

II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

A. INVENTORY OF PUBLIC OUTDOOR RECREATION SITES

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

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

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

Key Outdoor Recreation Providers in Maryland

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

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

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

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

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STATE PARKS provide outdoor recreation and conserve open spaces.



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



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



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



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

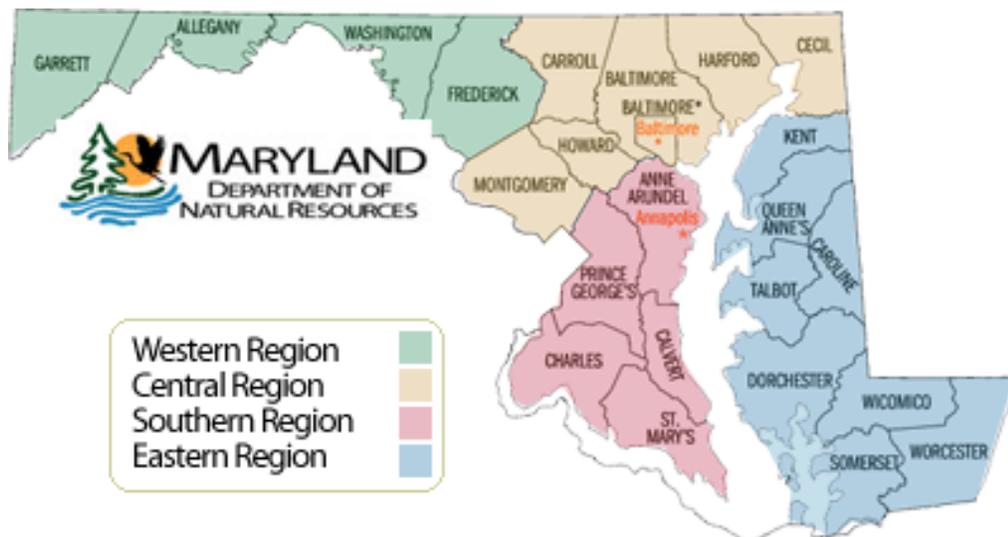


A STATE WILDLAND is a special protective layer established by legislation that "overlays" another Department of Natural Resources land unit. Wildlands contain wilderness characteristics and otherwise outstanding and unique natural features worthy of preservation in a natural state.

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

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

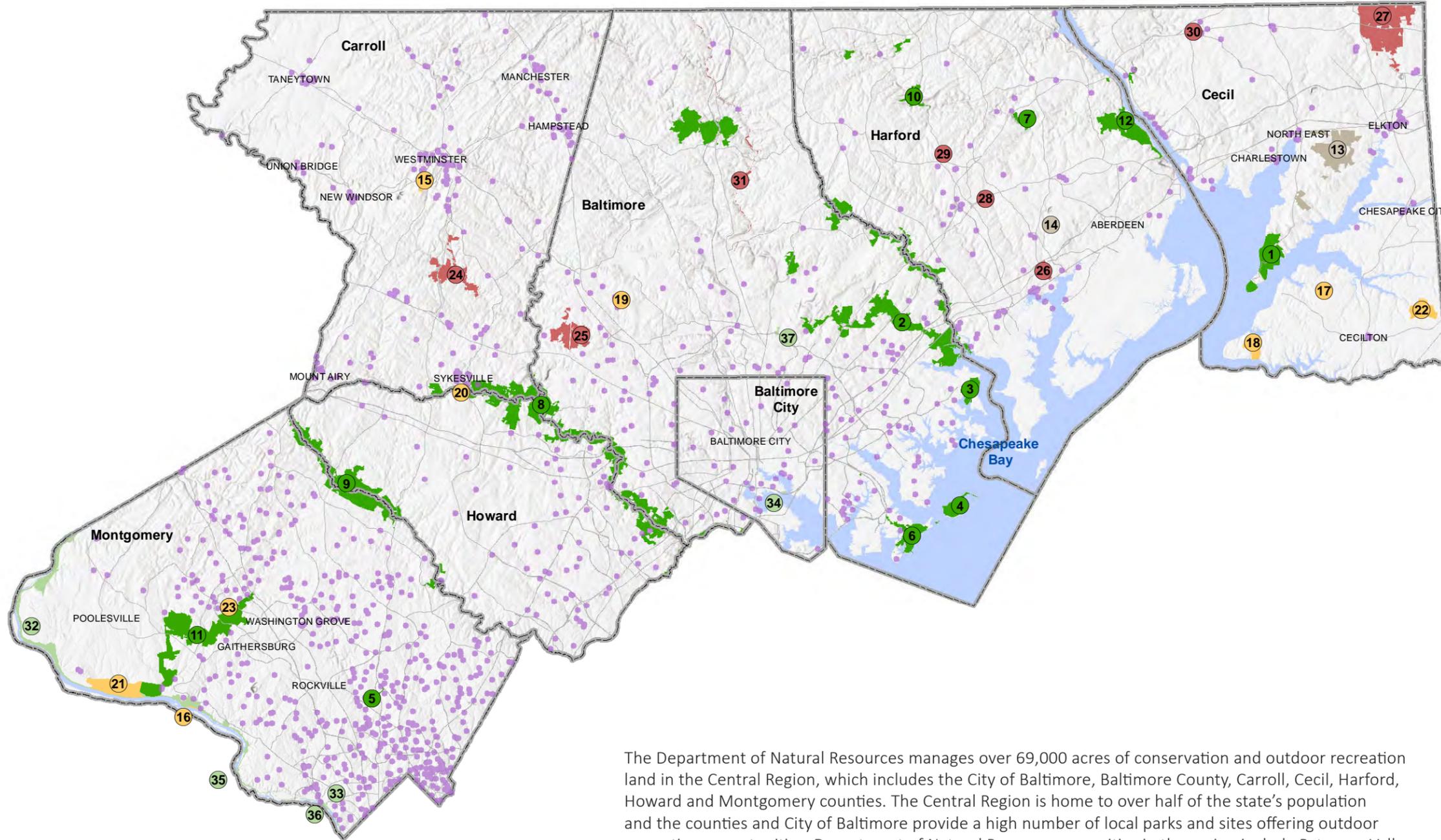
Public lands providing outdoor recreation opportunities are spread throughout Maryland. For the purposes of the Land Preservation and Recreation Plan, these sites have been classified by the Department of Natural Resources four geographic service regions, as described on the following maps.



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

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

Map 1: Central Region Inventory



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

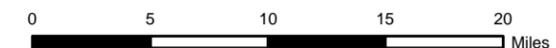
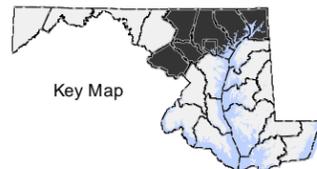
County/ Baltimore City Properties

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

The Department of Natural Resources manages over 69,000 acres of conservation and outdoor recreation land in the Central Region, which includes the City of Baltimore, Baltimore County, Carroll, Cecil, Harford, Howard and Montgomery counties. The Central Region is home to over half of the state's population and the counties and City of Baltimore provide a high number of local parks and sites offering outdoor recreation opportunities. Department of Natural Resources amenities in the region include Patapsco Valley and Gunpowder Falls State Parks, known for their world-class mountain biking and hiking opportunities, and the Fair Hill Natural Resource Management Area, which includes nearly 6,000 acres of scenic natural and agricultural lands and nationally known equestrian training and competition facilities and programs. National Park Service units in the region include the Chesapeake and Ohio Canal National Historic Park and Fort McHenry National Monument and Historic Shrine, the site where Francis Scott Key wrote "The Star-Spangled Banner" in 1814 during the Battle of Baltimore.



Map 2: Eastern Region Inventory

State Parks

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

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

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

Other DNR Assets

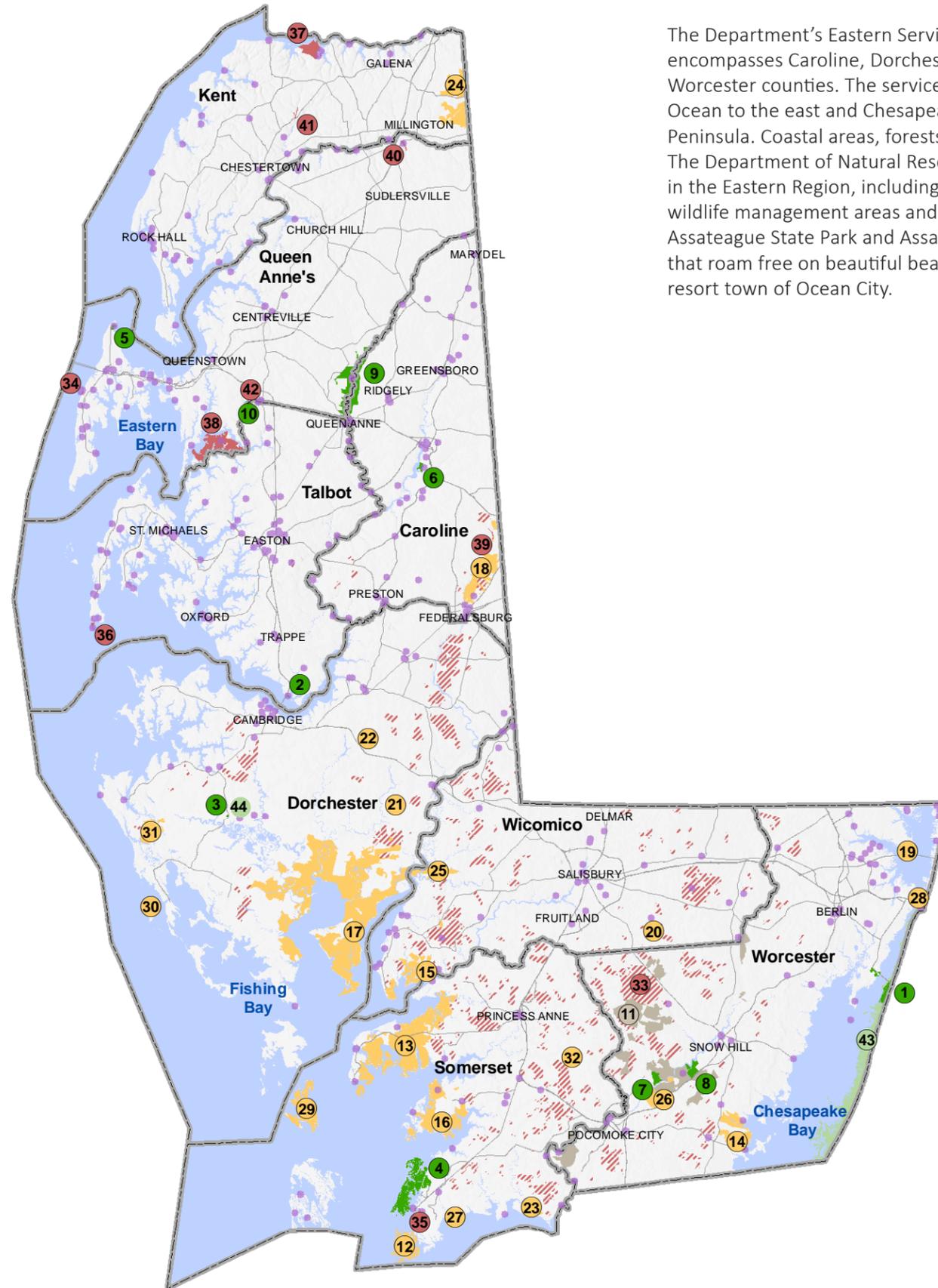
- 33 CHESAPEAKE FOREST LANDS*
- 34 MATAPEAKE
- 35 SOMERS COVE MARINA
- 36 BLACK WALNUT POINT NRMA
- 37 SASSAFRASS NRMA
- 38 WYE ISLAND NRMA
- 39 SMITHVILLE LAKE PFA
- 40 UNICORN LAKE PFA
- 41 URIVILLE LAKE PFA
- 42 WYE MILLS PFA

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

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

County Properties

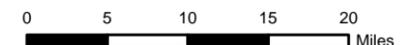
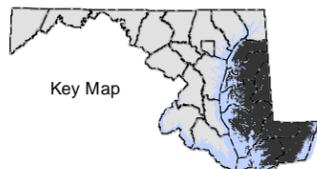


The Department's Eastern Service Region is the least populated of all service regions and encompasses Caroline, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties. The service region is bordered by the State of Delaware and Atlantic Ocean to the east and Chesapeake Bay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

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

Acronym Key

- SP State Park
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- NRMA Natural Resource Management Area
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Map 3: Southern Region Inventory

State Parks

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

State Forests

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

Wildlife Management Areas

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

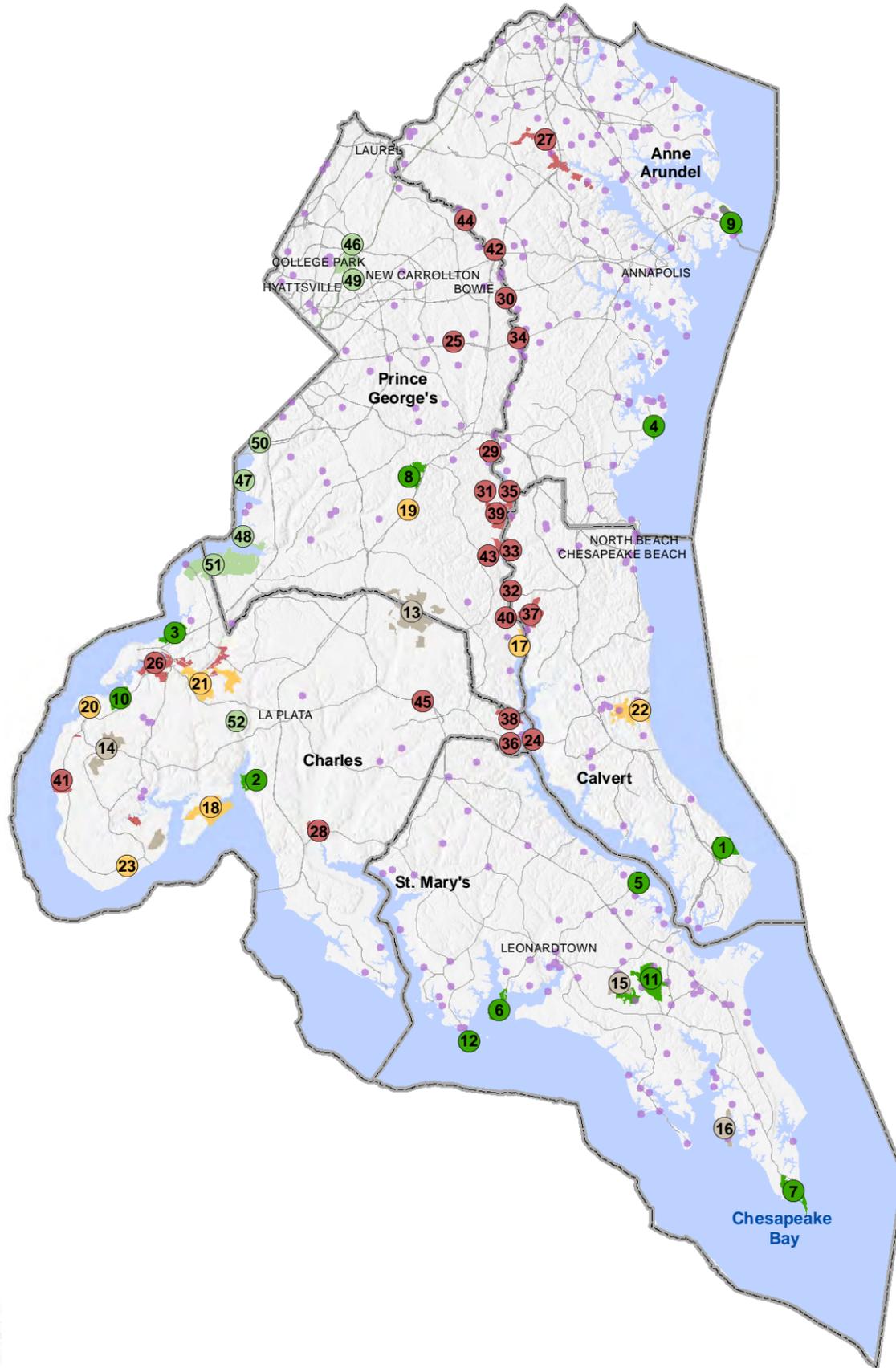
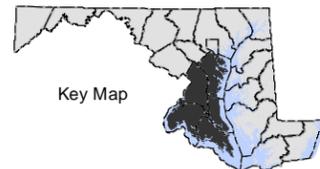
Other DNR Assets

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

Federal Lands

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

County Properties

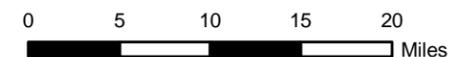


The Southern Service Region is the second most populous of the Department's service regions and includes Anne Arundel, Calvert, Charles, Prince George's and St. Mary's counties. All of these counties include waterfront areas on the Chesapeake Bay and/or Potomac River. Roughly 30% of the statewide population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

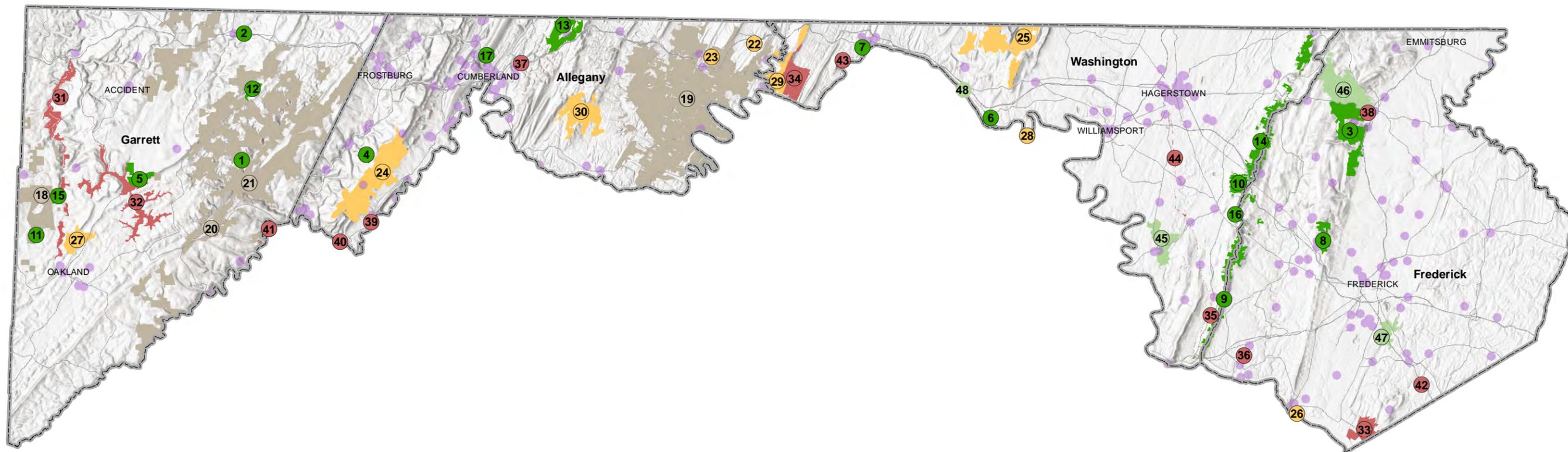
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

Acronym Key

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Map 4: Western Region Inventory



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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

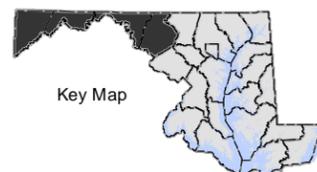
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

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

Acronym Key

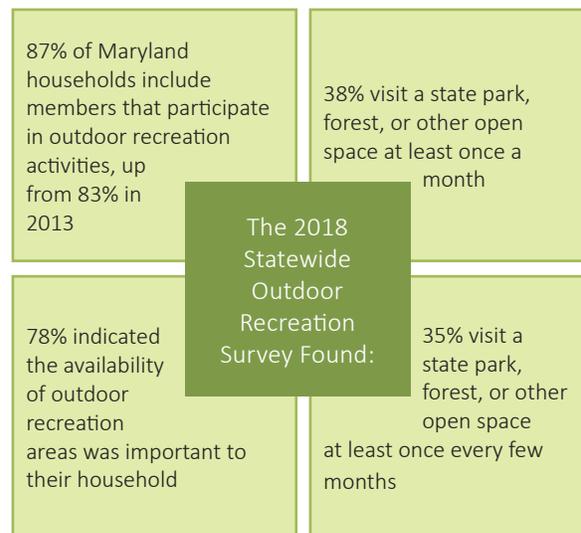
- SP State Park
- SF State Forest
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B. KNOWN USAGE AND VISITATION

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

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



C. KEY PROGRAMS AND POLICIES GUIDING LAND CONSERVATION

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

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



National Parks

6.7 million visitors in Maryland in 2017



Maryland State Parks

14 million visitors in 2017



Local Jurisdictions

Millions of annual visitors cumulatively

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

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

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

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



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

Maryland's Land Conservation Programs

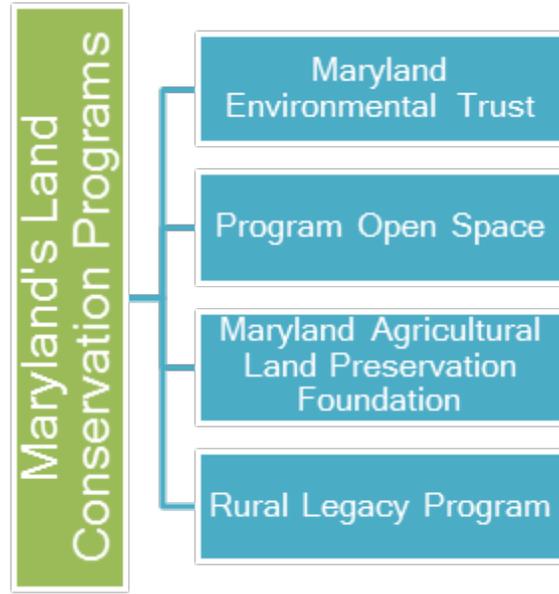
Major state-funded land conservation programs operate throughout Maryland to protect natural resources, farmland, and recreational open space. Each of these programs has a unique conservation objective and strategy. These conservation tools are complementary and, when stitched together much like a "conservation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

Statewide strategic land conservation rests on several fundamental guiding principles:

