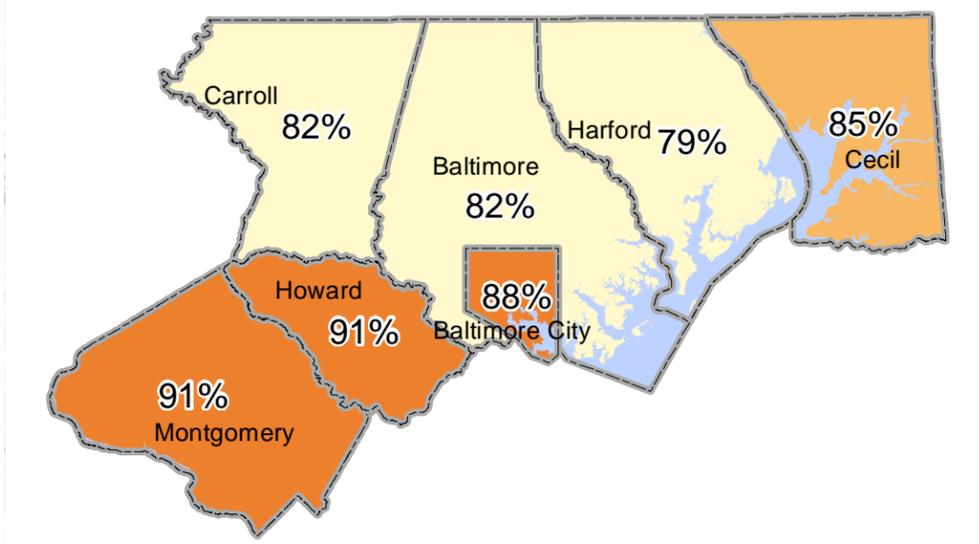
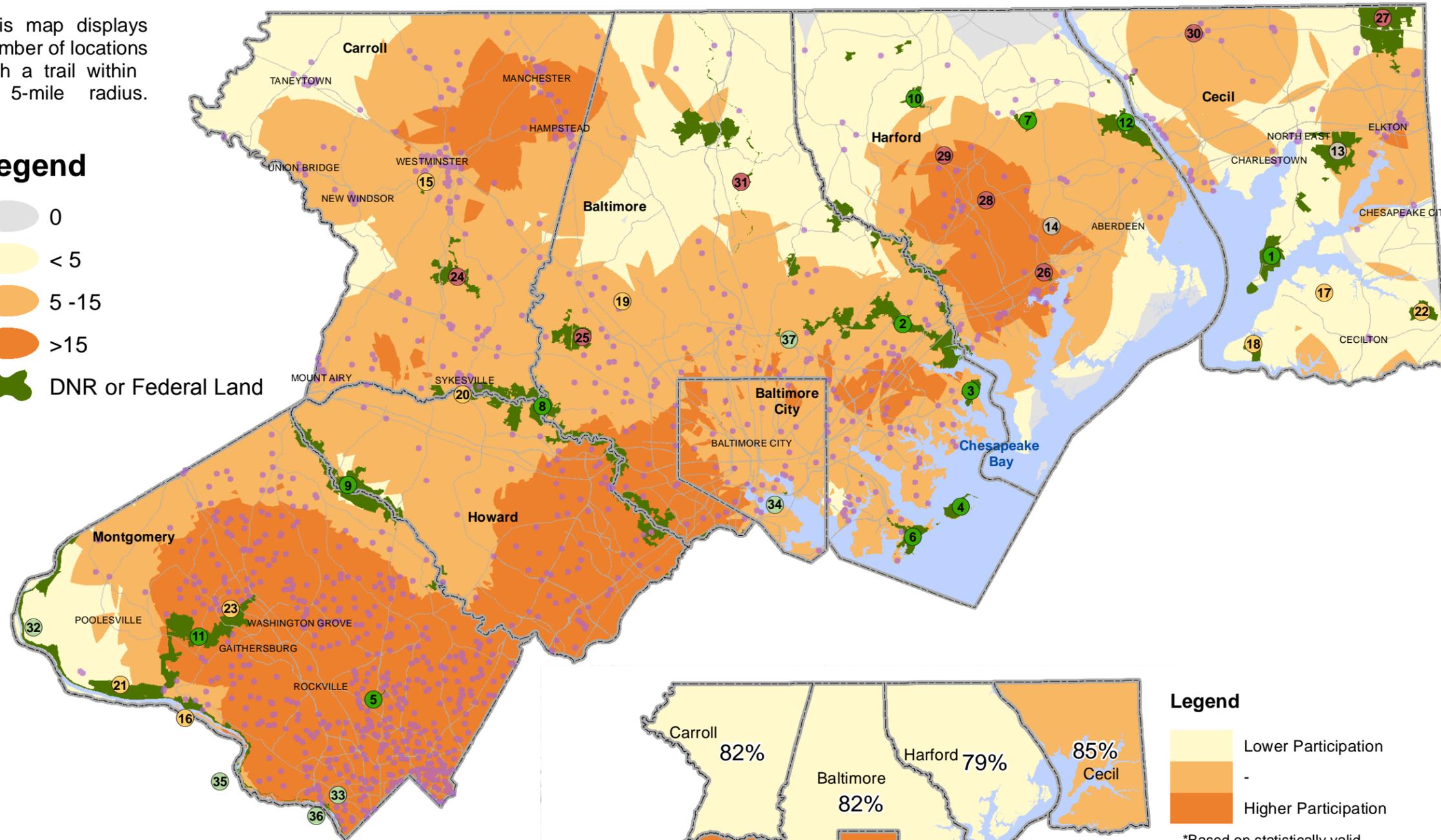