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

Acres Conserved by State Land Conservation Programs

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

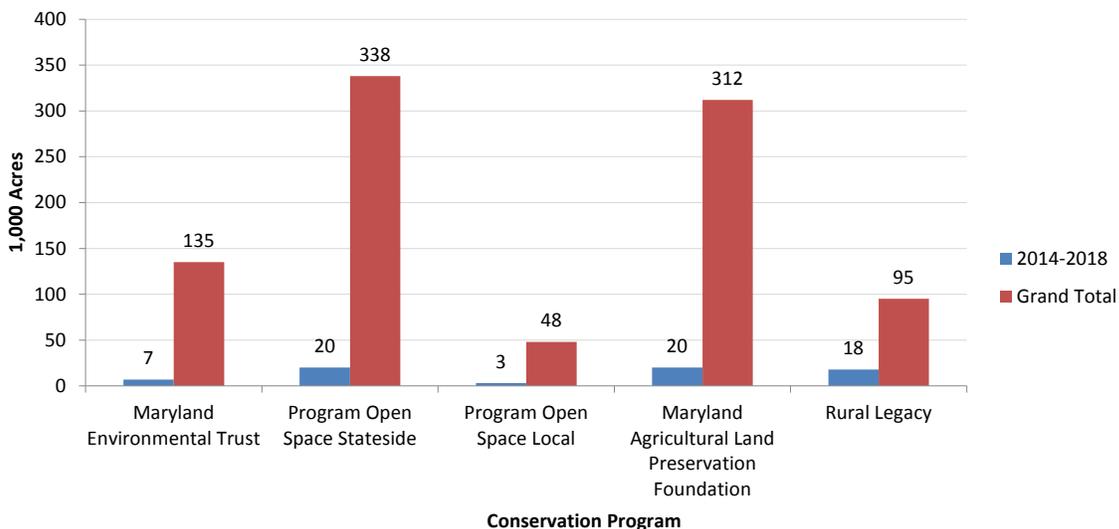


For the last 50+ years, the Maryland Environmental Trust focused its efforts on protecting large parcels of scenic open space in rural areas. While this remains part of its core mission, in 2012 Maryland Environmental Trust adopted a new policy for accepting conservation easements in urban areas, citing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

Maryland Environmental Trust

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

Figure 1: Open Space Acres Conserved by State Program



II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

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

Program Open Space

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

Program Open Space Stateside

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

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

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

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

MARYLAND DEPARTMENT OF NATURAL RESOURCES		POS Stateside Scorecard	
Property: Example	County: _____	Map / Parcel: _____	Final Score: 89
		In Targeted Ecological Area? Yes	
Land:	Ecological Value (Total available points = 85, capped at 50)		
A.	Wildlife Habitat Connectivity (0 - 10 points)		4.3
B.	Rare Species (0 - 10 points)		0
C.	Support of Aquatic Life (0 - 10 points)		3
D.	Forests Important for Water Quality Protection (0 - 10 points)		5.8
E.	In a Targeted Ecological Area (TEA) (25 points)		25
F.	Restoration Opportunity (0 - 10 points)		0
G.	Climate Change Adaptation: Future Wetland Habitat (0 - 10 points)		0
		Pre-cap score:	38.9
		Capped at:	50.0
		Final subtotal score:	38.9
People:	Enhancing Public Access and Recreational Opportunities (Total available points = 85, capped at 50)		
A.	Creation of New Opportunity (0 - 40 points) - If yes, project only eligible for additional points in D, E, and F		
B.	Expansion/Connection of Existing Recreational Opportunity (0 - 25 points)		20
C.	Land Management: Inholding or Adjacency of Existing Protected Area (0 - 40 points)		35
D.	Buffer to Existing Recreational Lands/Large Landscape Protection (0 - 25 points)		
E.	Coastal Community Resiliency to Climate Change Impacts (0 - 10 points)		0
F.	Historic or Cultural Importance (0 - 10 points)		0
		Pre-cap score:	55
		Capped at:	50
		Final subtotal score:	50.0
Final Score: Total of Land + People (Maximum: 100 points)			88.9

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

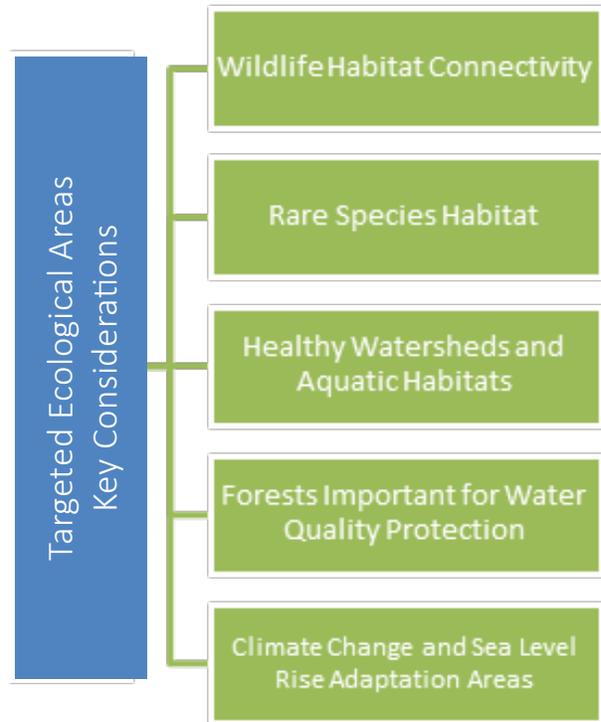
¹² dnr.maryland.gov/land/Pages/ProgramOpenSpace/home.aspx

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

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

I. Wildlife Habitat Connectivity

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



Prothonotary Warbler photo by George Jett

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

II. Rare Species Habitat

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

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

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

III. Support of Aquatic Life Through Healthy Watersheds

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

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

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

IV. Forests are Important for Water Quality Protection

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

V. Climate Change and Sea Level Rise Adaptation Areas

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

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

¹⁶ dnr.maryland.gov/ccs/pages/bi.aspx

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

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

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

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

II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

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

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

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

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

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

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

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

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

Table 1: Wetland Types and Acreage

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

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

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

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

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

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

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

Program Open Space – Local

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

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

Maryland Agricultural Land Preservation Foundation

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

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

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

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

Rural Legacy Program

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

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

Rural Legacy Areas are evaluated for the following:

- The significance and extent of agricultural, forestry, natural, and cultural resources proposed for protection
- The threat to resources from development pressure and landscape changes
- The significance of historical and cultural resources proposed for protection
- The economic value of the resource-based industries or services proposed for protection through land conservation, such as agriculture, forestry, tourism, and recreation

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

County LPPRP Capital Improvement Plans

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

Notes

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

Calvert: Annual totals divided equally between Development and Rehabilitation.

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

Does not include cost of new pickup truck, mower.

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

Kent: Data is from draft plan.

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

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

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

Forest Legacy Program

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

Land and Water Conservation Fund

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

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

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



Credit: Maryland Department of Natural Resources

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

D. RESPONDING TO CONTEMPORARY ISSUES IMPACTING LAND CONSERVATION IN MARYLAND

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

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

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

Project Green Classrooms Mission:

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

Project Green Classrooms Goals:

Goal 1: Co-locate Natural Areas with Active Areas

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

Goal 2: Create Community Connections

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

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

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

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

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

Goal 5: Establish Equitable Access to Parks and Green Space

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

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

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

²⁹ bbc.com/news/technology-32067158

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

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



*2017 National Hunting and Fishing Day
Natural Resources Police*

Providing Timely and Relevant Public Information

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

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

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

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

Improving Equitable Access to Parks and Greenspace

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

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

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

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

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

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

Maryland Park Service: Es Mi Parque

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

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



Es Mi Parque, Sandy Point State Park

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

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

Healthy Parks Healthy People Initiative

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

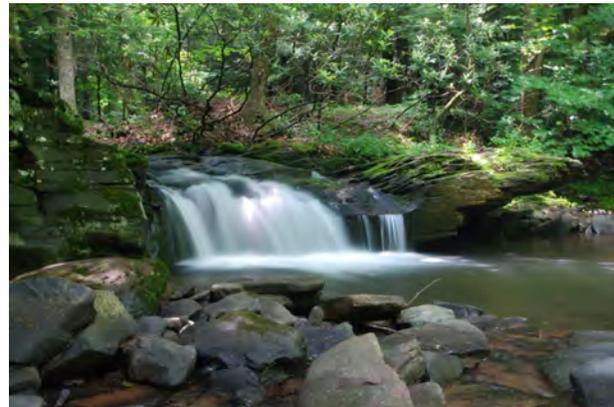
Healthy Parks Healthy People³³ is a program designed to promote physical activity in nature and the outdoors. The program encourages use of Maryland's parks to improve the health and well-being of community members that take part in fitness and wellness programs, either on their own or when referred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

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

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

Maryland Natural Areas Guide

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



South Savage Mountain Natural Area (Dave Kayzak)



Yoga, Healthy Parks Healthy People programs

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

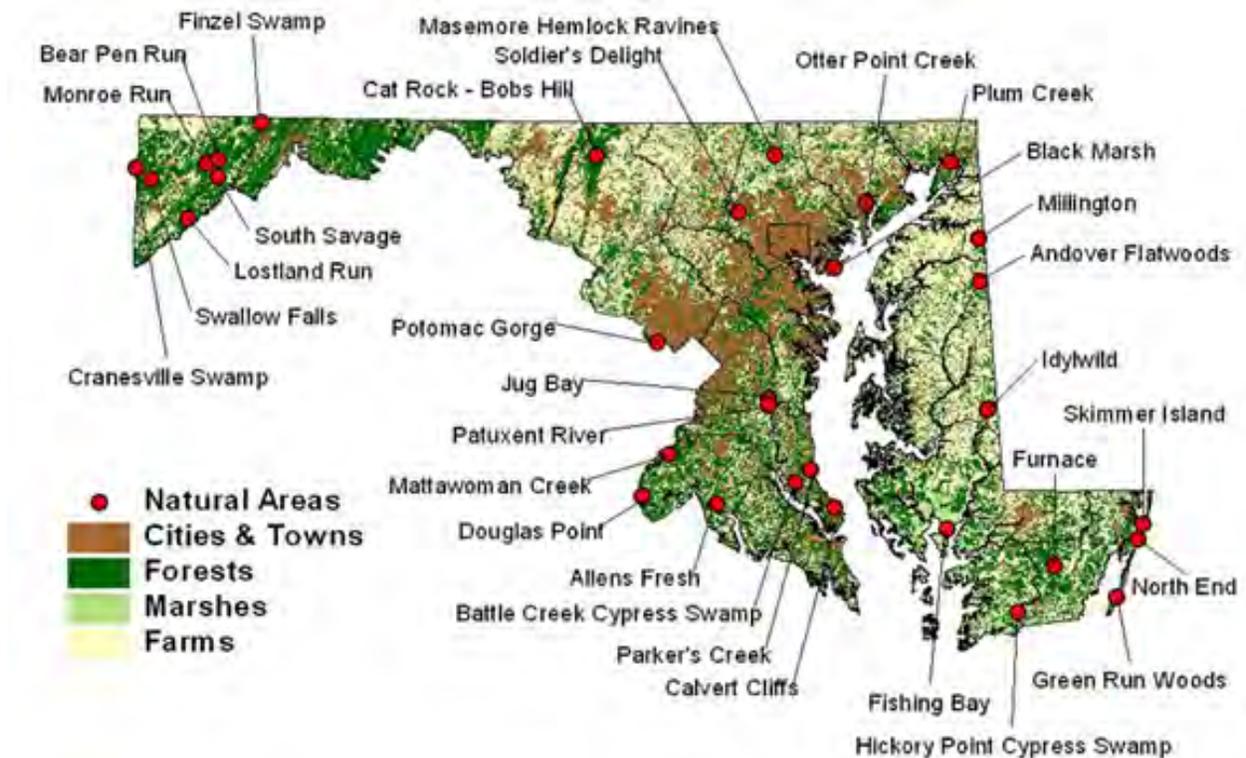
II. MARYLAND'S PUBLIC PARKS AND OPEN SPACES

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

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

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

Figure 3: Maryland Natural Areas Guide



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

Energy Development and Public Land Policy

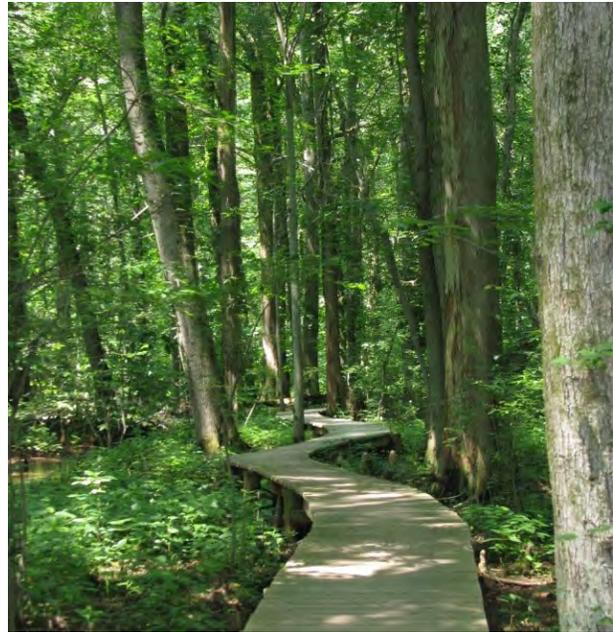
As with public lands across the nation, Maryland's public open spaces can provide opportunities that support energy development projects ranging from the installation of wind turbines and solar arrays to mineral extraction or natural gas production. As of 2017, hydraulic fracturing is not permitted in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

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

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

Finding Value in Ecosystem Services

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



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

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

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

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

Crediting Conservation and Growth Management

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

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

Adapting to Climate Change

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



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

³⁵ dnr.maryland.gov/Pages/maps.aspx

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

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

Adaptive Land Management

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

Coast Smart Construction Program

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

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



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

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

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

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

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

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Green Infrastructure

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

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

Public Safety: Patapsco Valley State Park Case Study

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



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

County-Level Adaptation

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

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

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

Maryland Outdoor Recreation Economic Commission

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

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

Celebrating Maryland’s Landscape and Culture

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

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

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

Scenic Byways Program

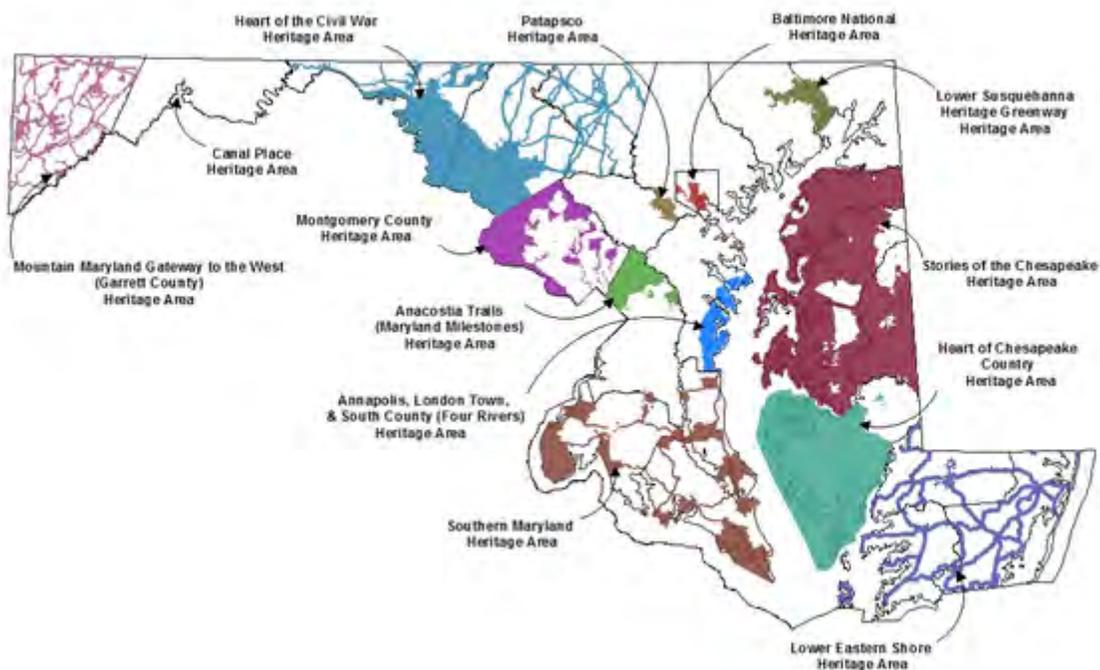
The Maryland Scenic Byways Program⁴² is a cooperative effort between the State Highway Administration and federal, state, and local agencies that works to enhance economic development strategies and promote the conservation and preservation of cultural and natural resources along designated scenic byways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

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

Heritage Areas Program

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

Figure 4: Maryland Certified Heritage Areas



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

⁴³ mht.maryland.gov/heritageareas.shtml

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

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

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

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

Maryland Traditions Program

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

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



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

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

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

Indigenous Cultural Landscapes

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

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

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

Chief Sewell Winterhawk Fitzhugh, Nause Waiwash Band of Indians

The Maryland Commission on Indian Affairs⁴⁵ has initiated a campaign to identify and preserve endangered landscapes across the state and enable appreciation of the holistic suite of resources important to all Marylanders. Community capacity building and broad-based partnering with preservation and conservation organizations and with non-traditional supporters of environmental stewardship are part of the campaign. The National Park Service is sponsoring research and a pilot mapping project to identify these culturally important landscape areas.



⁴⁴ [nps.gov/cajo/learn/indigenous-cultural-landscapes.htm](https://www.nps.gov/cajo/learn/indigenous-cultural-landscapes.htm); Accessed October 2018

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

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

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

State and Local Historic Property Designation Programs

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

⁴⁶ mht.maryland.gov/research_nationalregister.shtml

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



Chapman by Bob Cantin | Maryland Park Service

E. PARTNERS IN LAND CONSERVATION & PUBLIC OUTDOOR RECREATION

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

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

Working with Local Governments – Zoning and Land Use Control Consideration

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

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

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

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

⁴⁸ mda.maryland.gov/Maryland Agricultural Land Preservation Foundation/Pages/Certification.aspx; Accessed Oct. 2018

State Certification of County Agricultural Land Preservation Programs

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

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

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

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

Transfer of Development Rights Programs

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

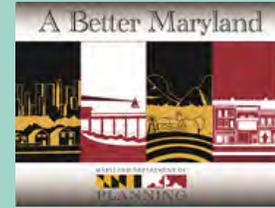
A Better Maryland: Maryland's New Statewide Development Plan

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

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

The goals of A Better Maryland are:

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



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

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

Bicycle and Pedestrian Master Plan

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

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

Large Landscape Federal Initiatives

National Park Service Led Landscape Conservation in the Chesapeake Bay Region

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

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

U.S. Fish and Wildlife Service Landscape

Conservation Cooperatives

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

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

⁵⁰ landscape.org/chesapeake

⁵¹ landscape.org/chesapeake; Accessed October 2018

⁵² northatlanticlcc.org/

⁵³ applcc.org/

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

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



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



A picnic by the cherry tree by Kristine Lochart

III. RESEARCH AND TRENDS

A. MARYLAND'S CHANGING POPULATION

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

Key Characteristics of Maryland's Population by Service Region

Total Population and Distribution of Residents

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

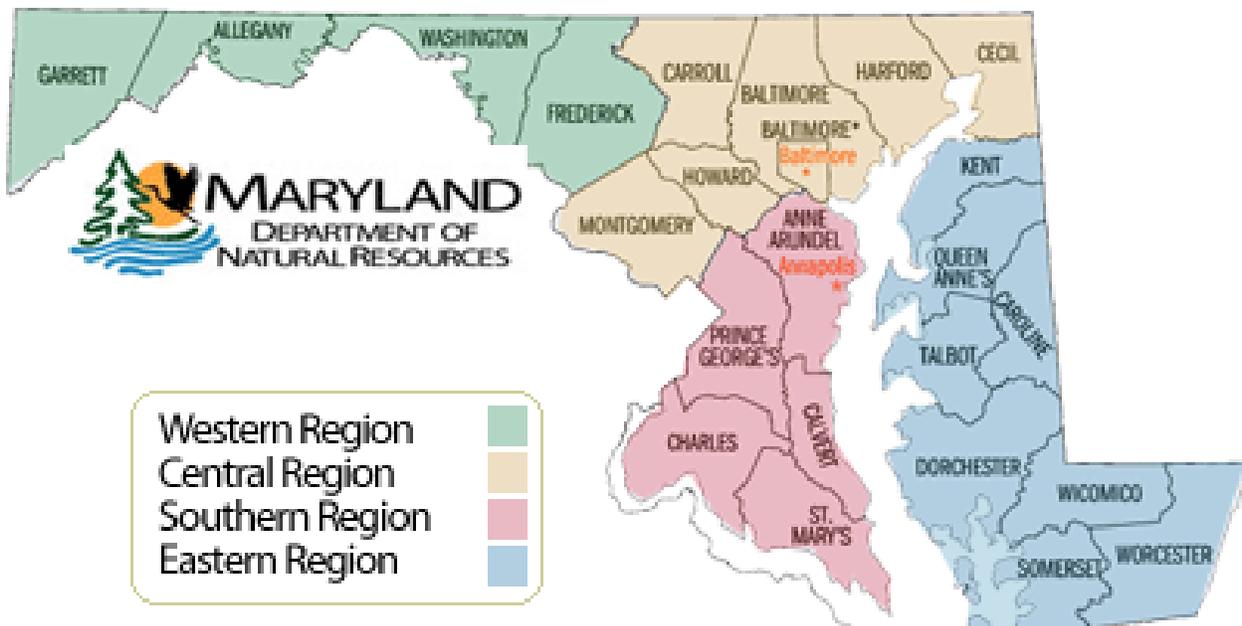
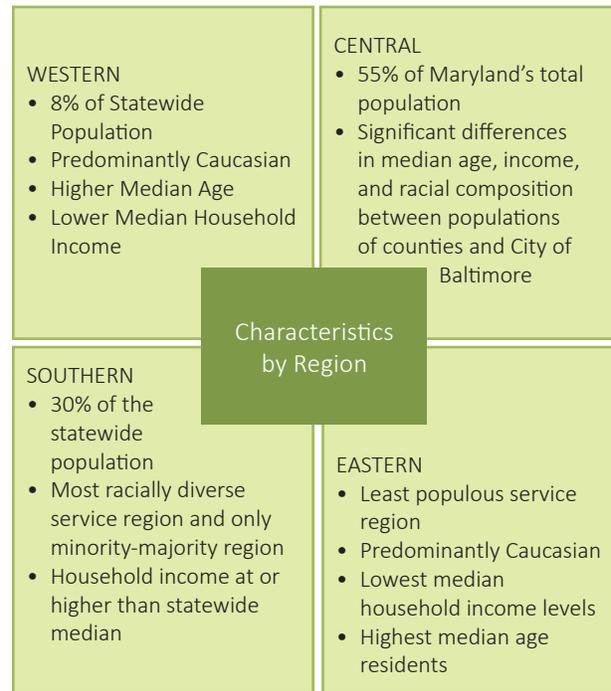
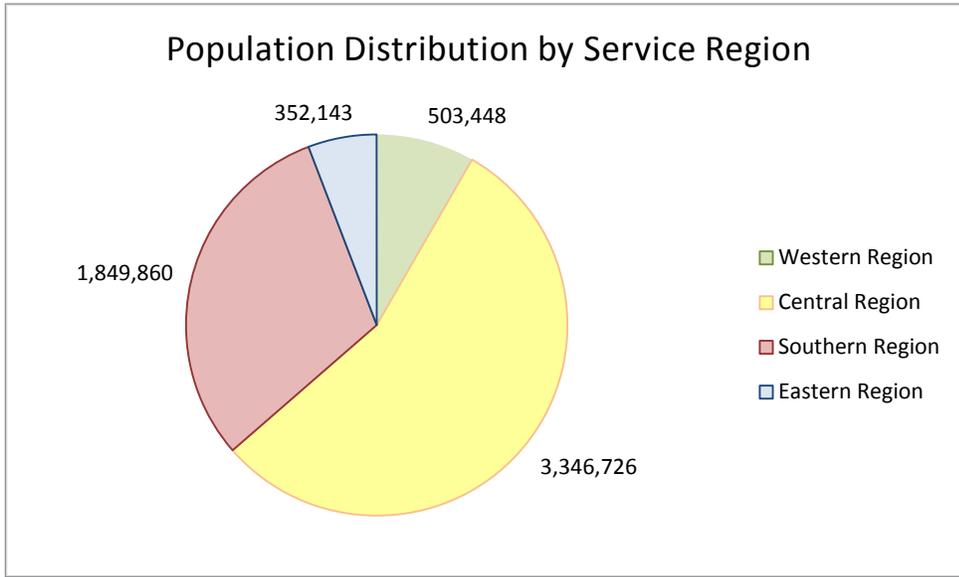