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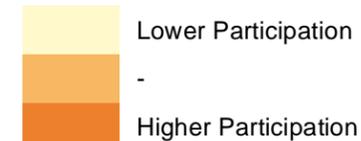
Map 1F: 5-Mile Proximity to Trails - Central Region

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

Legend



Legend



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

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

State Parks

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

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

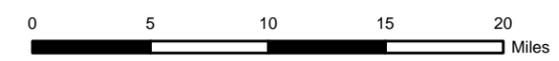
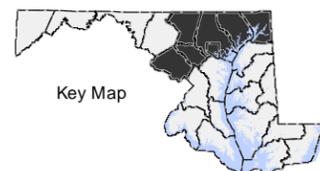
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

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

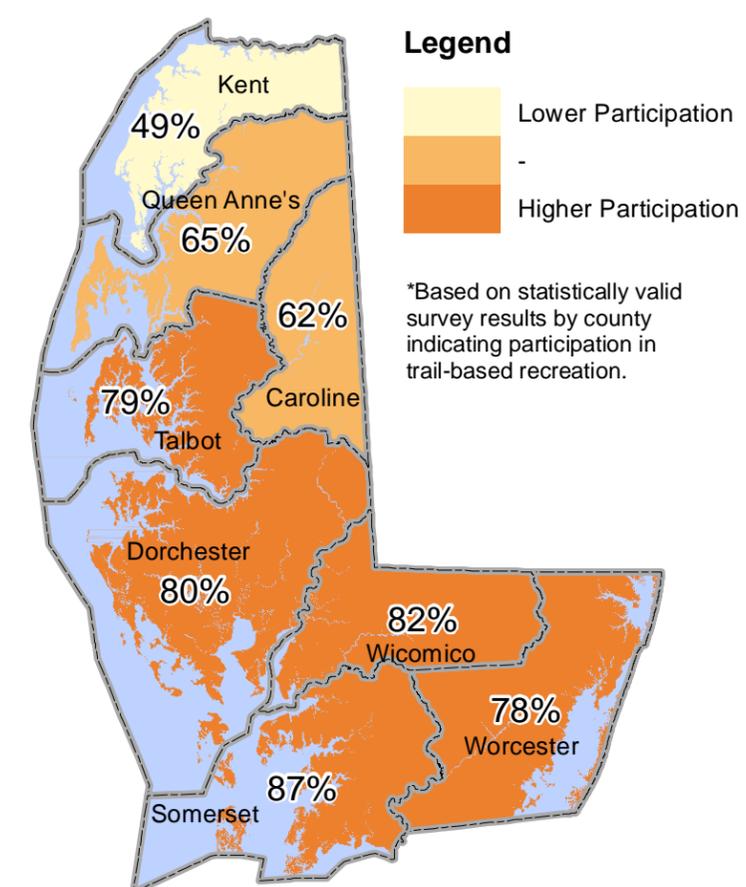
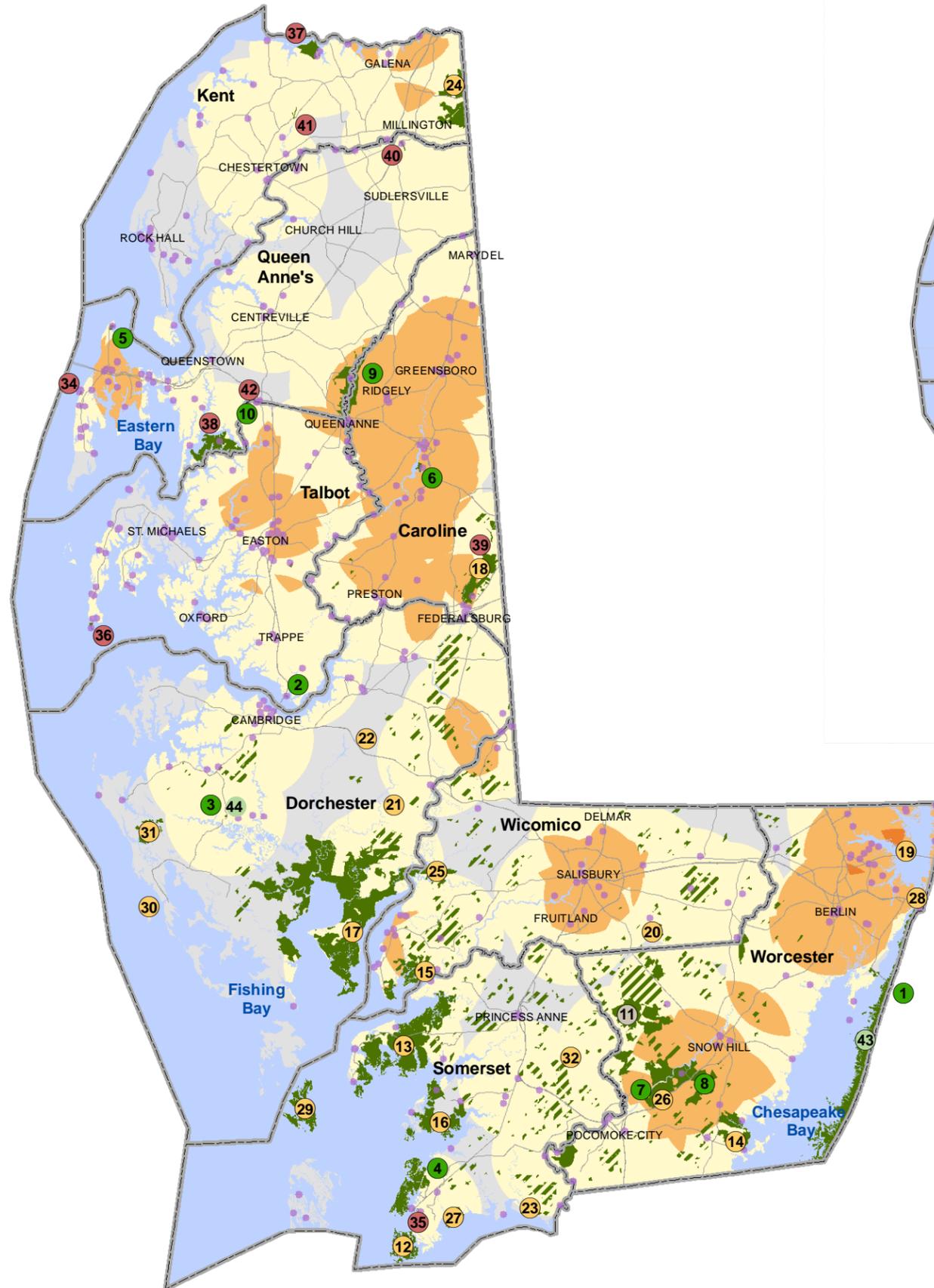
- 43 **ASSATEAGUE ISLAND NATIONAL SEASHORE**
- 44 **BLACKWATER NATIONAL WILDLIFE REFUGE**

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

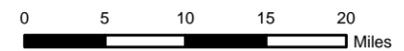
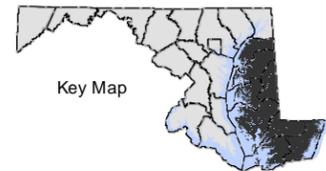
- Lower Participation
-
- Higher Participation

*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
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- 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

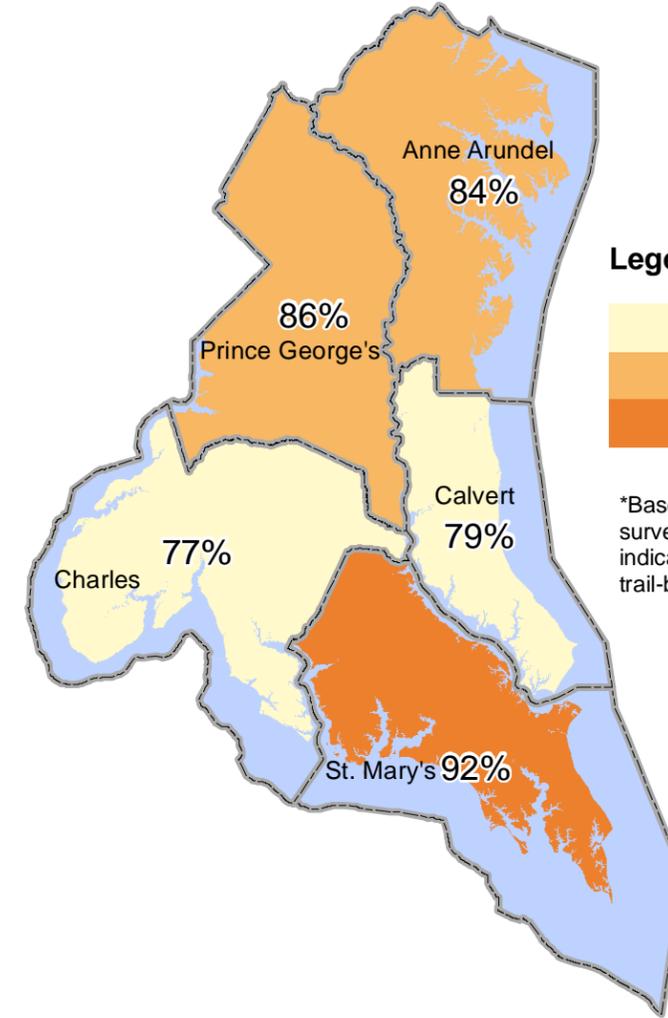
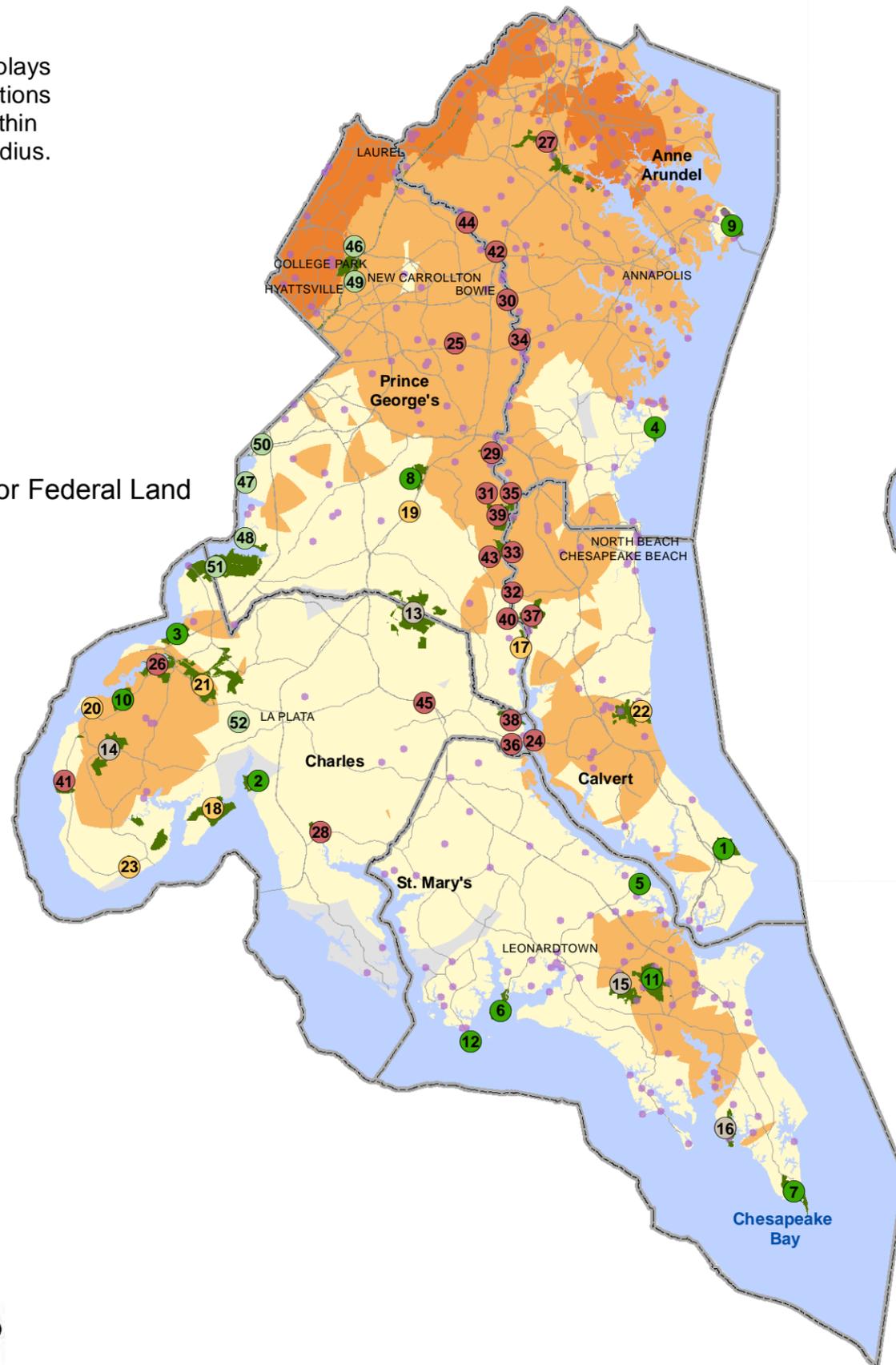
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