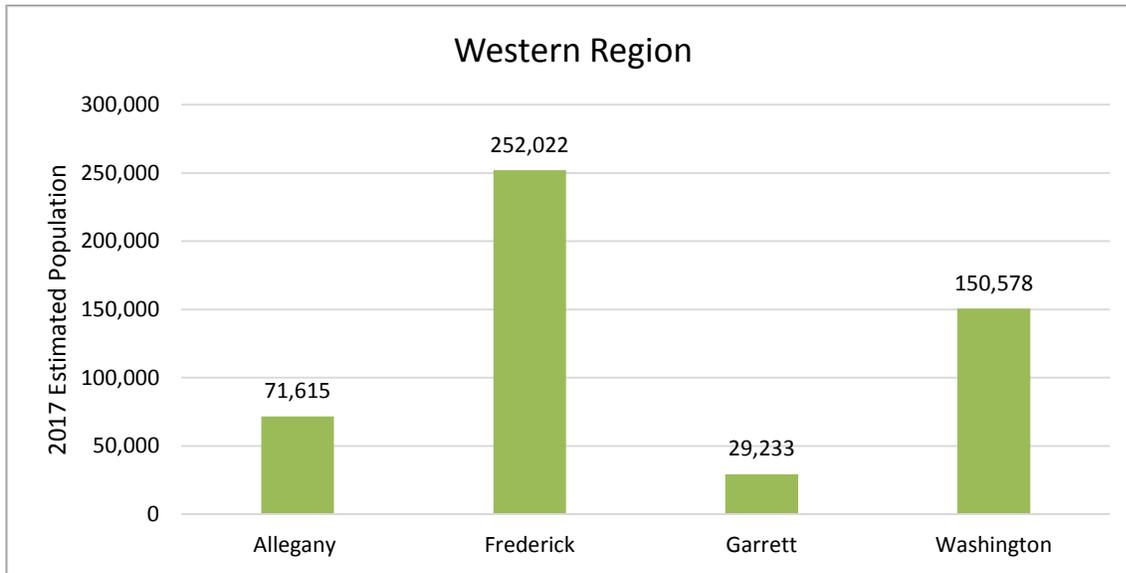
Figure 5: Maryland's Population Distribution by Department of Natural Resources Service Region



Source: Maryland Department of Planning

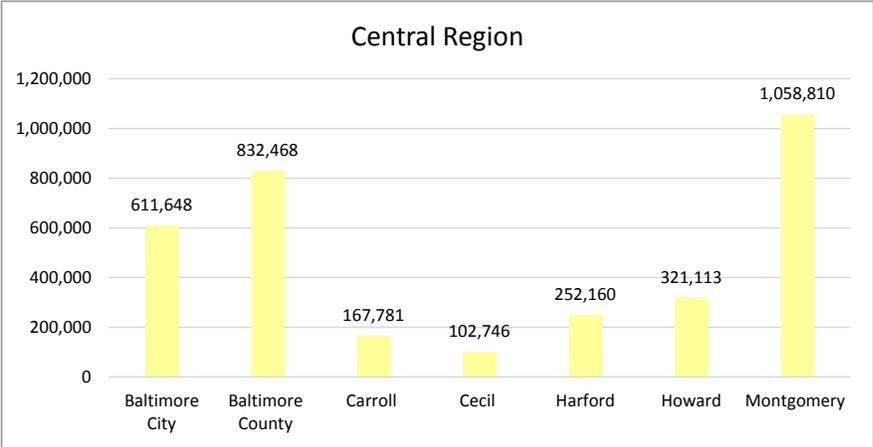
As **Figures 6 – 9** illustrate, the distribution of residents by county also varies.

Figure 6: Western Region Population Distribution



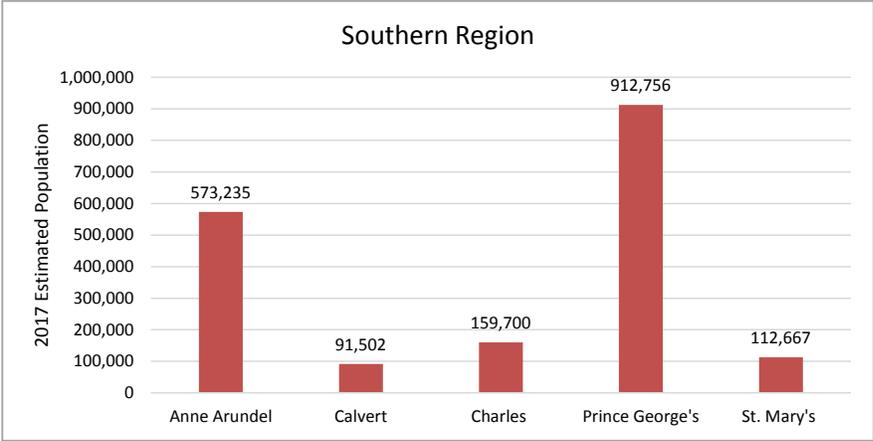
Source: Maryland Department of Planning

Figure 7: Central Region Population Distribution



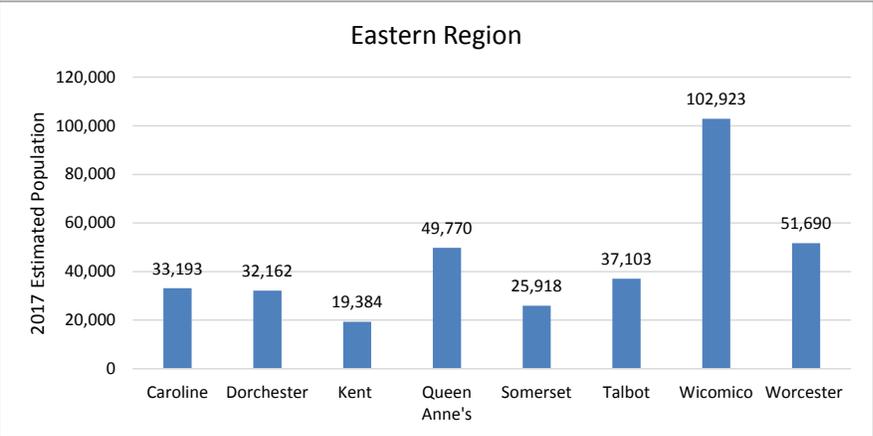
Source: Maryland Department of Planning

Figure 8: Southern Region Population Distribution



Source: Maryland Department of Planning

Figure 9: Eastern Region Population Distribution

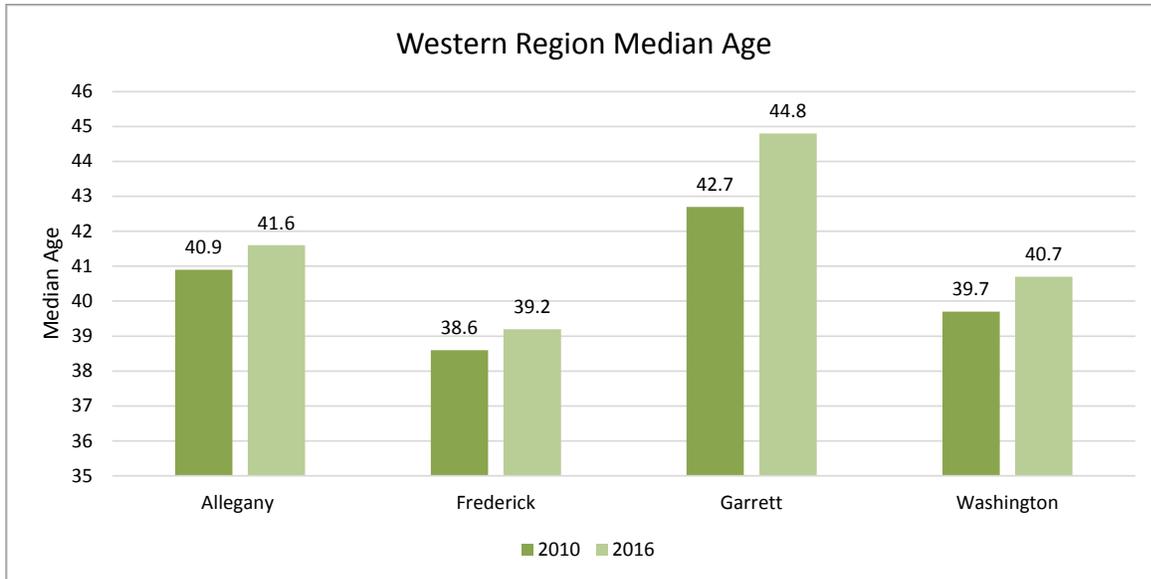


Source: Maryland Department of Planning

Population by Age

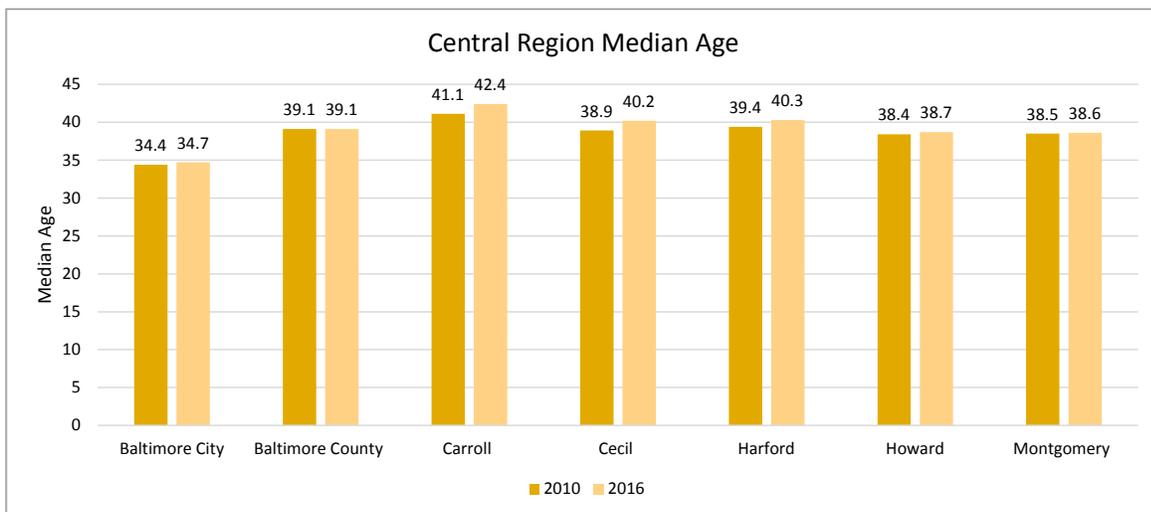
As of July 2017, the median age of Maryland residents was 38.7 years. Over the past decade, the statewide median age has fluctuated between roughly 37 to 40 years of age. The median age of residents by county varies widely across the state. **Figures 10 – 13** illustrate the current and 2010 median ages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

Figure 10: Median Age Comparison – Western Region



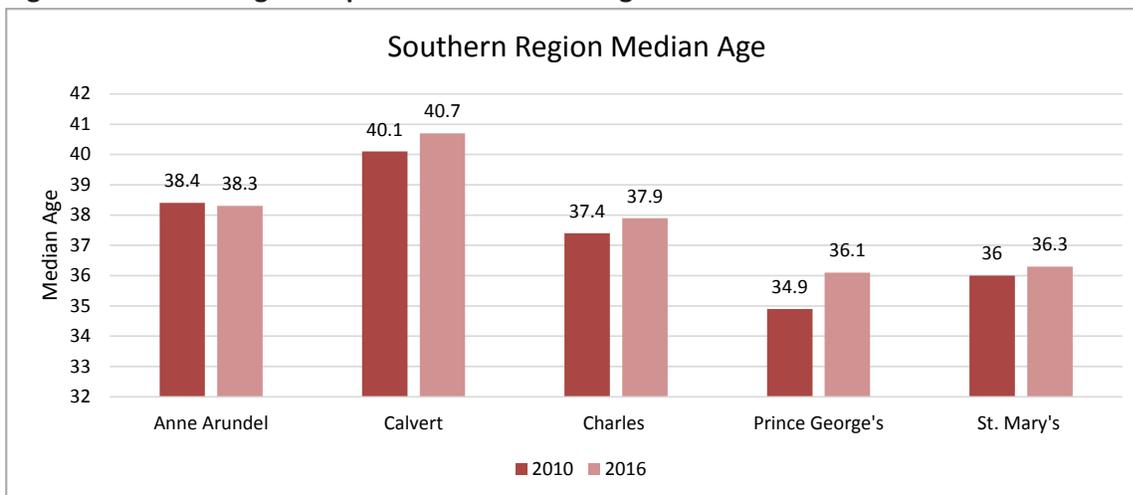
Source: U.S. Census Bureau American Community Survey 2016

Figure 11: Median Age Comparison – Central Region



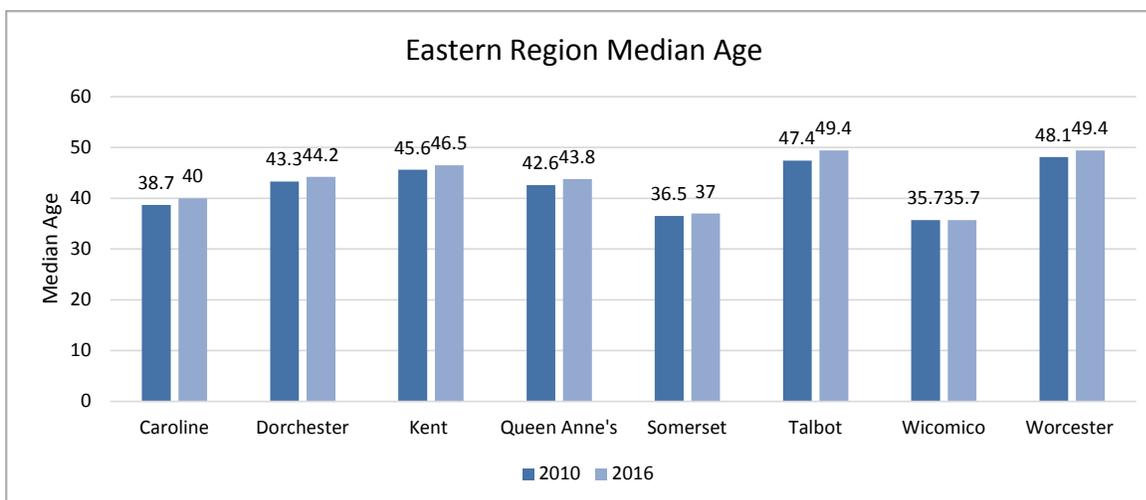
Source: U.S. Census Bureau American Community Survey 2016

Figure 12: Median Age Comparison – Southern Region



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

Figure 13: Median Age Comparison – Eastern Region



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

Population by Race

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

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

III. RESEARCH AND TRENDS

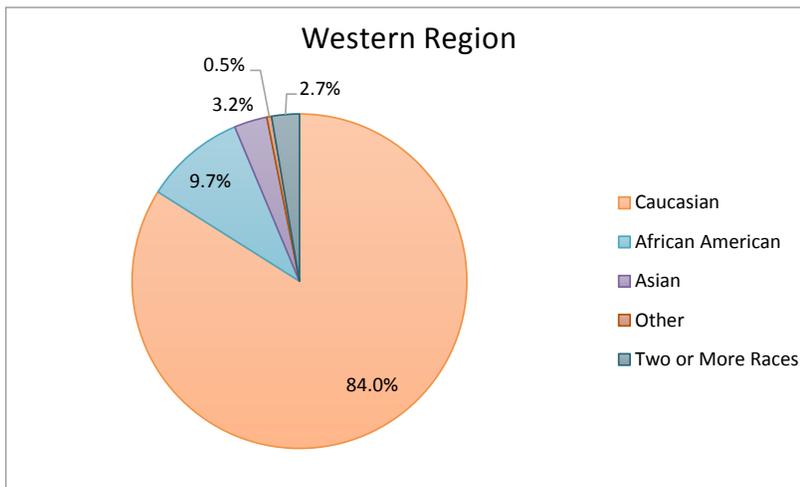
It should be noted that in reviewing population data, the U.S. Census Bureau does not consider Hispanic Origin as a category of race, but as a separate ethnic identifier counted separately from an individual’s racial identification. For example, an individual may identify as Caucasian and Hispanic, or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



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

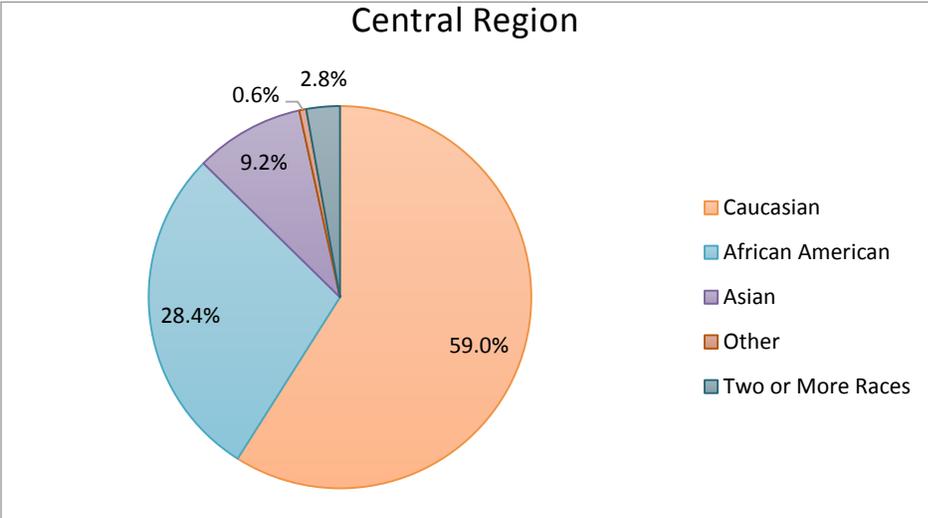
Figures 14 – 17 provide a breakdown of the racial character of the populations of each of the Department of Natural Resources service areas. The Central and Southern Regions are the most racially diverse statewide service regions.

Figure 14: Western Region Population Racial Character 2017



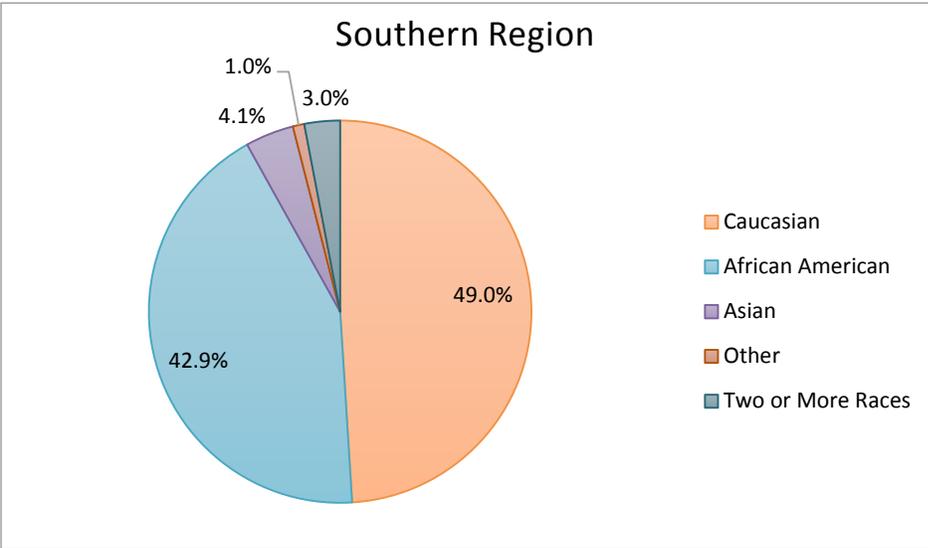
Source: Maryland Department of Planning

Figure 15: Central Region Population Racial Character 2017



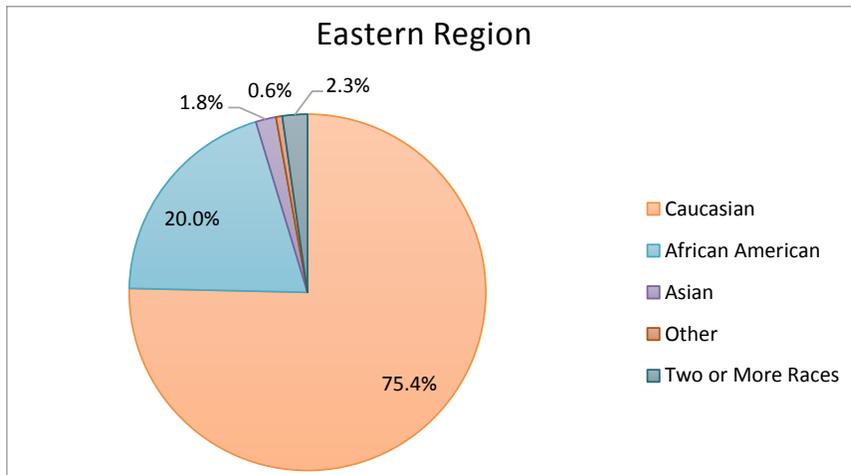
Source: Maryland Department of Planning

Figure 16: Southern Region Population Racial Character 2017



Source: Maryland Department of Planning

Figure 17: Eastern Region Population Racial Character 2017

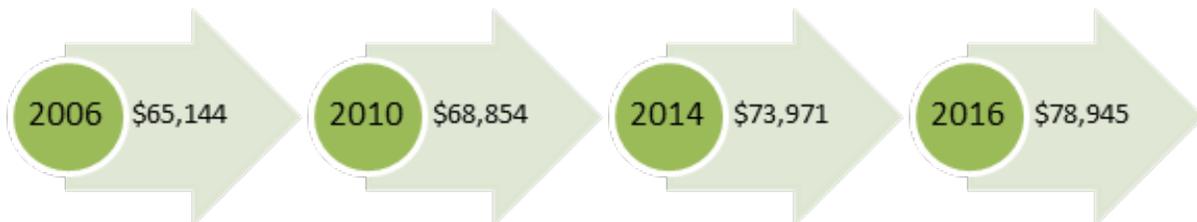


Source: Maryland Department of Planning

Median Household Income

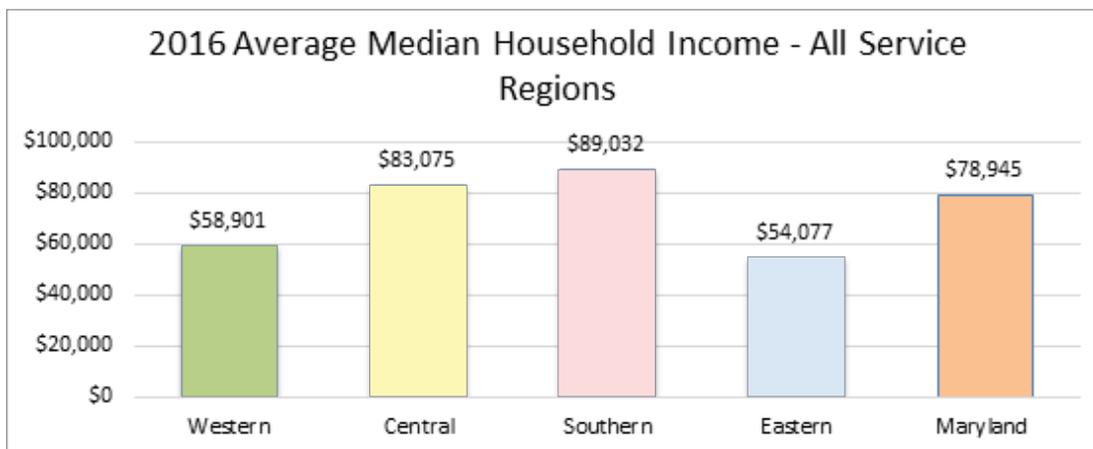
The median household income in Maryland has been steadily increasing over the past decade. While this is a positive trend overall, there are clear household income disparities between the populations of statewide service regions as well as between counties within each service region.