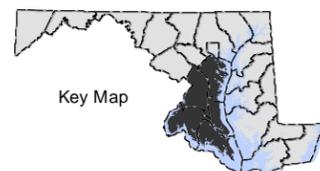
- Lower Participation
- Higher Participation

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

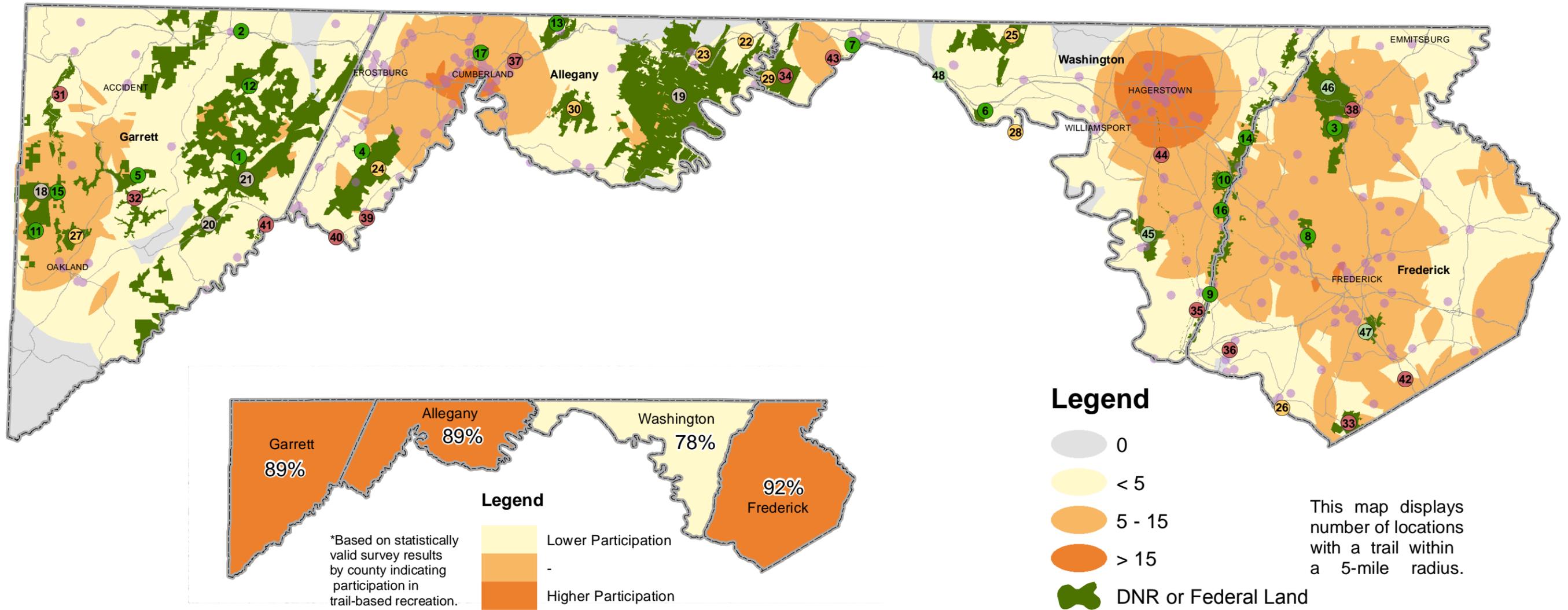
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Acronym Key

- SP State Park
- SF State Forest
- WMA Wildlife Management Area
- NEA Natural Environment Area
- 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

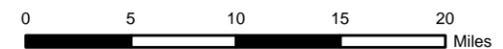
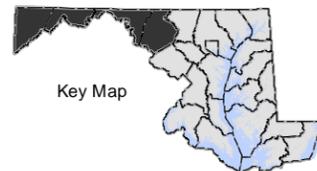
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

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



Key Opportunities and Gaps – Level of Service Analysis

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

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

D. TRENDS IMPACTING OUTDOOR RECREATION IN MARYLAND

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

Physical Activity Council’s 2018 Participation Report

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

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

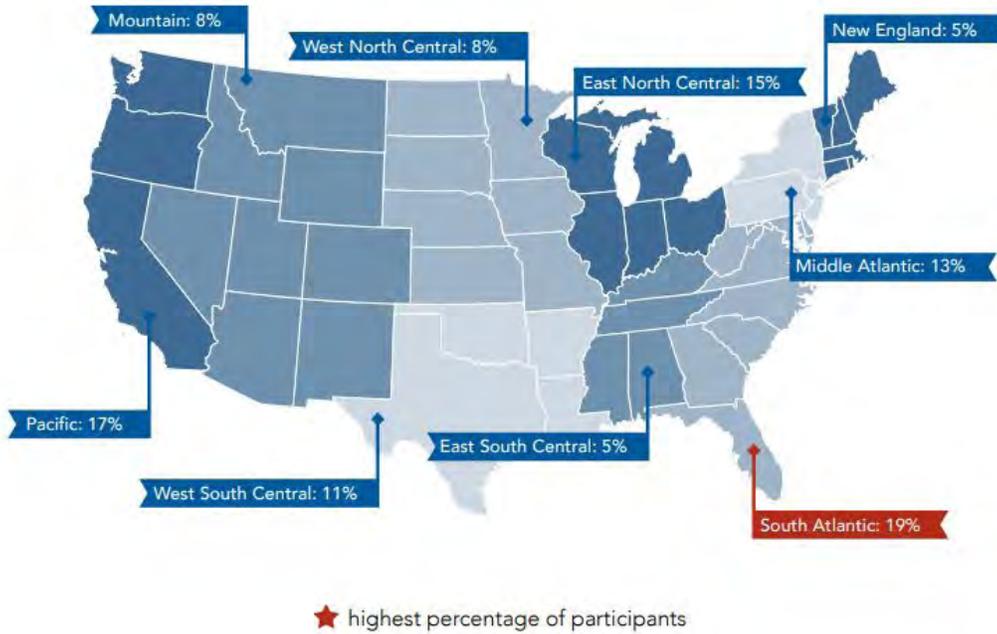
Physical Activity Council
2018 Participation Report

III. RESEARCH AND TRENDS

Figure 26: Activity Participation by Age

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

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



According to the 2018 “Participation Report”⁵⁶:

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

Outdoor Industry Association 2017 Outdoor Participation Report

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

TOP FIVE ACTIVITY PREFERENCES

- 1 Walking 
- 2 Hiking/Backpacking 
- 3 Running/Jogging 
- 4 Swimming Outdoors 
- 5 Visiting Playgrounds/ Nature Play Spaces 

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

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

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

⁵⁶physicalactivitycouncil.com/pdfs/current.pdf

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

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

III. RESEARCH AND TRENDS

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

E. KEY RESEARCH FINDINGS

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

- I. Opportunities should be leveraged to continue to foster productive, collaborative working relationships between outdoor recreation service providers. There are at least 26 key federal, state, and local public agency

providers of outdoor opportunities in Maryland. Each have their own mission but share common goals.

- II. The economic, cultural, health, and environmental benefits of outdoor recreation and conservation of natural lands should be more widely recognized by Marylanders. One key method to increase the public's understanding of these benefits is to promote more use of outdoor recreation facilities. This is also important for increasing participation in healthy, beneficial outdoor activities across the state and strengthening the public benefits yielded through participation.

- III. Existing outdoor recreation opportunities in Maryland are having a positive impact on the lives of most people and households in the state. Some areas of the state have better access to recreation amenities versus others. Increasing close-to-home opportunities to get outdoors and continuing to improve equity in access to parks and nature remains important.