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

III. RESEARCH AND TRENDS

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

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

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

Regional Stakeholder Focus Group Input

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

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

**Regional Stakeholder Focus Group
Workshop Schedule**

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

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

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

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

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

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

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

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

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

Connectivity – people value a trail system that connects:

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

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

Communication – enhance it between:

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

Access – is needed for recreation opportunities:

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

Operations and maintenance – need greater attention:

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

Open space and recreation – is necessary infrastructure that:

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

Statewide Outdoor Recreation Survey

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

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

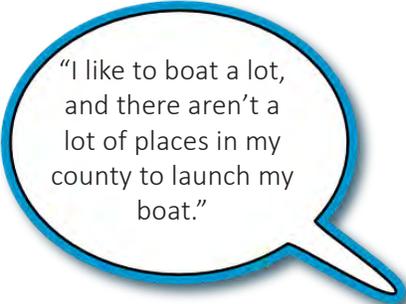
Statistically Valid Phone Survey

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

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

Public Open Link Survey

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



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



"I would like to see more walking trails."



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

Key Survey Findings

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

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

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

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

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

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



Figure 20: Survey Comparison - Outdoor Activities by Popularity

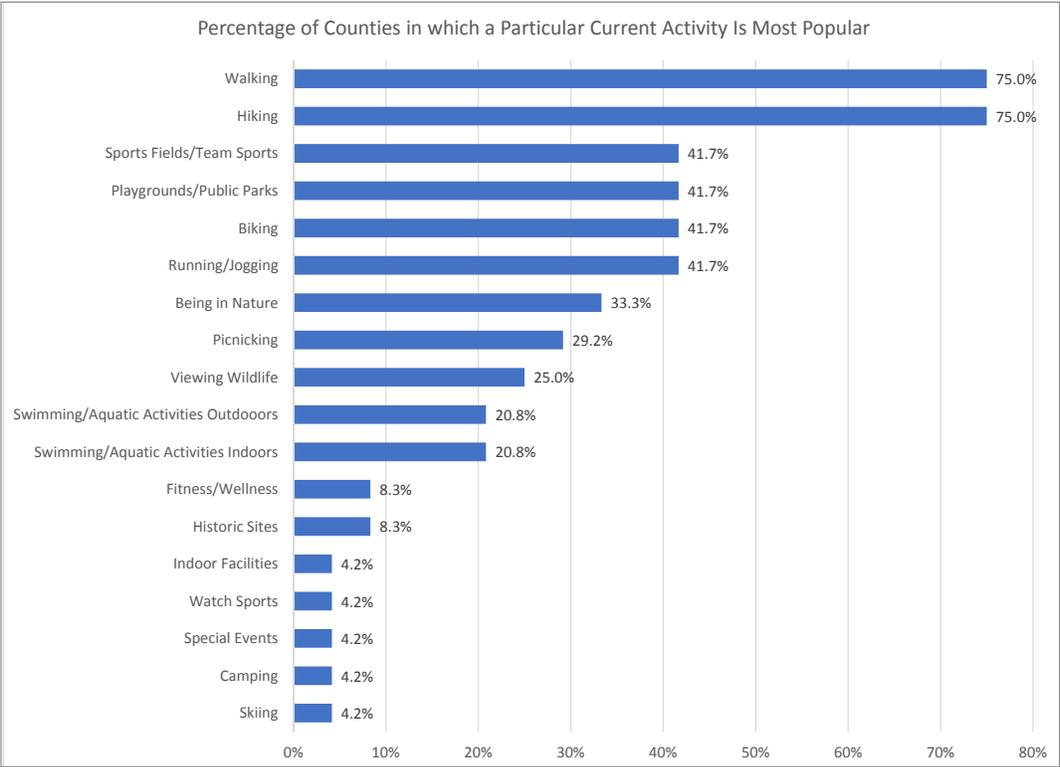
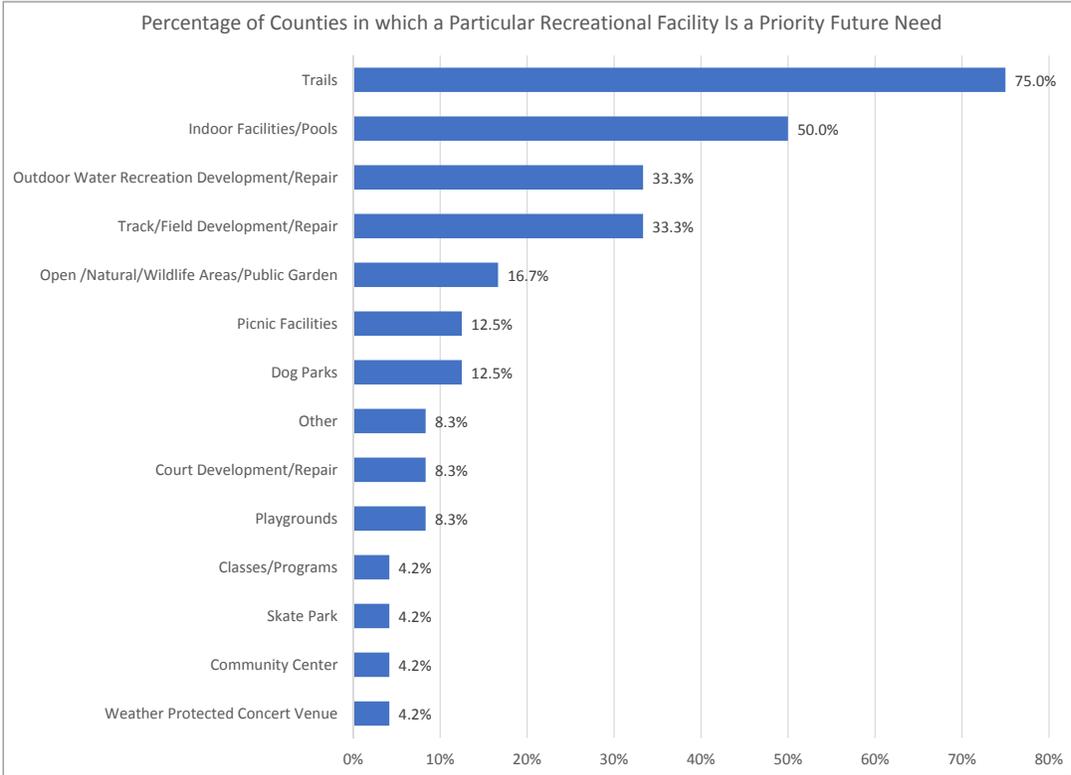


Figure 21: Survey Comparison - Outdoor Activities by Need



III. RESEARCH AND TRENDS

Outdoor Recreation Participation

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

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

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

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

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

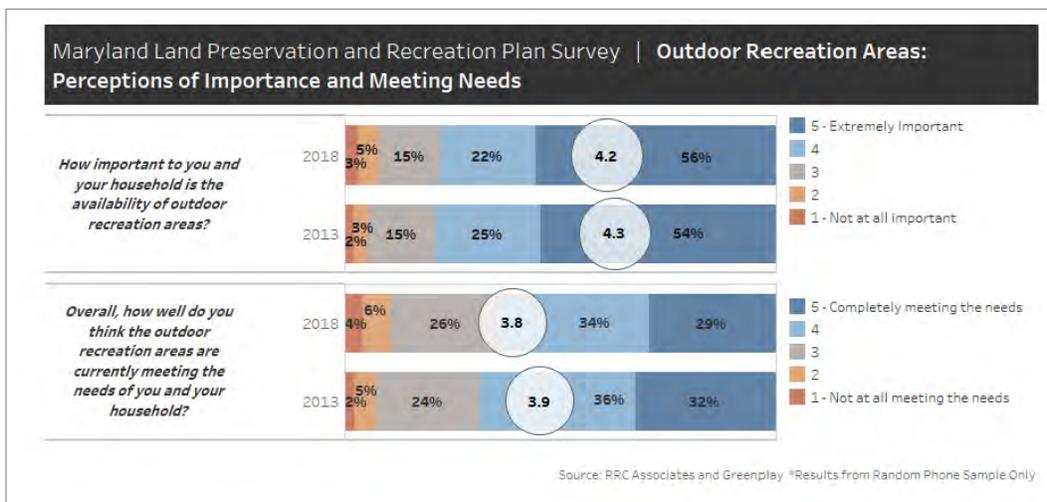
Regardless of where they lived, most residents accessed public lands by automobile and traveled less than an hour from home to do so. The availability of close-to-home recreation opportunities is important to Marylanders. This sentiment is also captured in many current local Land Preservation, Parks,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

TOP FIVE ACTIVITY PREFERENCES

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

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

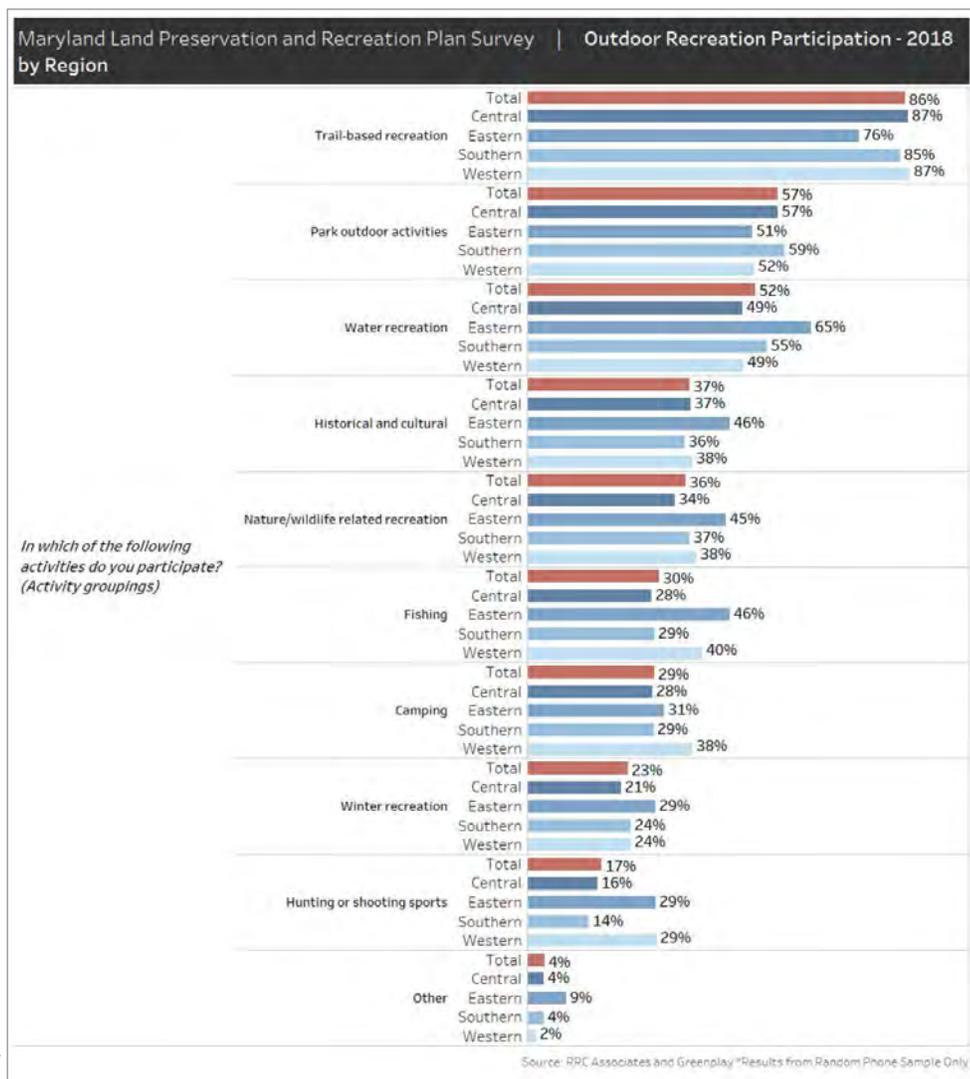
Figure 22: Importance of Outdoor Recreation and Needs Met



Top Activity Preferences

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

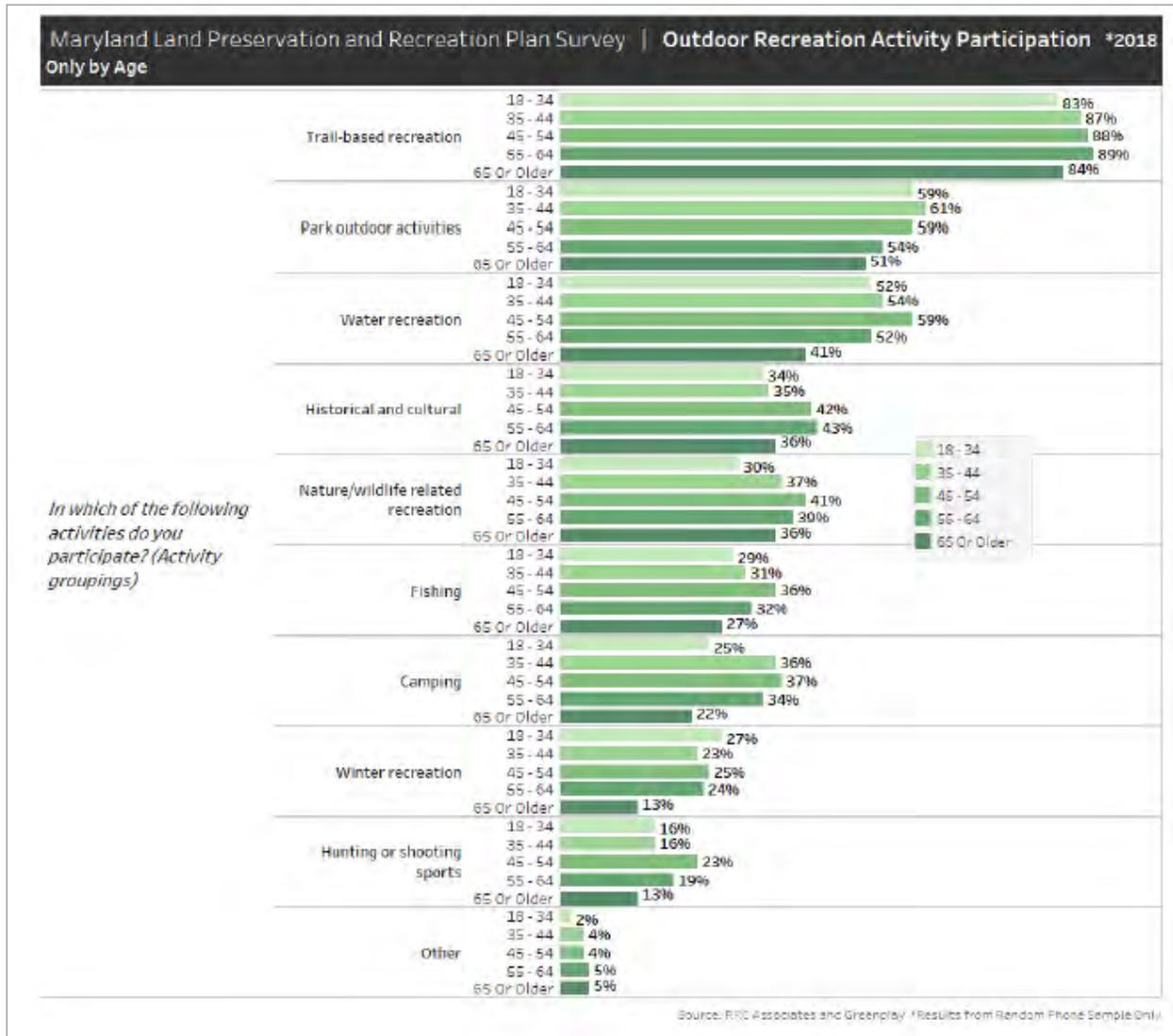
Figure 23: Outdoor Recreation Participation by Region



III. RESEARCH AND TRENDS

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

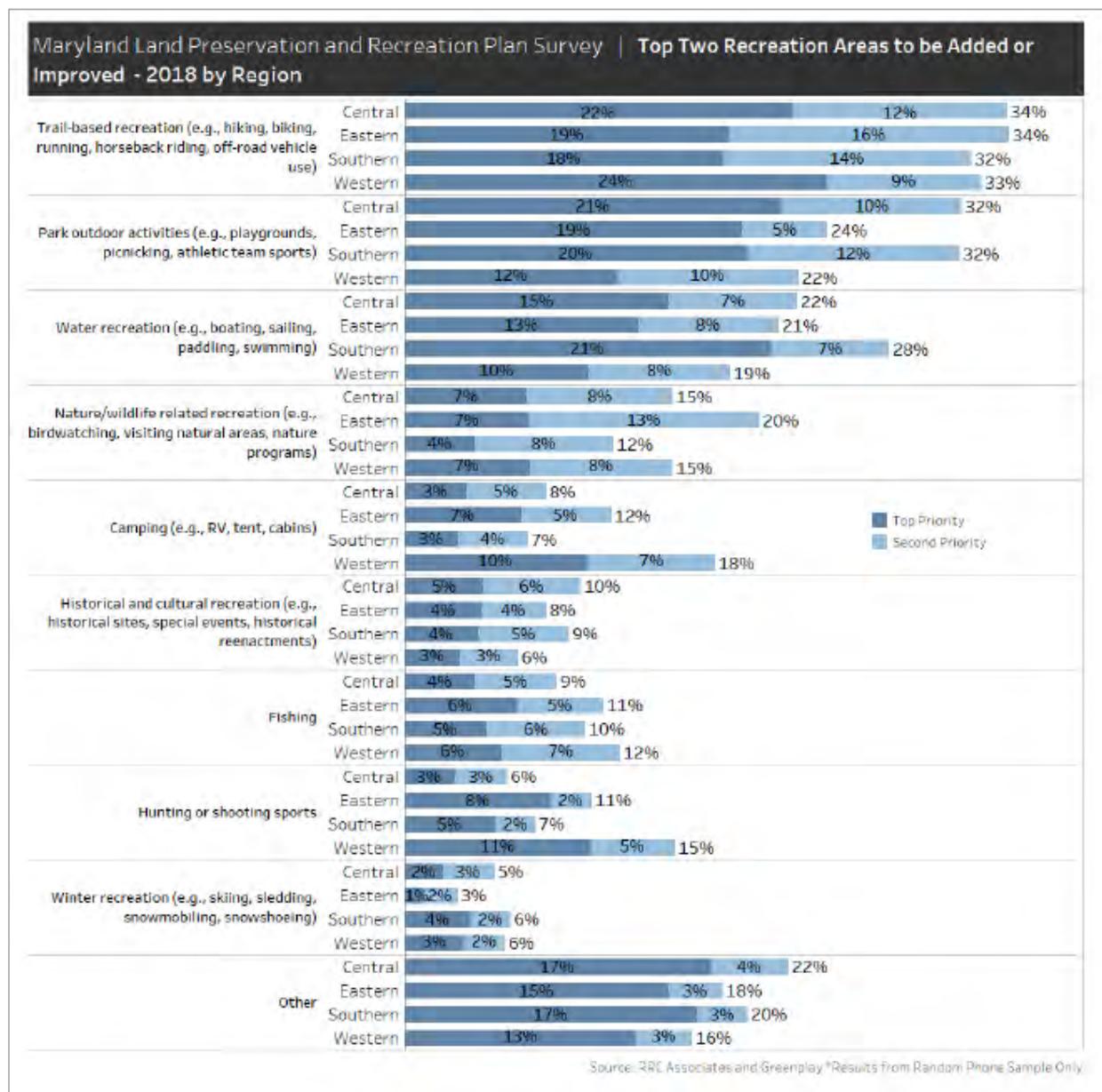
Figure 24: Outdoor Recreation Participation by Age



Priorities for Improvement

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

Figure 25: Top Recreation Opportunities to Improve by Regional Respondents



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

C. LEVEL OF SERVICE ANALYSIS

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

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

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

Methodology

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

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

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

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

Proximity vs. Access

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

Proximity Maps

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

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

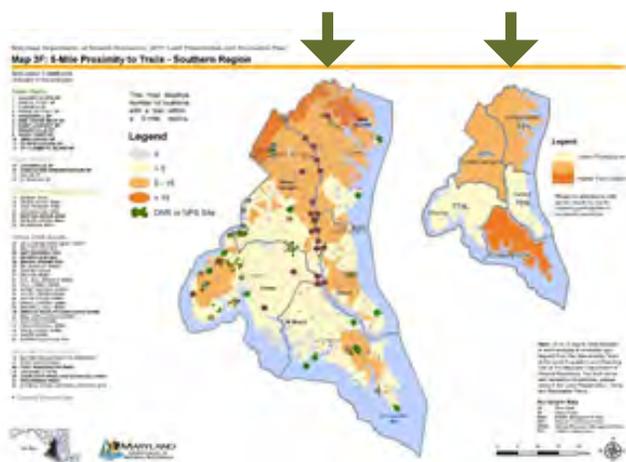
to provide a view of the current supply and demand for key outdoor recreation amenities and activities in Maryland. The resulting comparisons provide a basis to explore the dynamic between where outdoor amenities are located and where survey respondents indicated they participate in corresponding activities.

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

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

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

Proximity Map Participation Map



III. RESEARCH AND TRENDS

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

Analysis A: 5-Mile Proximity to Natural Areas

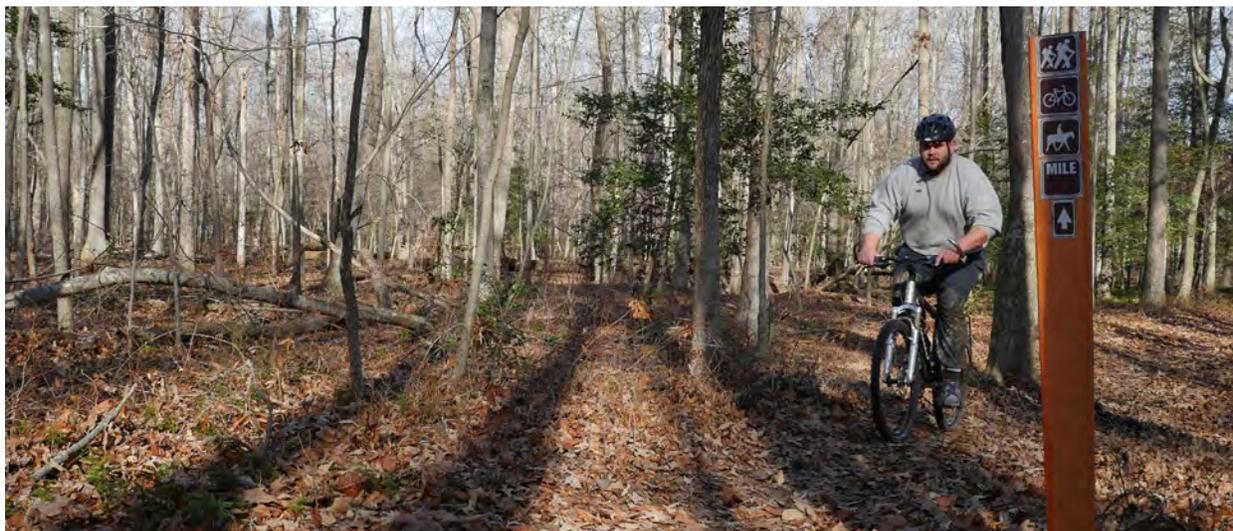
All locations included in the inventory were assumed to offer public natural areas. Based on this assumption this proximity map also served to display 5-mile proximity to all inventory locations. Participation rates were based on survey responses that indicate participation in “nature/wildlife related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

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

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

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

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



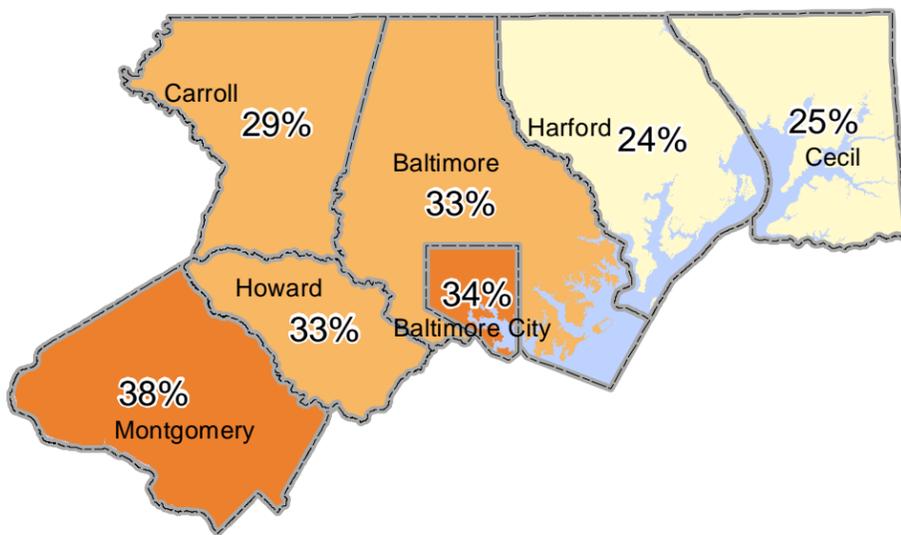
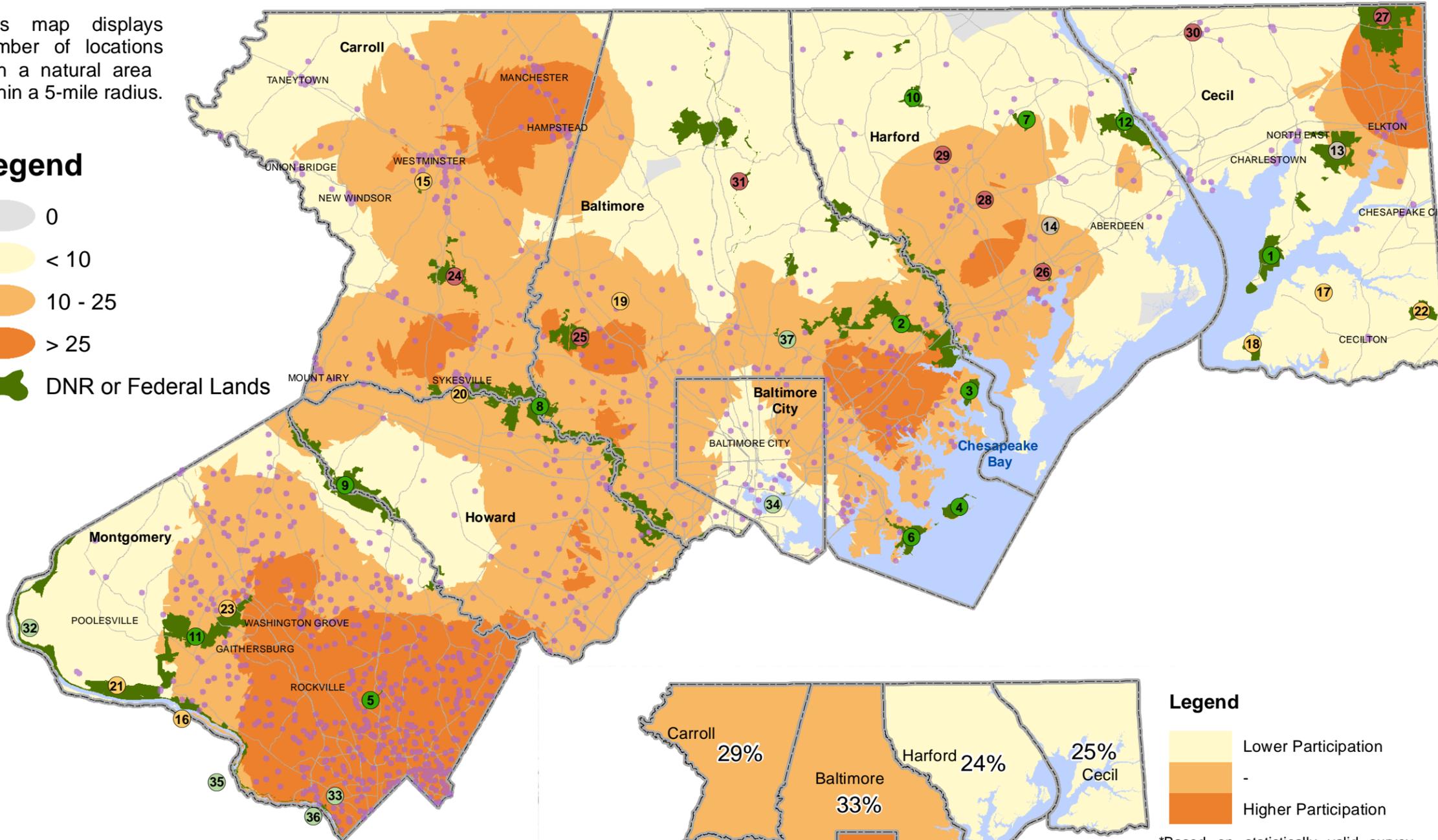
2015 First Day Hike | Cedarville State Forest Photo by Stephen Badger

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

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

Legend

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



Legend

- Lower Participation
-
- Higher Participation

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

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

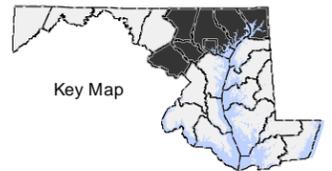
- State Parks**
 - 1 ELK NECK SP
 - 2 GUNPOWDER FALLS SP
 - 3 HAMMERMAN AREA
 - 4 HART, MILLER AND PLEASURE ISLANDS SP
 - 5 MATTHEW HENSON SP
 - 6 NORTH POINT SP
 - 7 PALMER SP
 - 8 PATAPSCO VALLEY SP
 - 9 PATUXENT RIVER SP
 - 10 ROCKS SP
 - 11 SENECA CREEK SP
 - 12 SUSQUEHANNA SP
- State Forests**
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

County/ Baltimore City Properties

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

Acronym Key

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



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

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

State Parks

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

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

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

Other DNR Assets

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

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

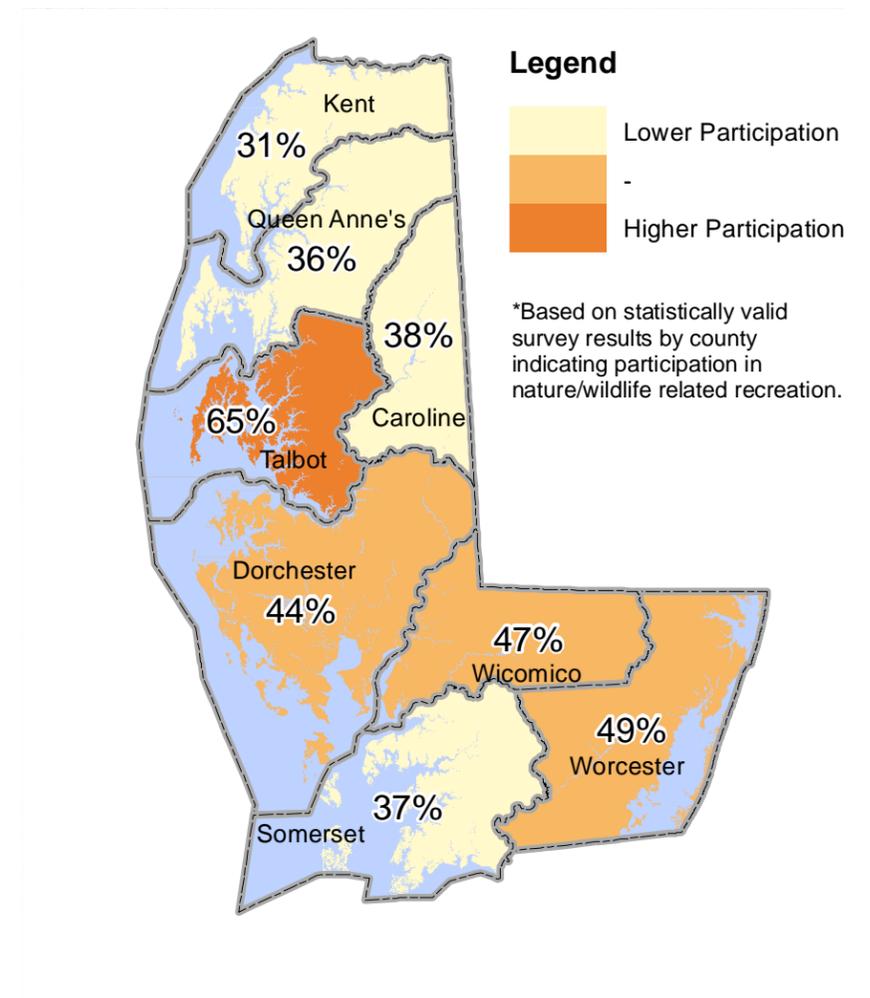
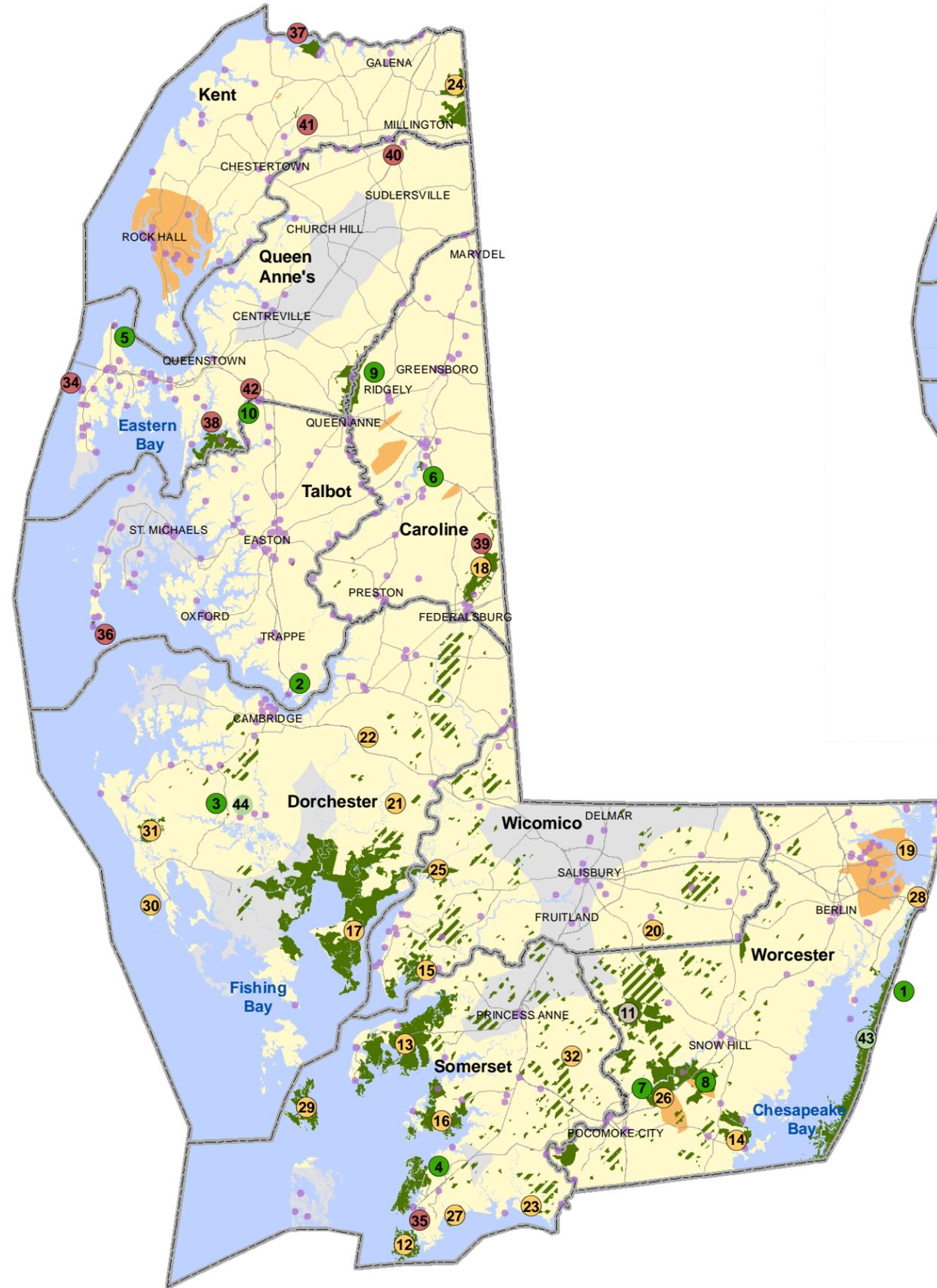
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

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

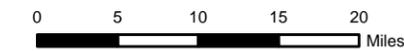
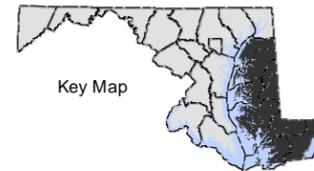
- Lower Participation
-
- Higher Participation

*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

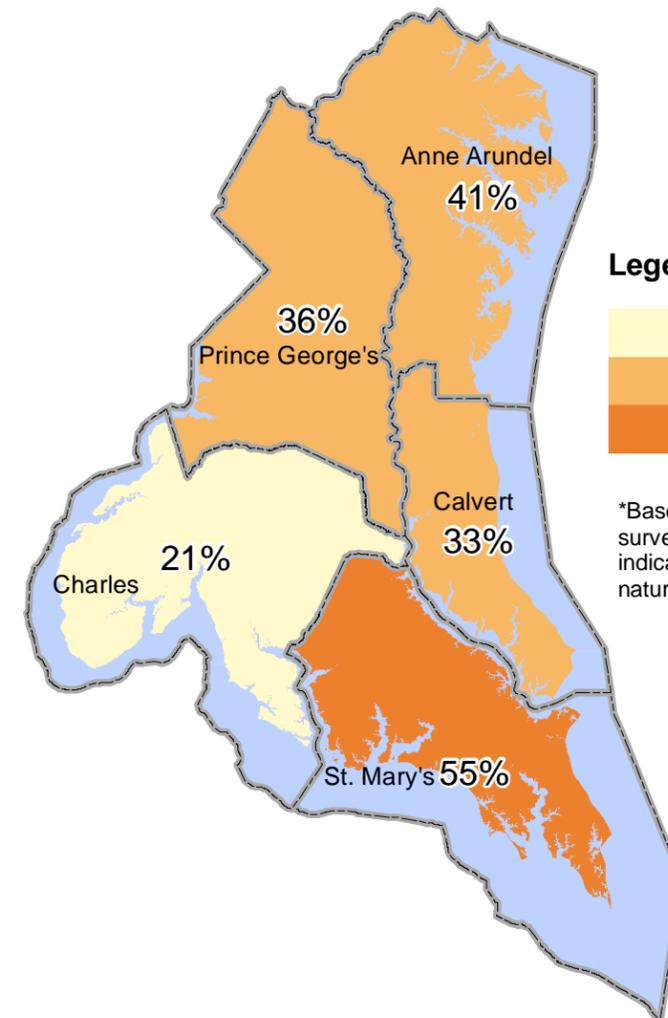
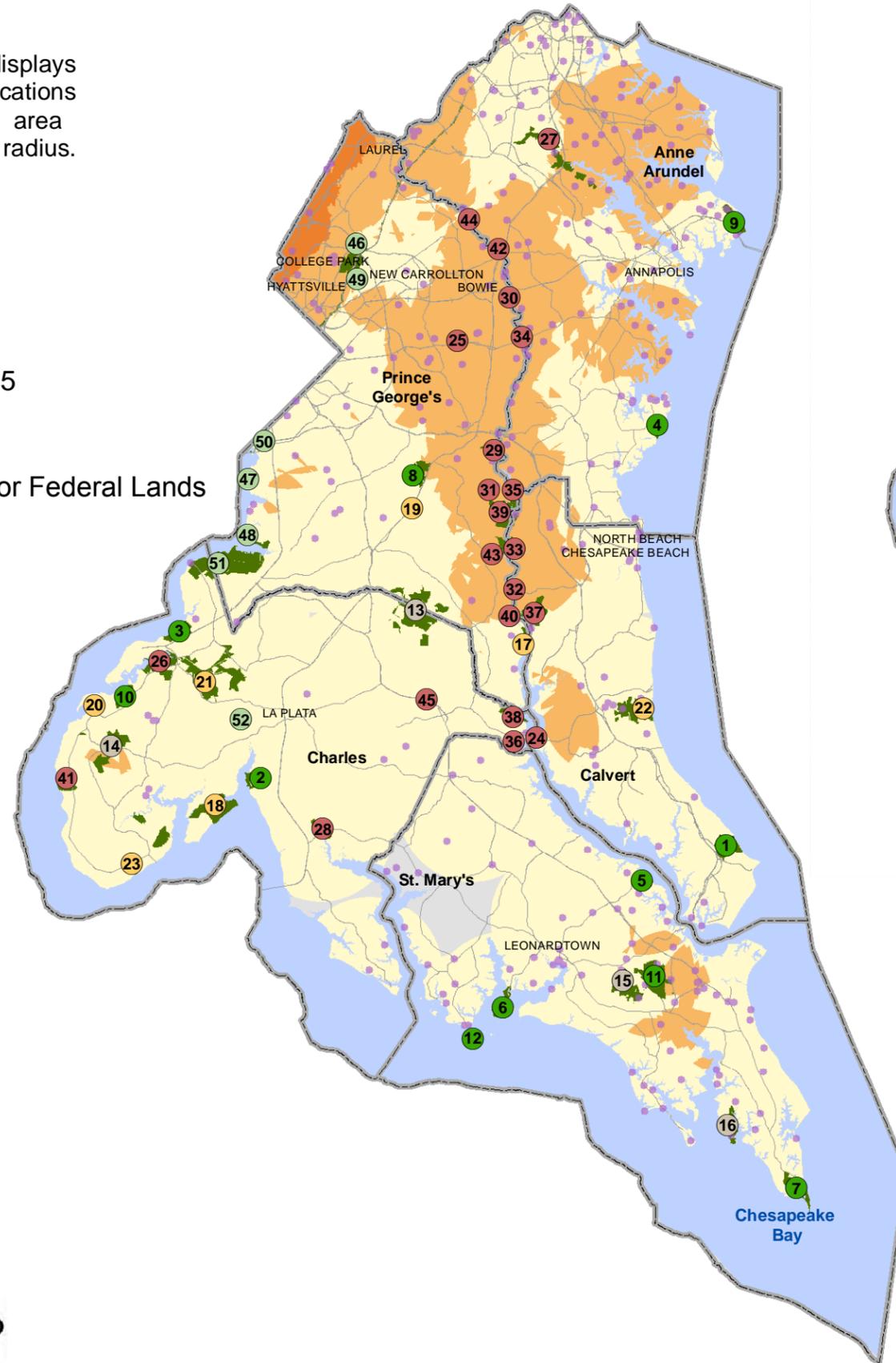
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