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

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

The Significance of Trails

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

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

⁵⁹atatrail.org/

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

Trail benefits (Health, Environmental & Economic)

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



III. RESEARCH AND TRENDS

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

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

Regional Trail Priorities

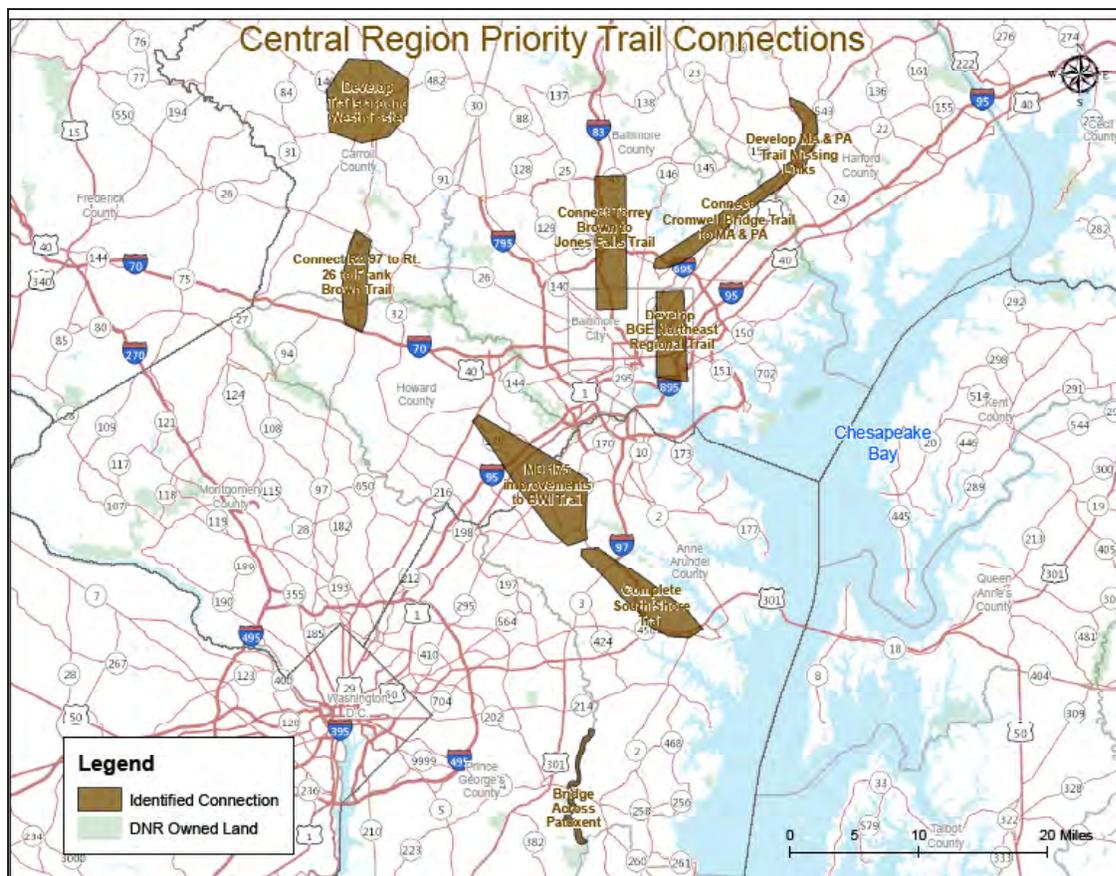
In the five years since the previous 2014 Land Preservation and Recreation Plan, a number of accomplishments related to creating a statewide trail network have been completed. Although certainly not an exhaustive list, the following are some of those accomplishments:

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

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

Central Region Priority Trail Connections

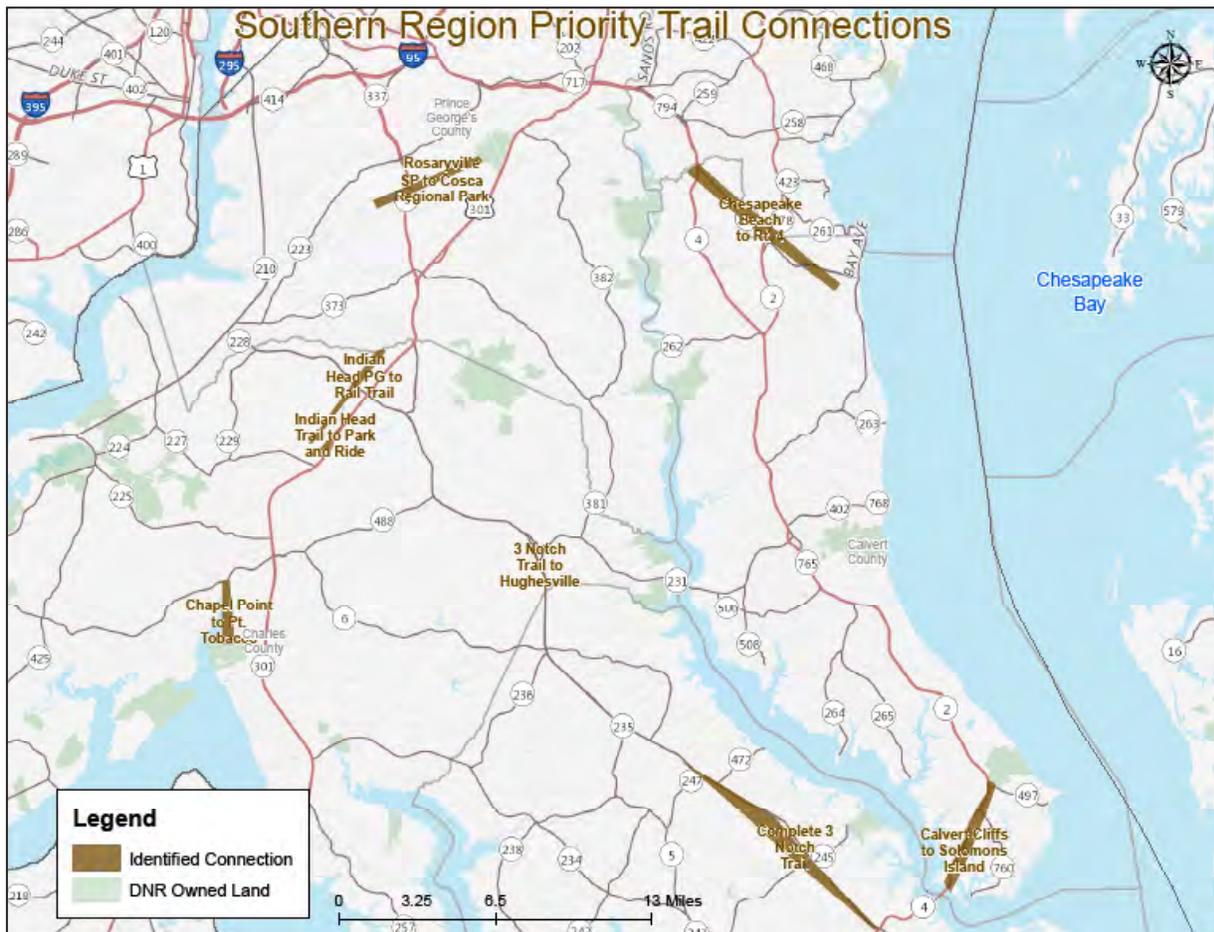
1. Connect the Torrey C. Brown Trail to Baltimore City
2. Connect Anne Arundel and Prince George’s counties with a bridge across the Patuxent River
3. Connect Patapsco State Park Trail system to Ellicott City and Baltimore City
4. Connect Route 97 to Route 26, and then to the Governor Frank Brown Trail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