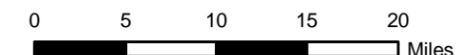
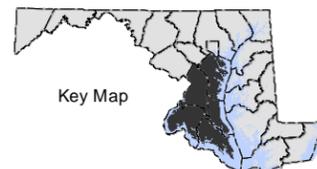
- Lower Participation
-
- Higher Participation

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

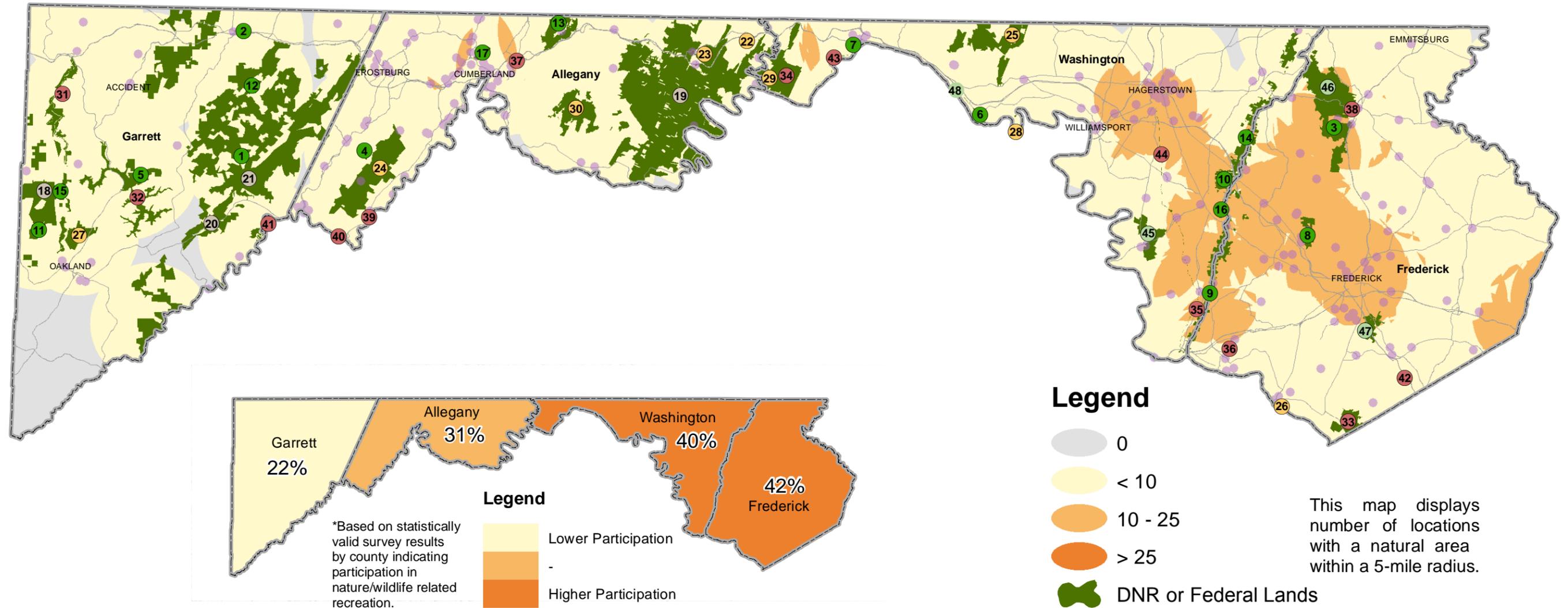
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

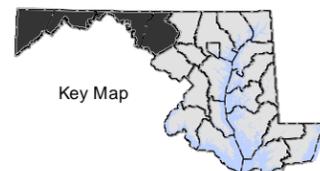
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

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.

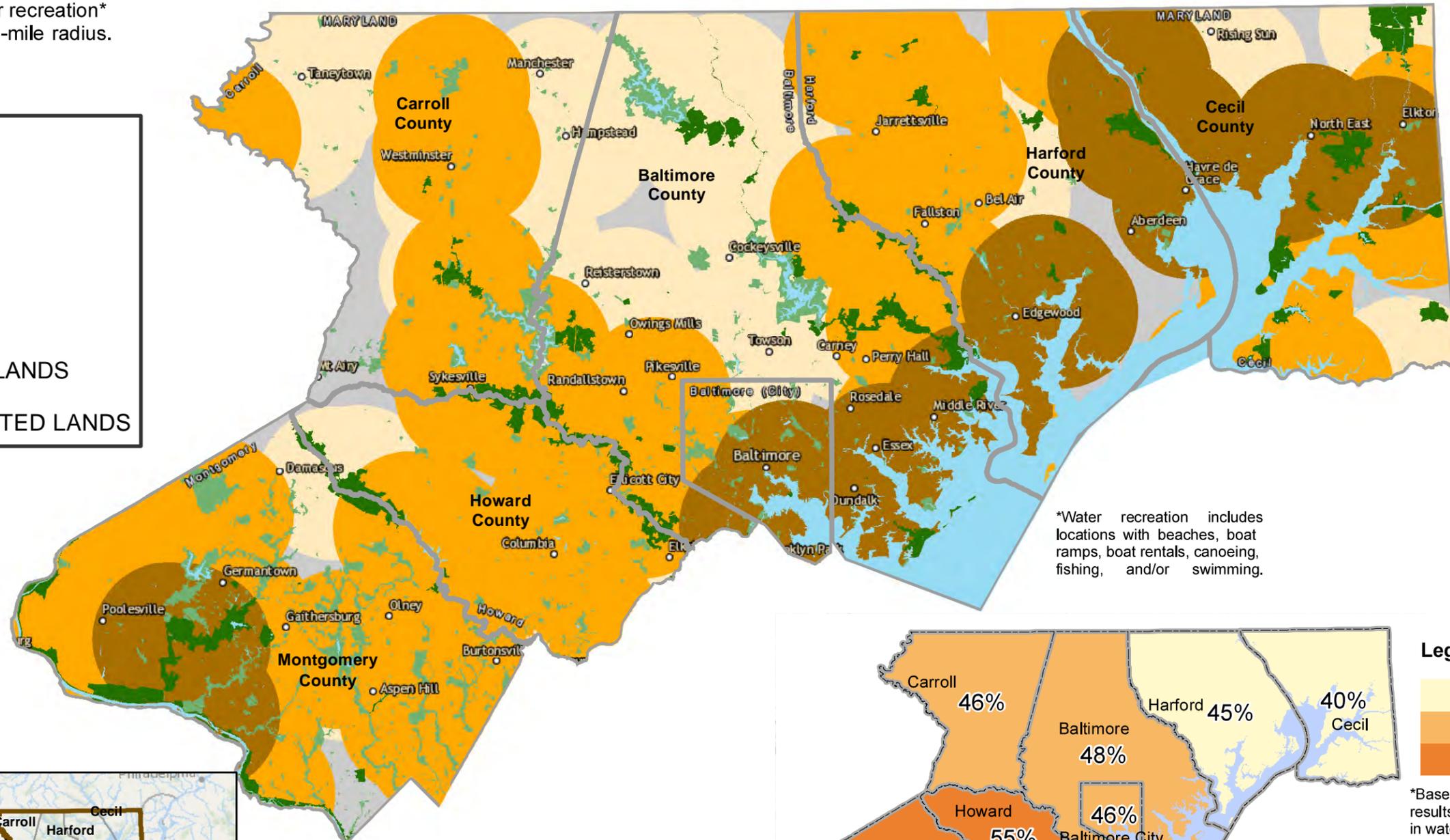
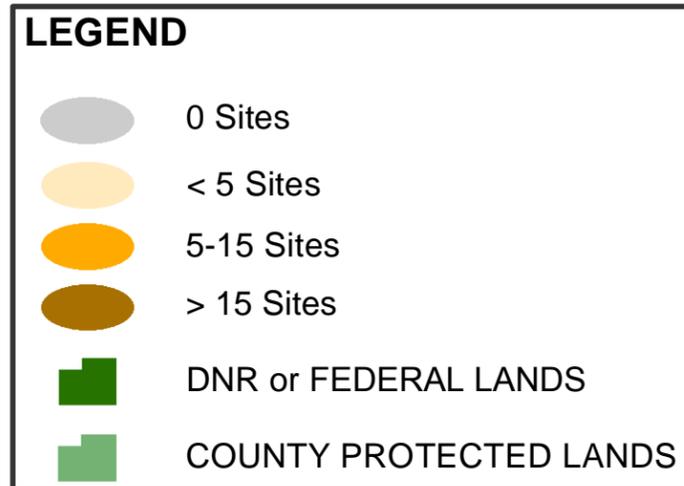


Big Spray by Paula Neumann

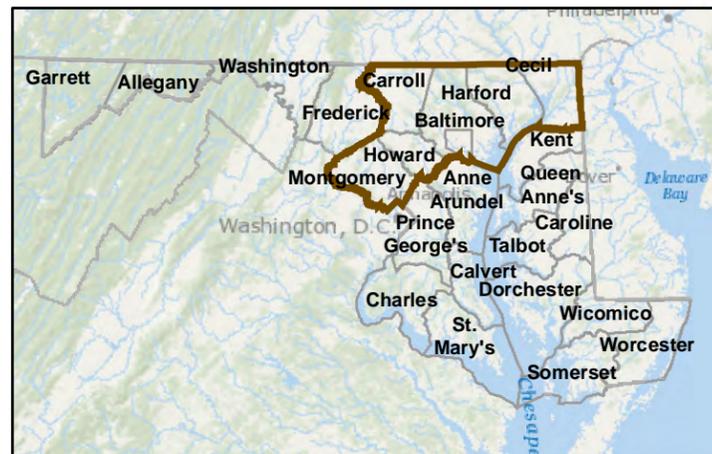
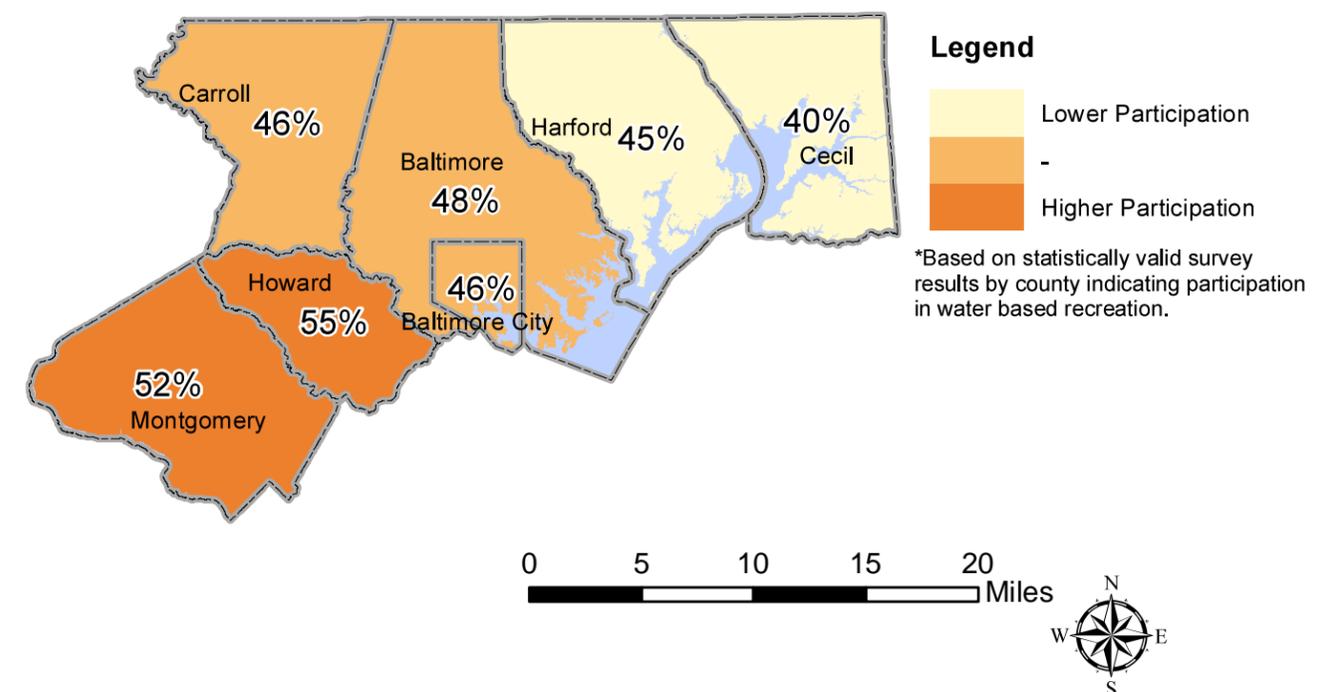
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5-Mile Proximity to Water Recreation - Central Region

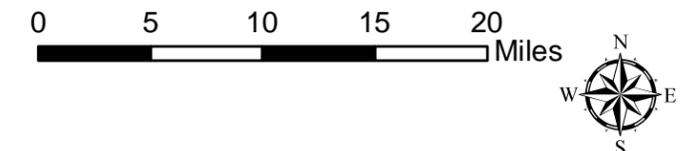
This map displays number of locations with water recreation* within a 5-mile radius.



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

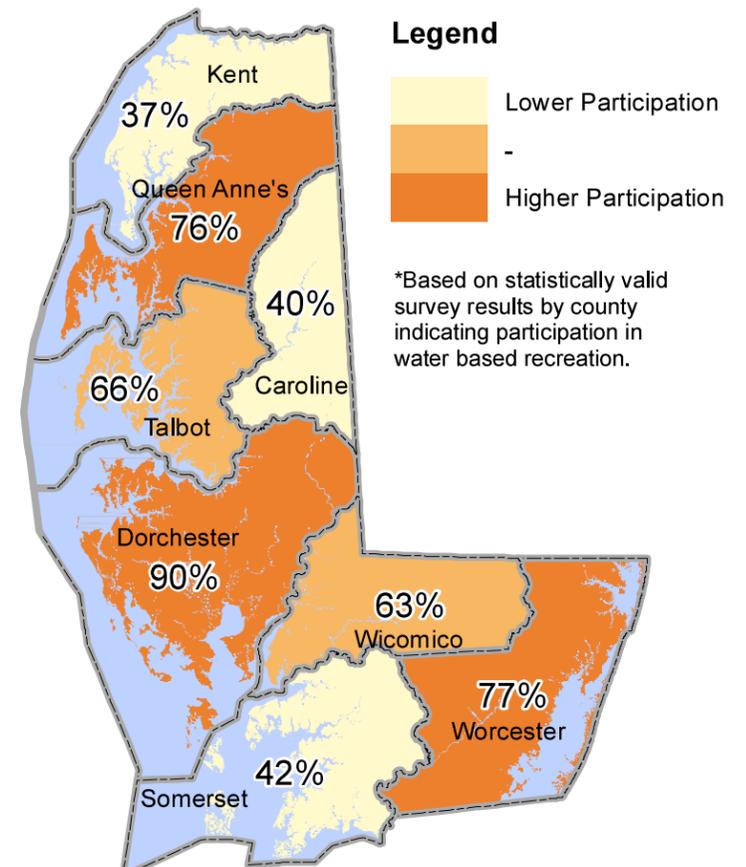
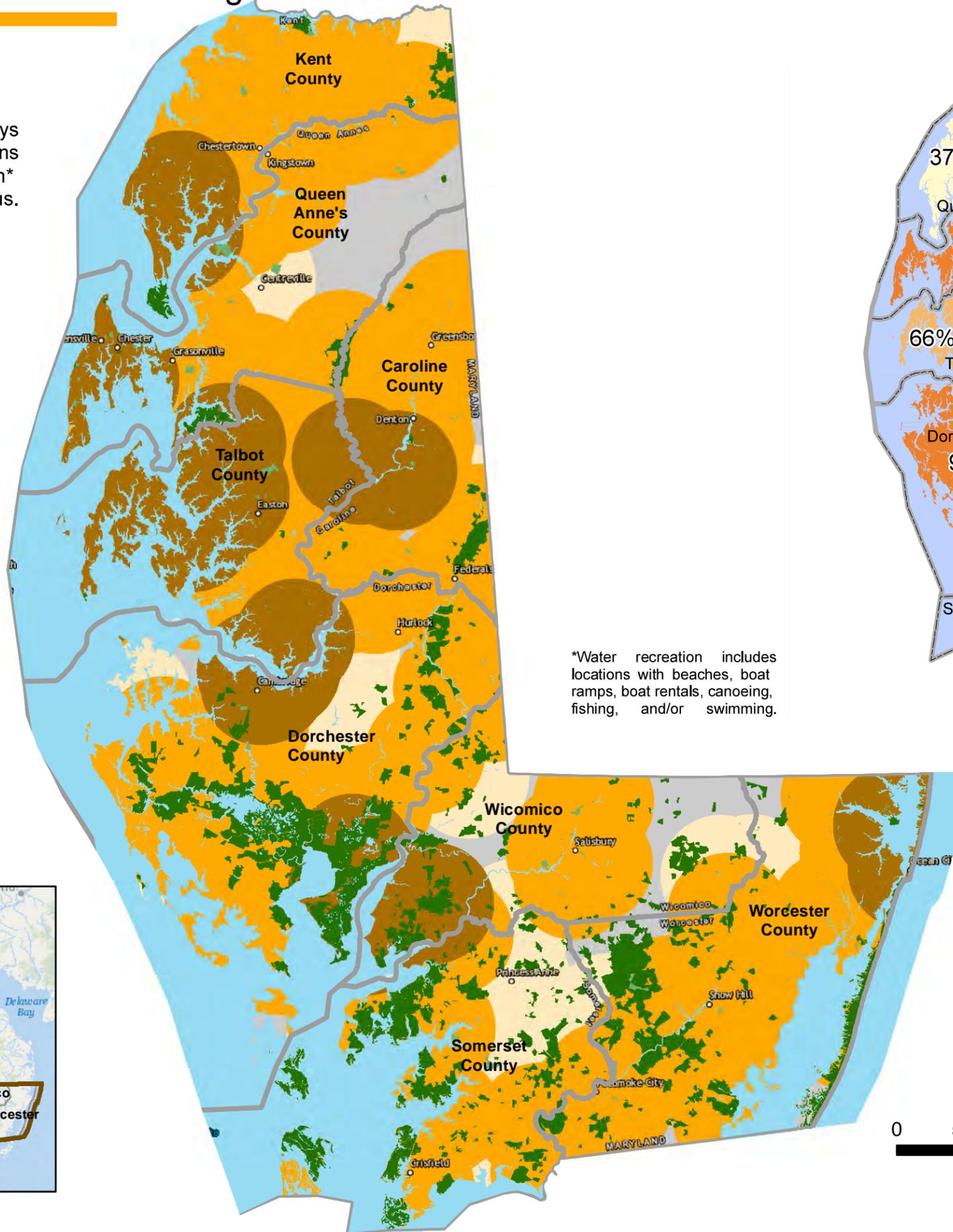
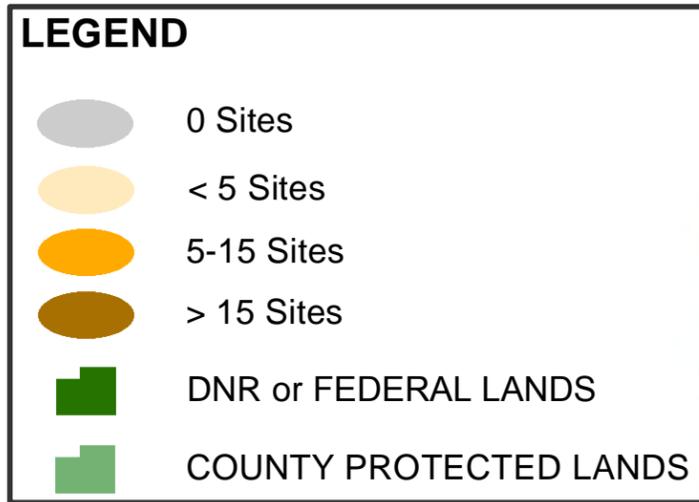


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

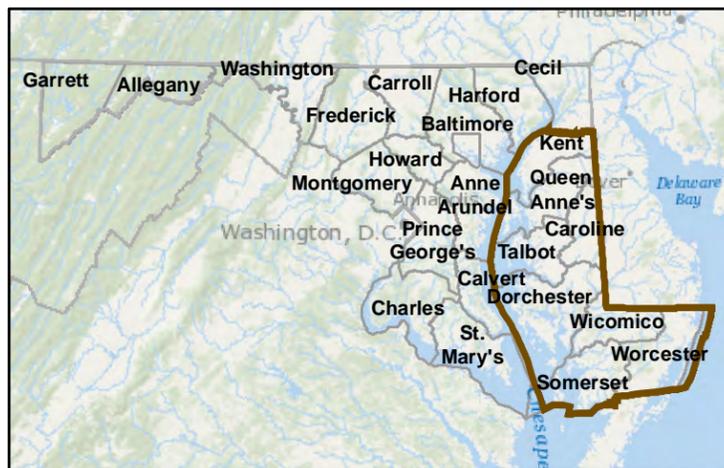


5-Mile Proximity to Water Recreation - Eastern Region

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.