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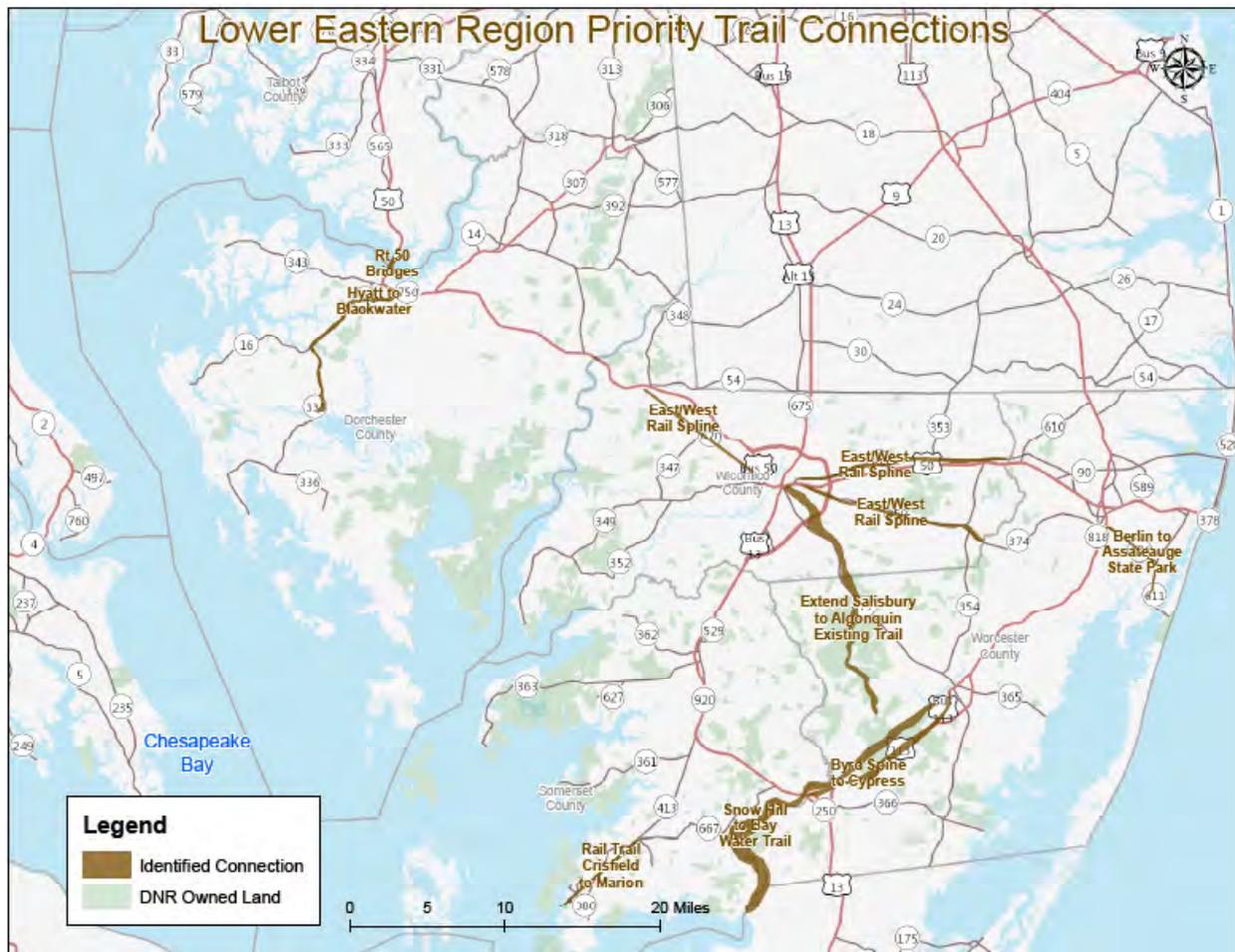
Southern Region Priority Trail Connections

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



Lower Eastern Shore Priority Trail Connections

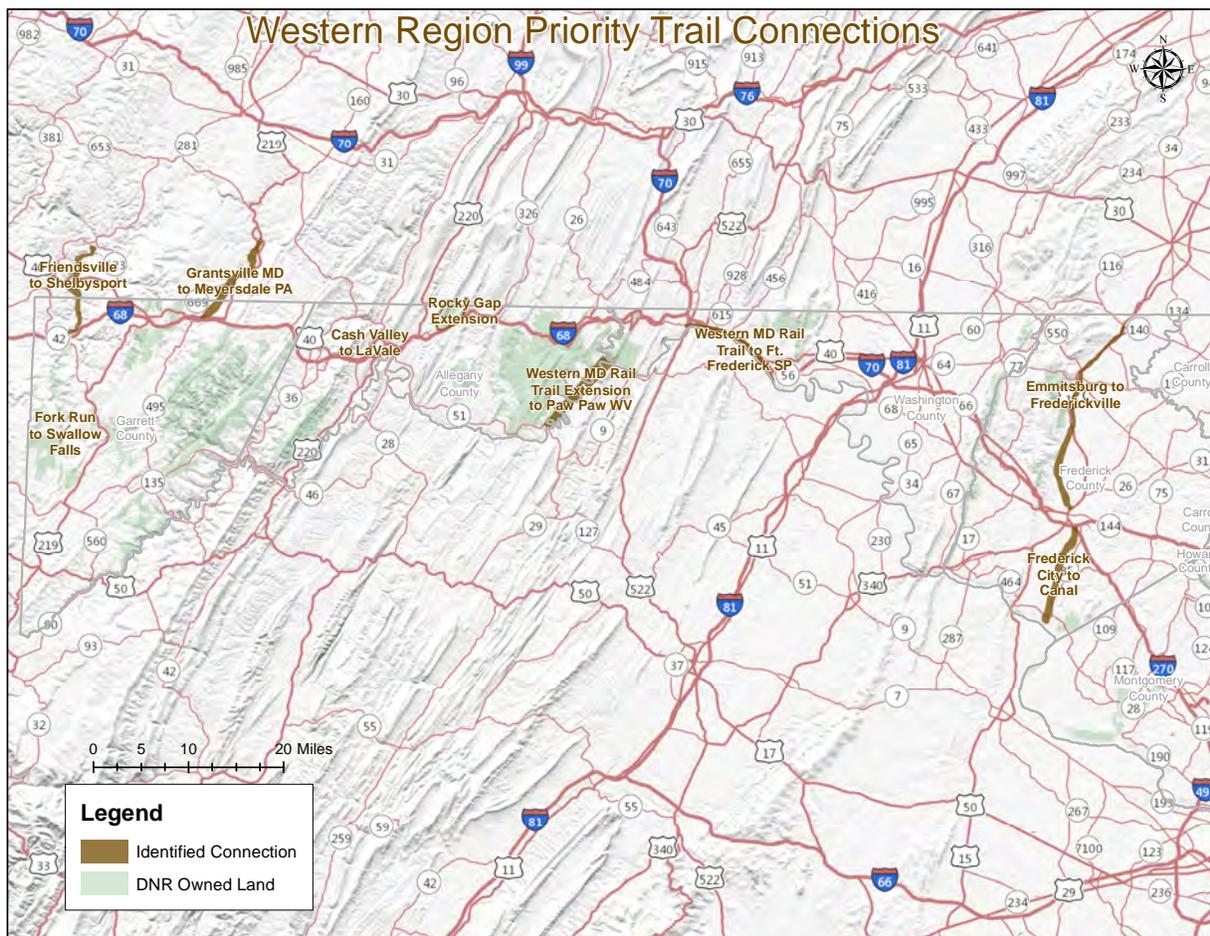
1. Connect existing trails in Salisbury to existing Algonquin Trail in Chesapeake Forest
2. Connect Wicomico and Worcester counties using the East/West rail spine
3. Connect Byrd Park to Cypress Park
4. Develop the Rail Trail from Crisfield to Marion
5. Connect the Cambridge Hyatt to Harriet Tubman State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



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Western Region Priority Trail Connections

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



Federal Historic Trails

Star-Spangled Banner National Historic Trail

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

Captain John Smith Chesapeake National Historic Trail

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

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

Appalachian National Scenic Trail

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

Potomac Heritage National Scenic Network

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



Canoeing | Image Credit: Dept. of Natural Resources

⁶⁰ starspangledtrail.net/

⁶¹ smithtrail.net/

III. RESEARCH AND TRENDS

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

Washington-Rochambeau Revolutionary Route National Historic Trail



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

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

Water Based Recreation Trends

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

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

Change in National Participation (participation figures x 1,000)					
	2013	2014	2015	2016	
Canoeing	10,153	10,044	10,236	10,046	-1.1%
Kayak Fishing	1,798	2,074	2,265	2,371	31.8%
Kayaking (Recreational)	8,716	8,855	9,499	10,017	14.9%
Kayaking (Sea/Touring)	2,694	2,912	3,079	3,124	16.0%
Kayaking (White Water)	2,146	2,351	2,518	2,552	18.9%
Sailing	3,915	3,924	4,099	4,095	4.6%
Stand Up Paddle Boarding	1,993	2,751	3,020	3,220	61.6%

⁶² nps.gov/waro/index.htm

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

Water Access Sites are Important Statewide

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

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

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

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

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

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

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

The app can be accessed here.

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

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Water Trails

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

Water trails provide opportunities to:

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

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

Maryland Department of Natural Resources:

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

Designation as an Official Maryland Water Trail Requires the following:

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



Setting Sun at Mallows Bay by James E Murphy IV

Statewide Water Access and Water Trails