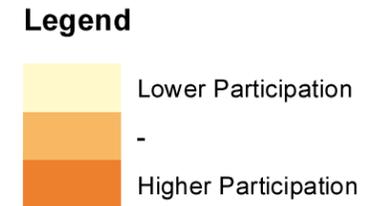
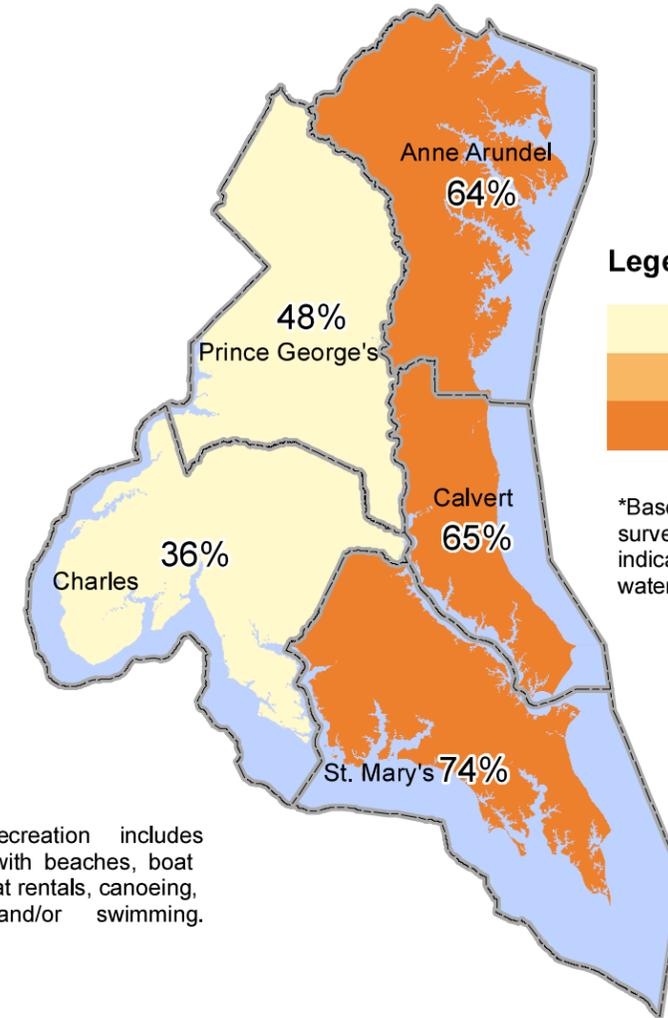
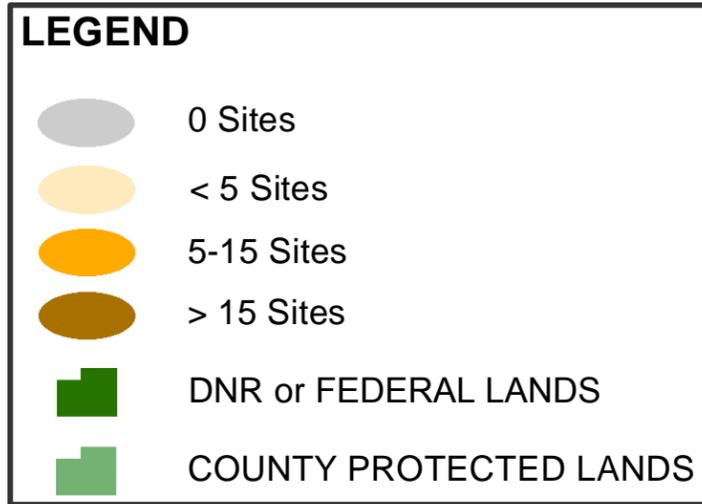


Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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



5-Mile Proximity to Water Recreation - Southern Region

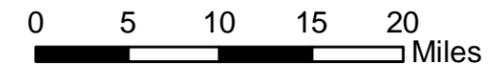
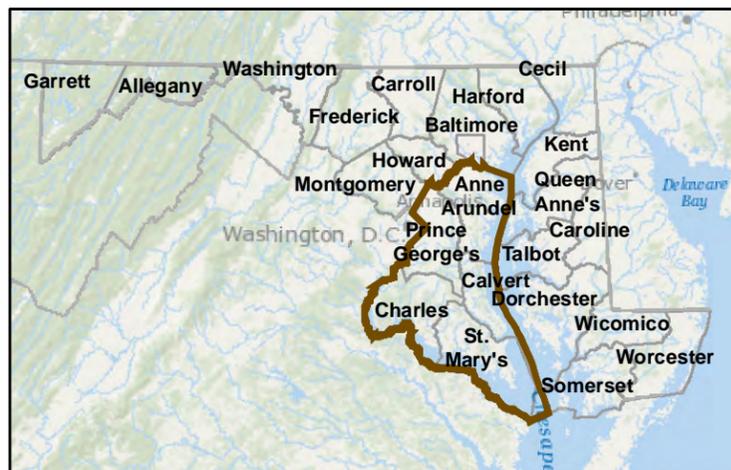
This map displays number of locations with water recreation* within a 5-mile radius.



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

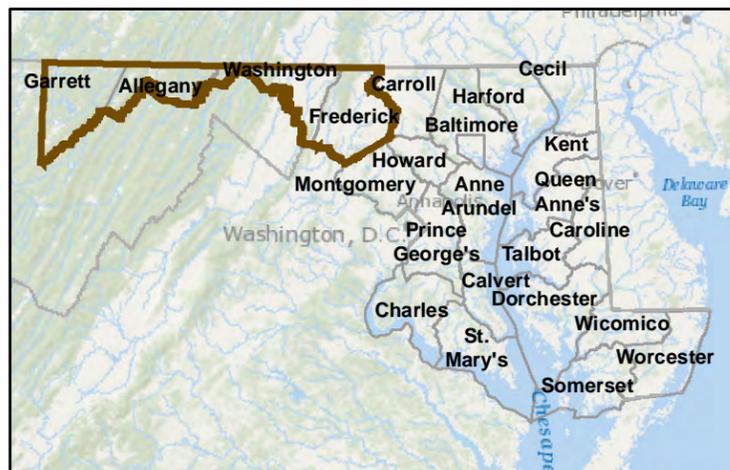
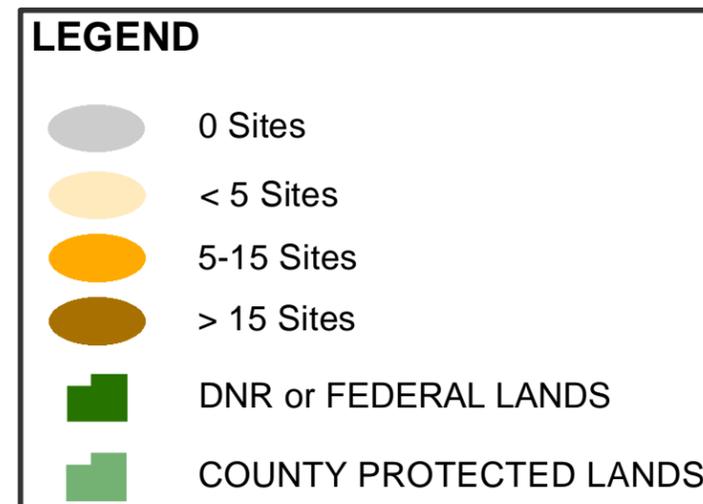
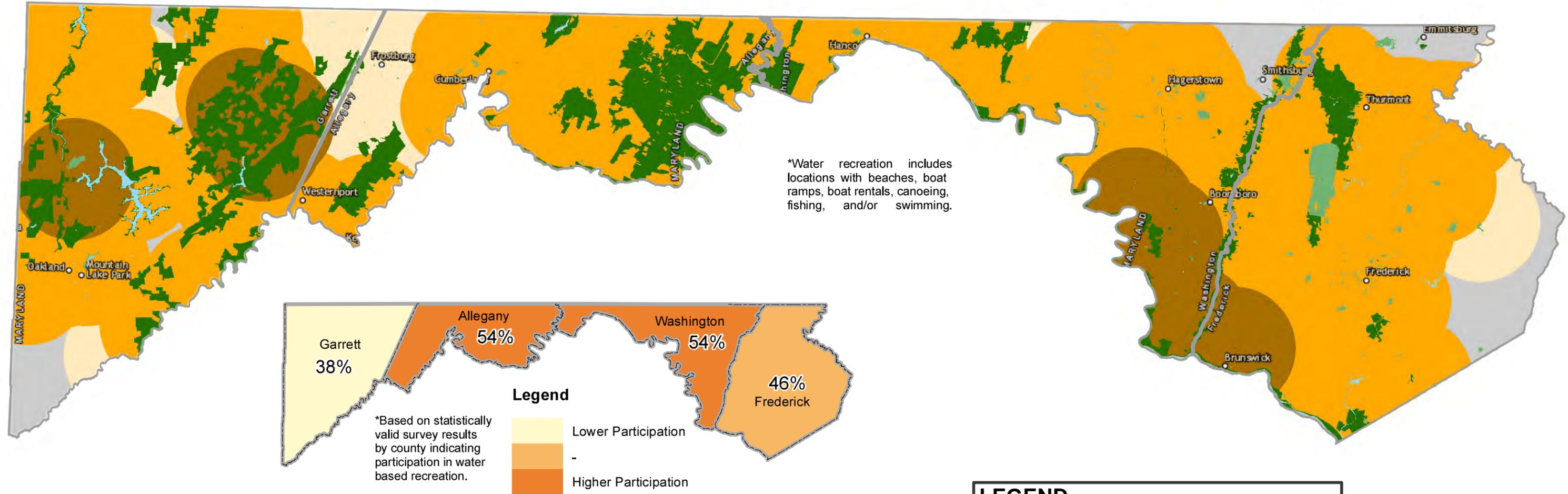
*Water recreation includes locations with beaches, boat ramps, boat rentals, canoeing, fishing, and/or swimming.

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

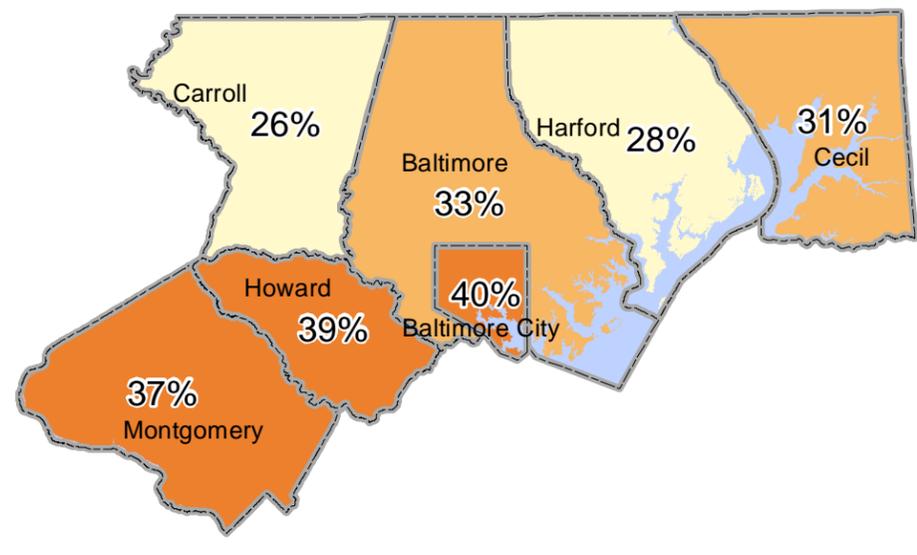
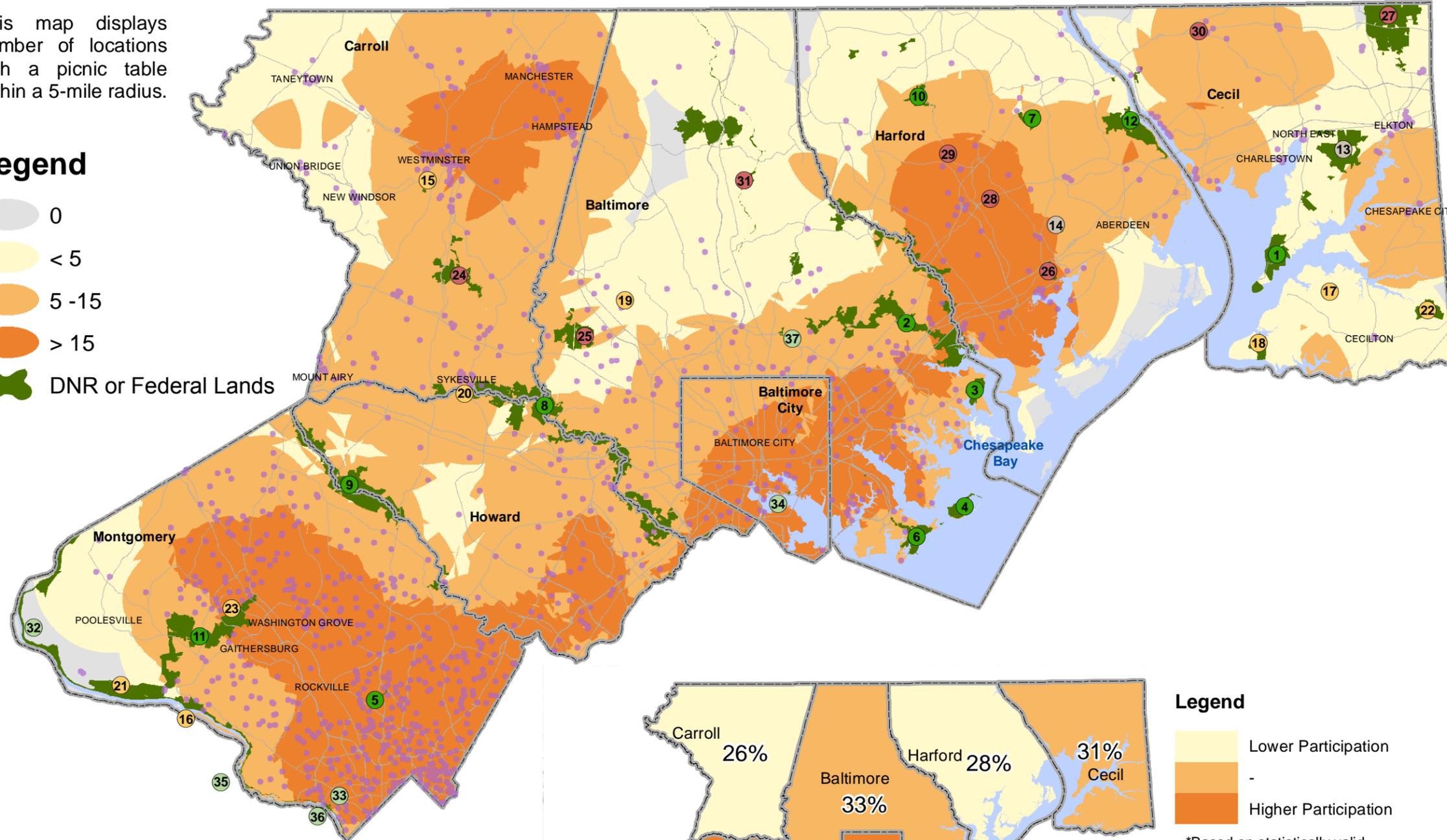
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Map 1C: 5-Mile Proximity to Picnicking - Central Region

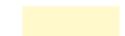
This map displays number of locations with a picnic table within a 5-mile radius.

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

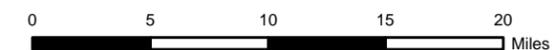
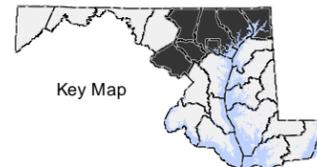
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

• 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

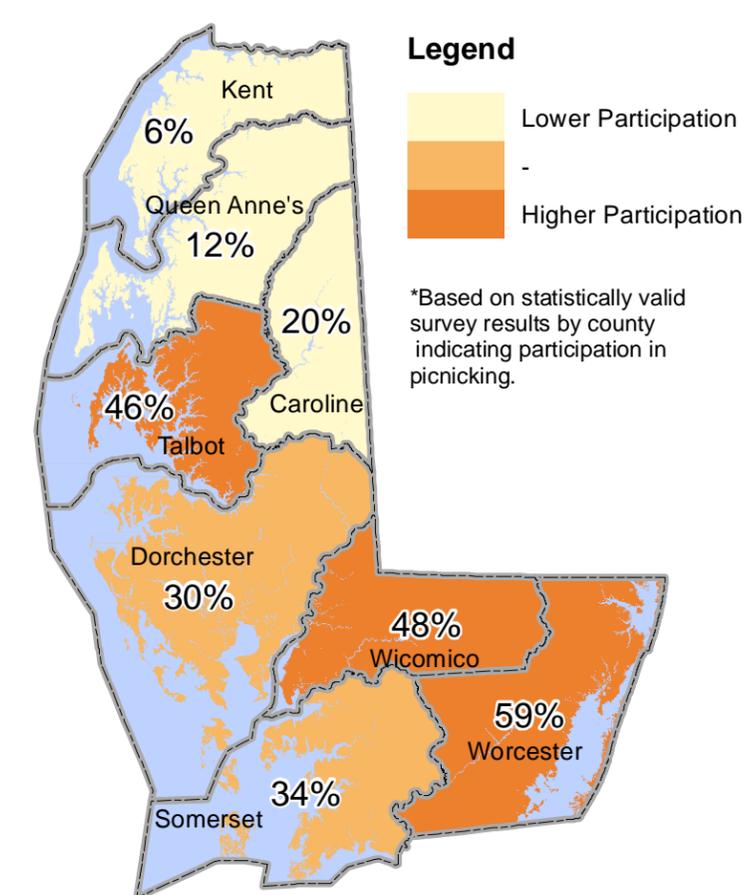
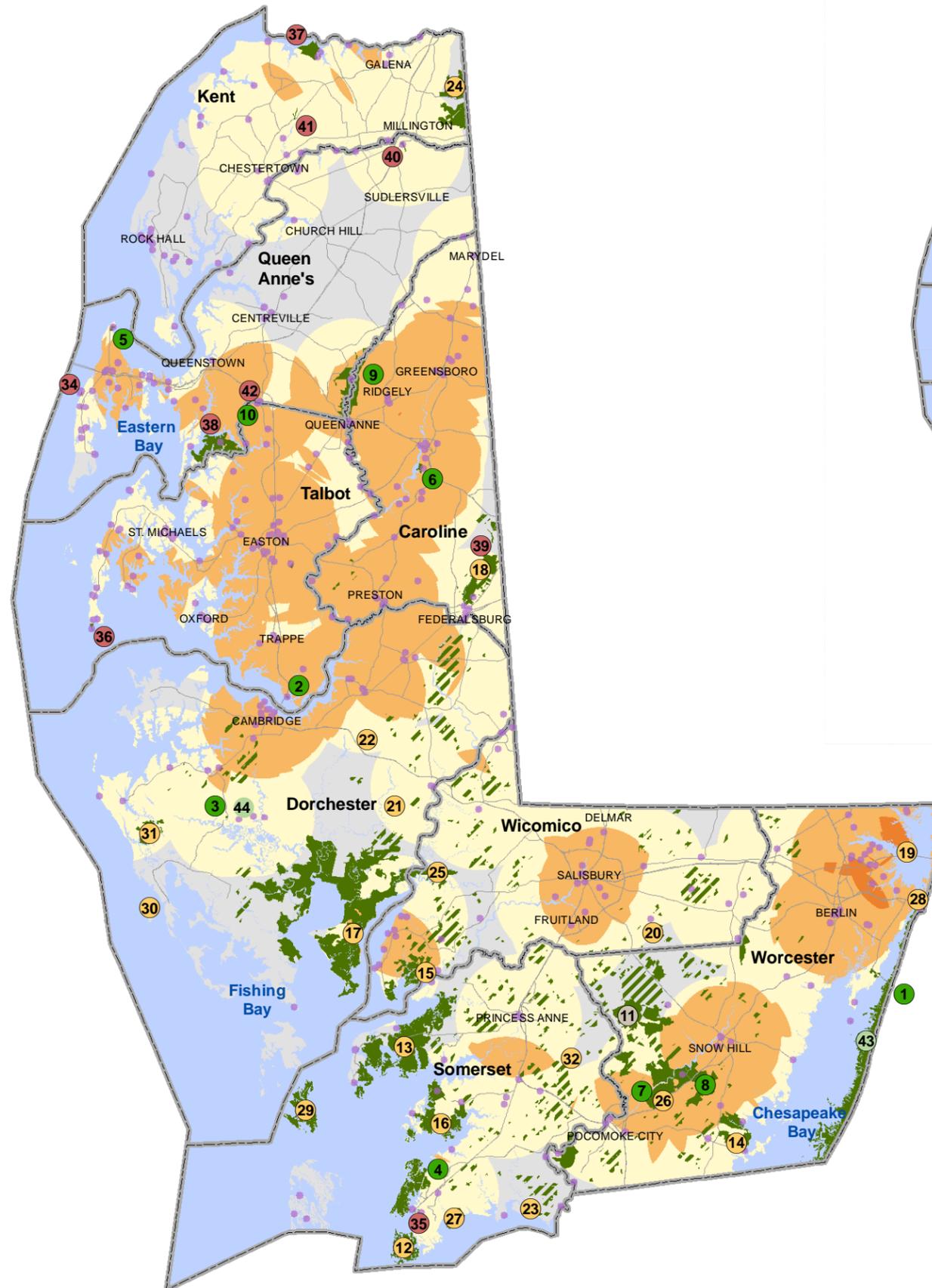
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

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

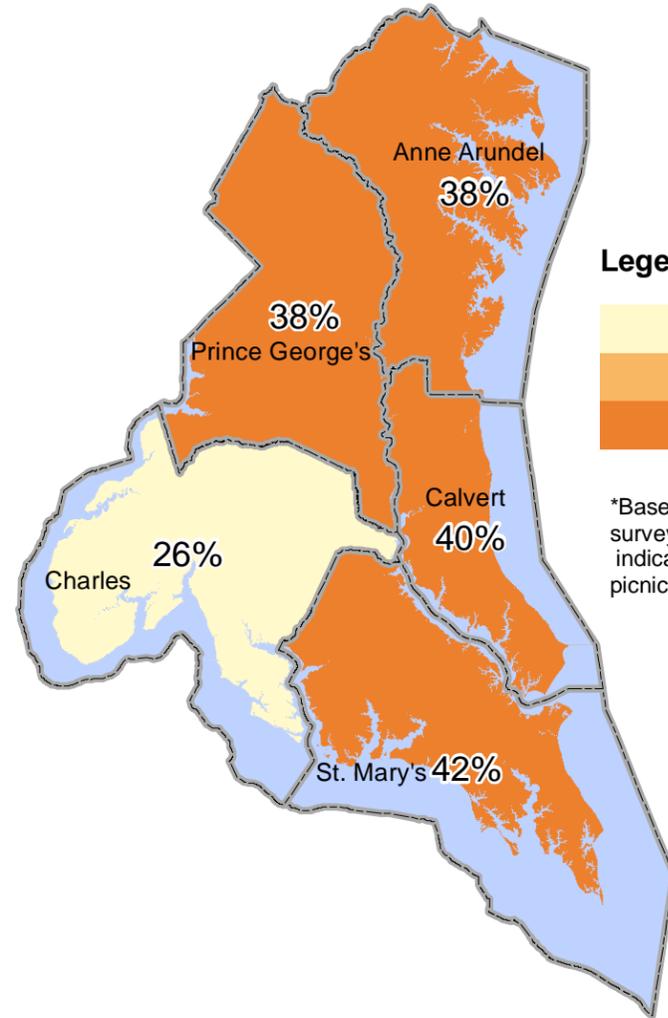
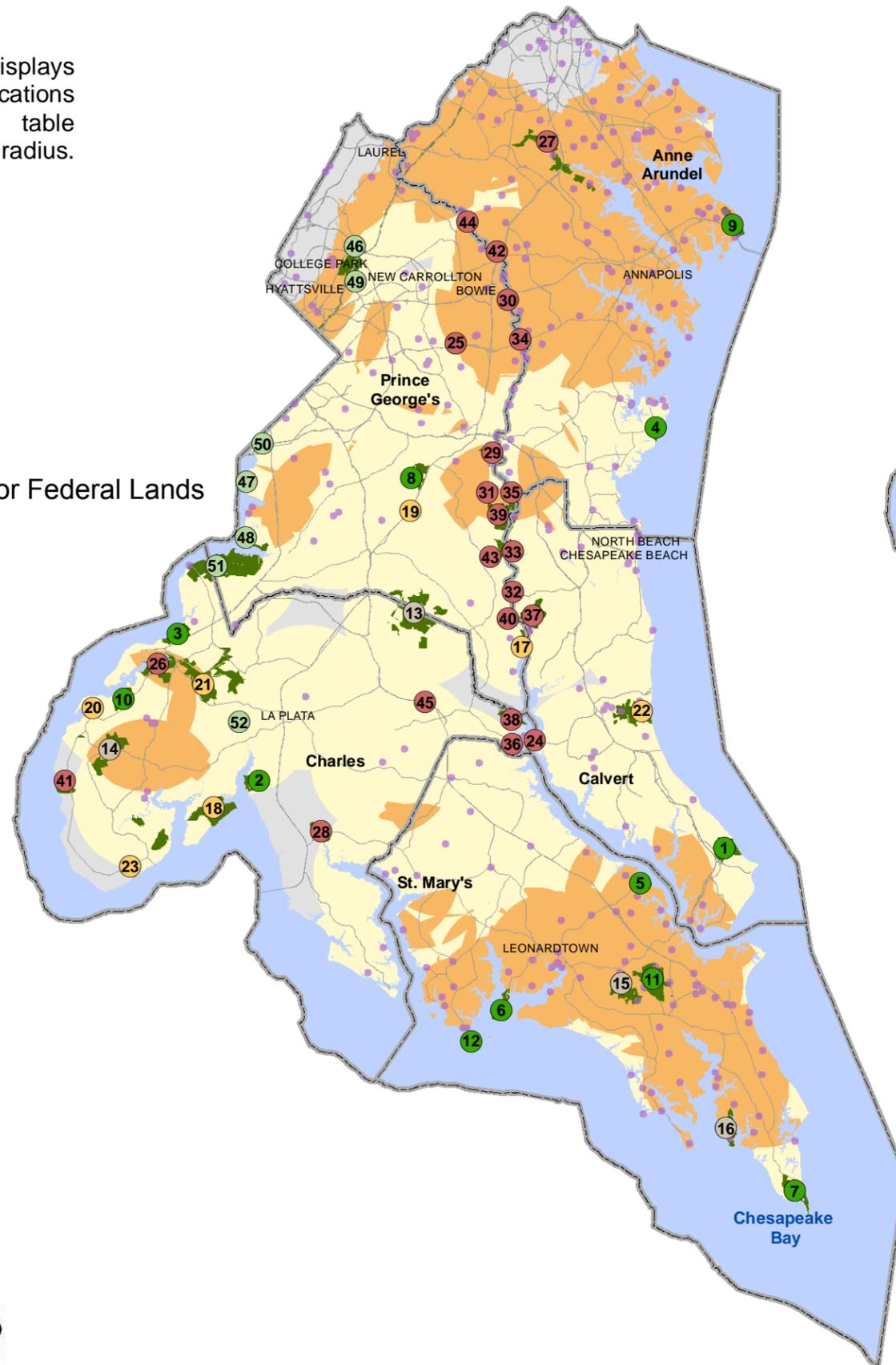
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

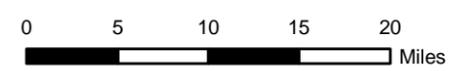
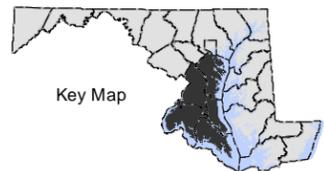
- Lower Participation
-
- Higher Participation

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

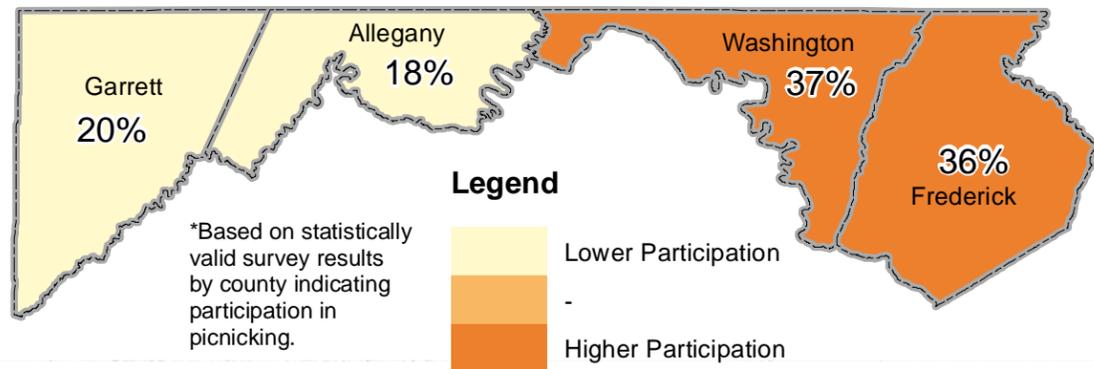
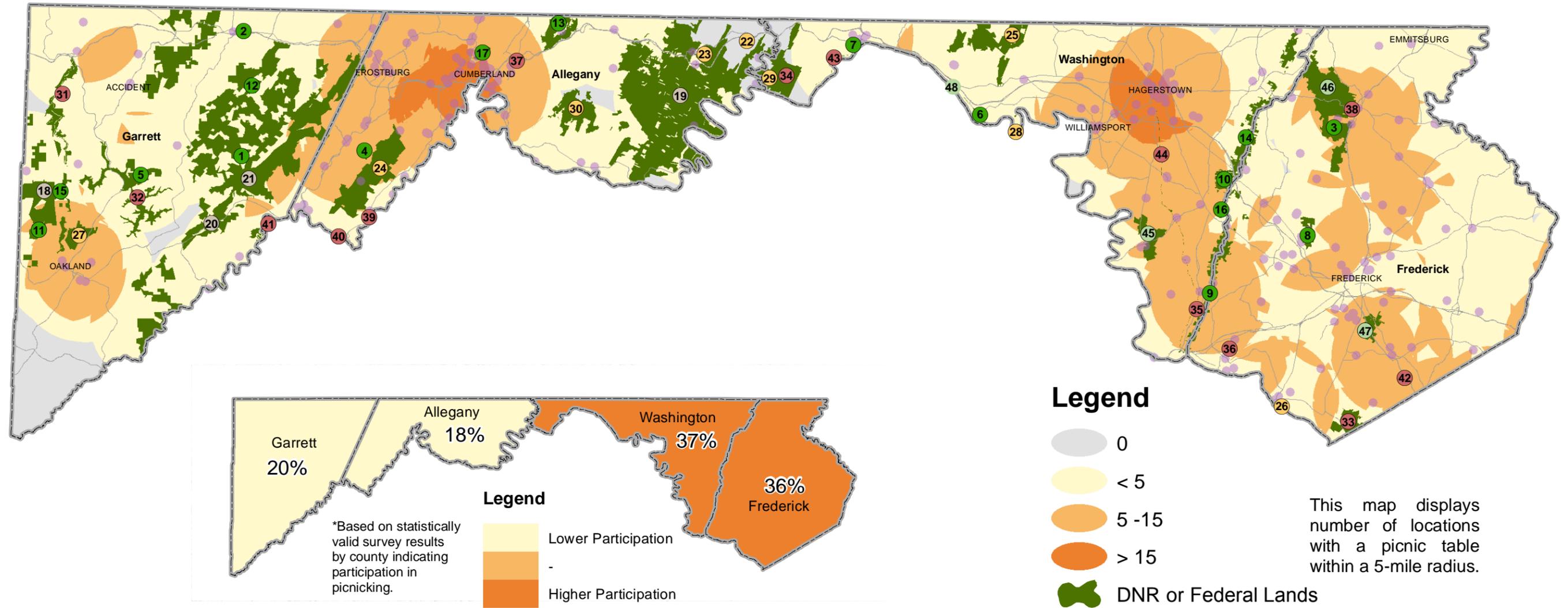
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

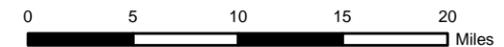
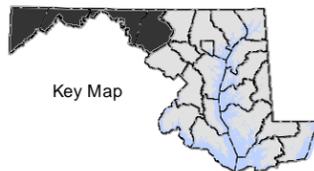
- 45 **ANTIETAM NATIONAL BATTLEFIELD**
- 46 **CATOCTIN MOUNTAIN PARK**
- 47 **MONOCACY NATIONAL BATTLEFIELD**
- 48 **CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK**

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*

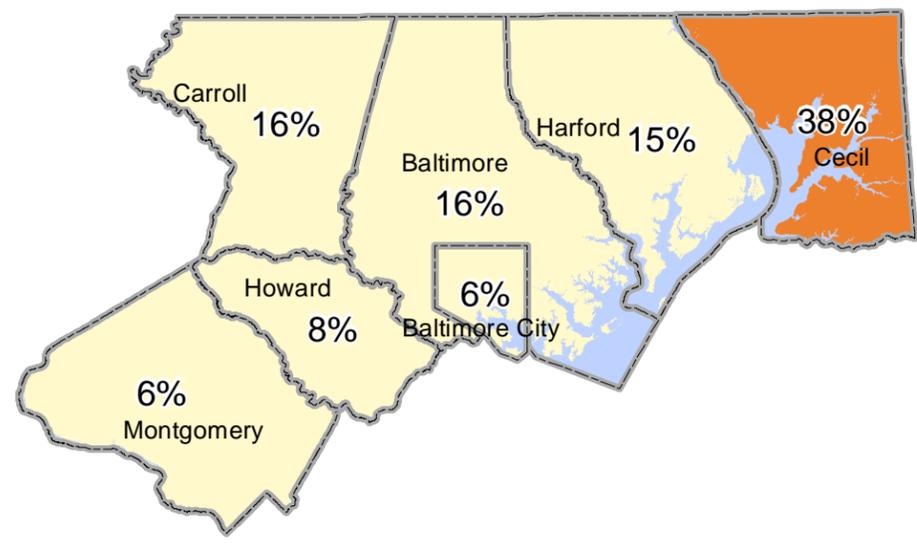
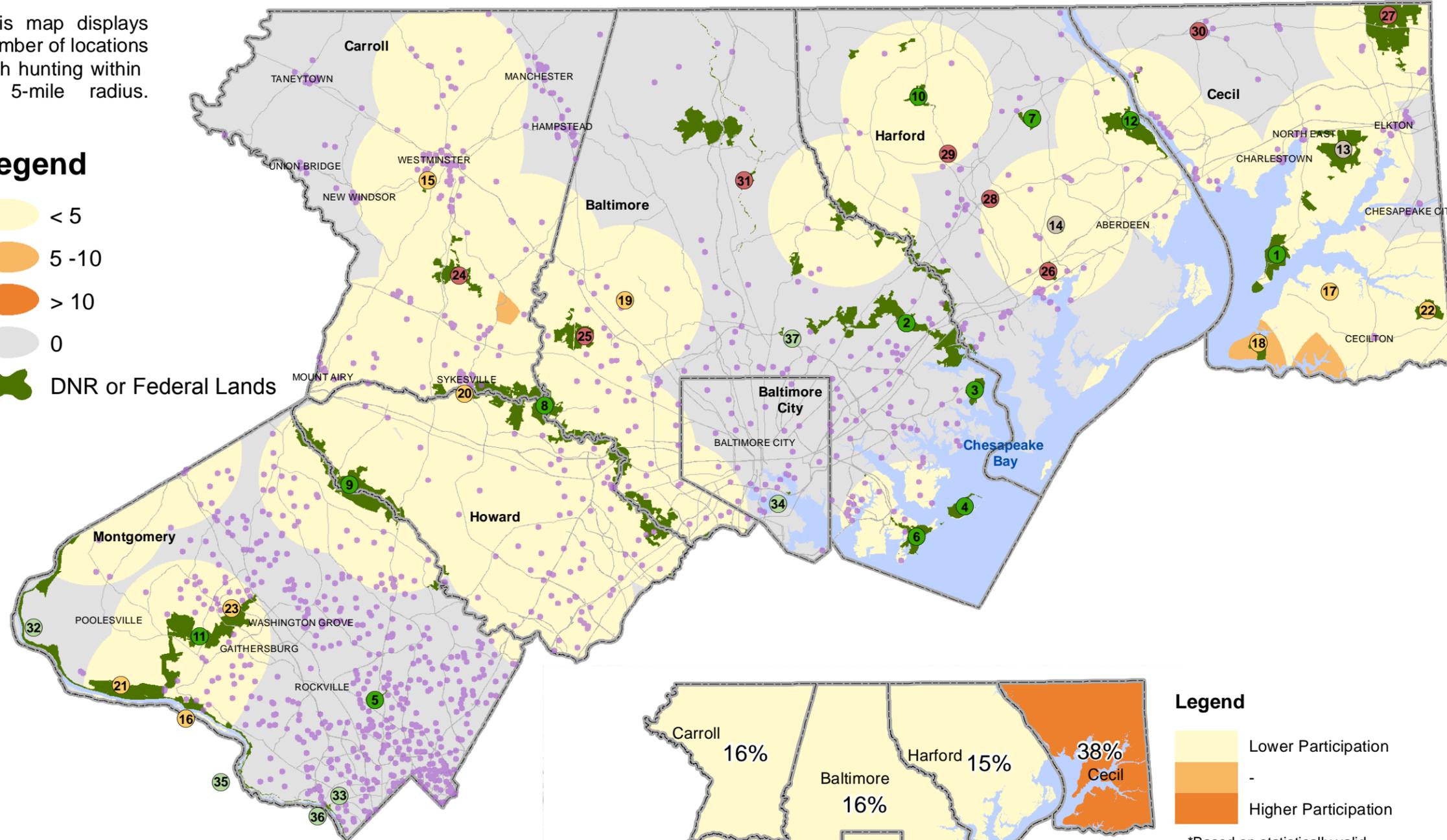
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Map 1D: 5-Mile Proximity to Hunting - Central Region

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

Legend

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



Legend

- Lower Participation
-
- Higher Participation

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

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

State Parks

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

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

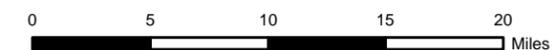
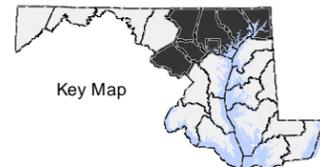
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

• County/ Baltimore City Properties

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

Acronym Key

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



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

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

State Parks

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

State Forests

- 11 **POCOMOKE RIVER SF**

Wildlife Management Areas

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

Other DNR Assets

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

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

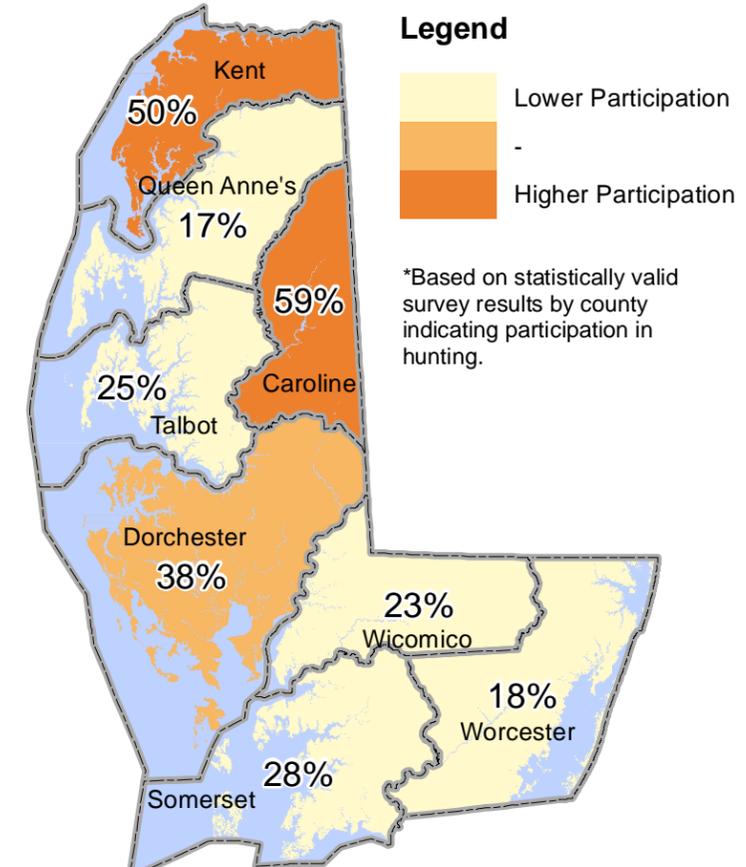
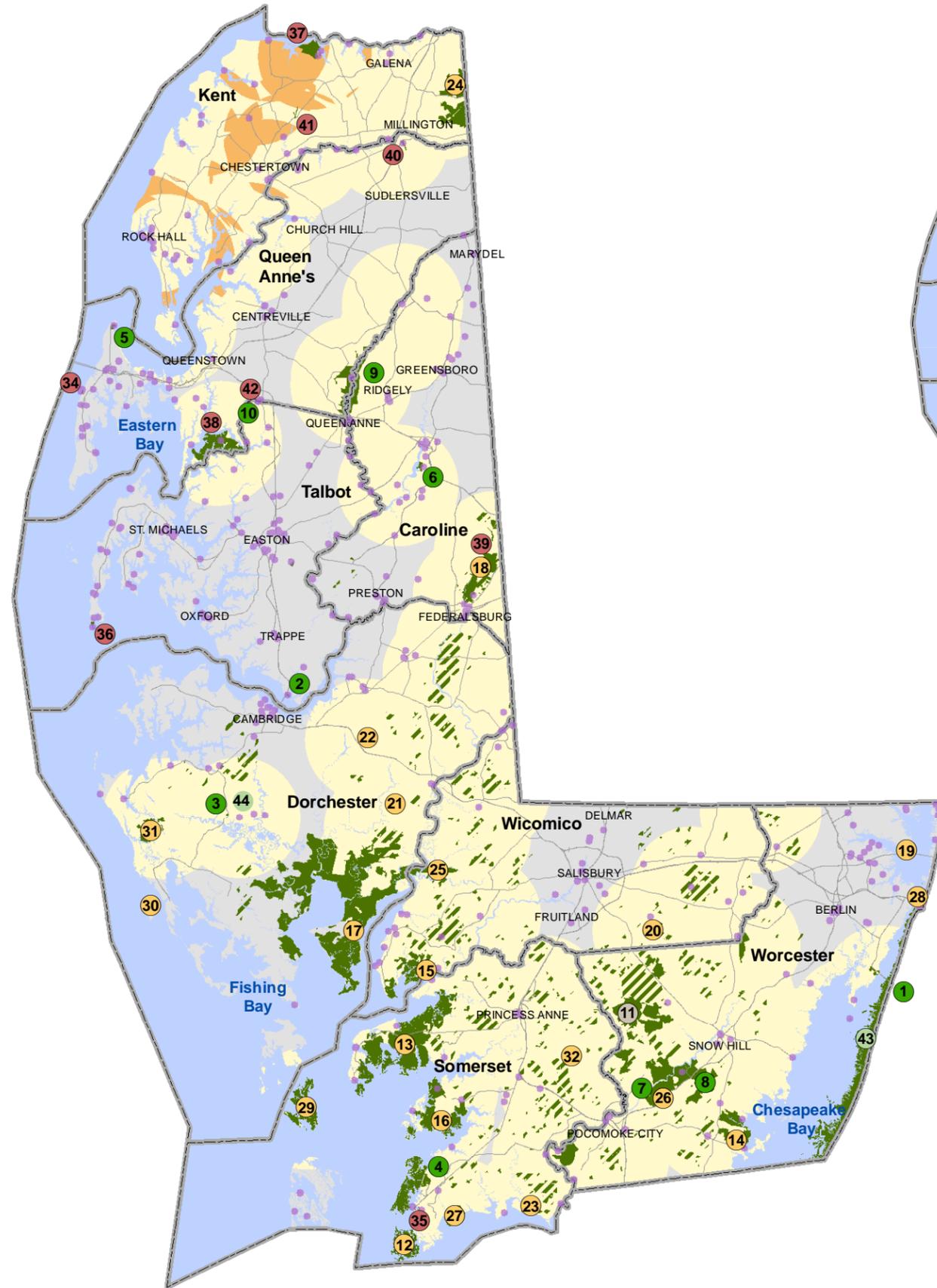
- 43 **ASSATEAGUE ISLAND NATIONAL SEASHORE**
- 44 **BLACKWATER NATIONAL WILDLIFE REFUGE**

County Properties

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

Legend

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



Legend

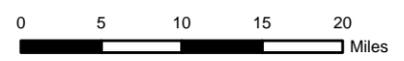
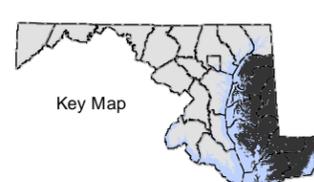
- Lower Participation
-
- Higher Participation

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

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

Acronym Key

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



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

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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

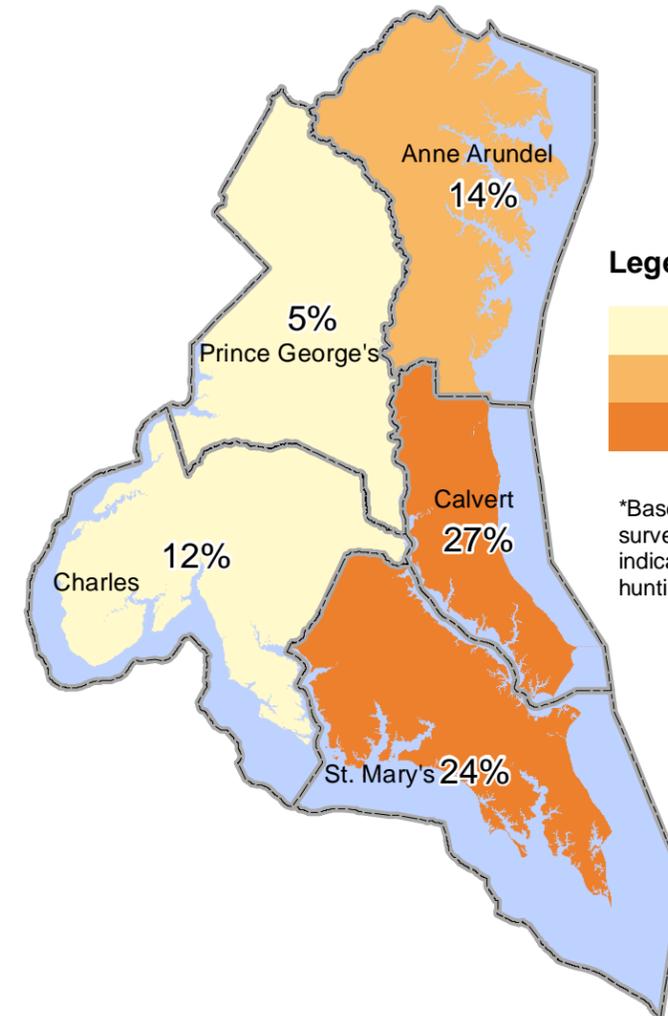
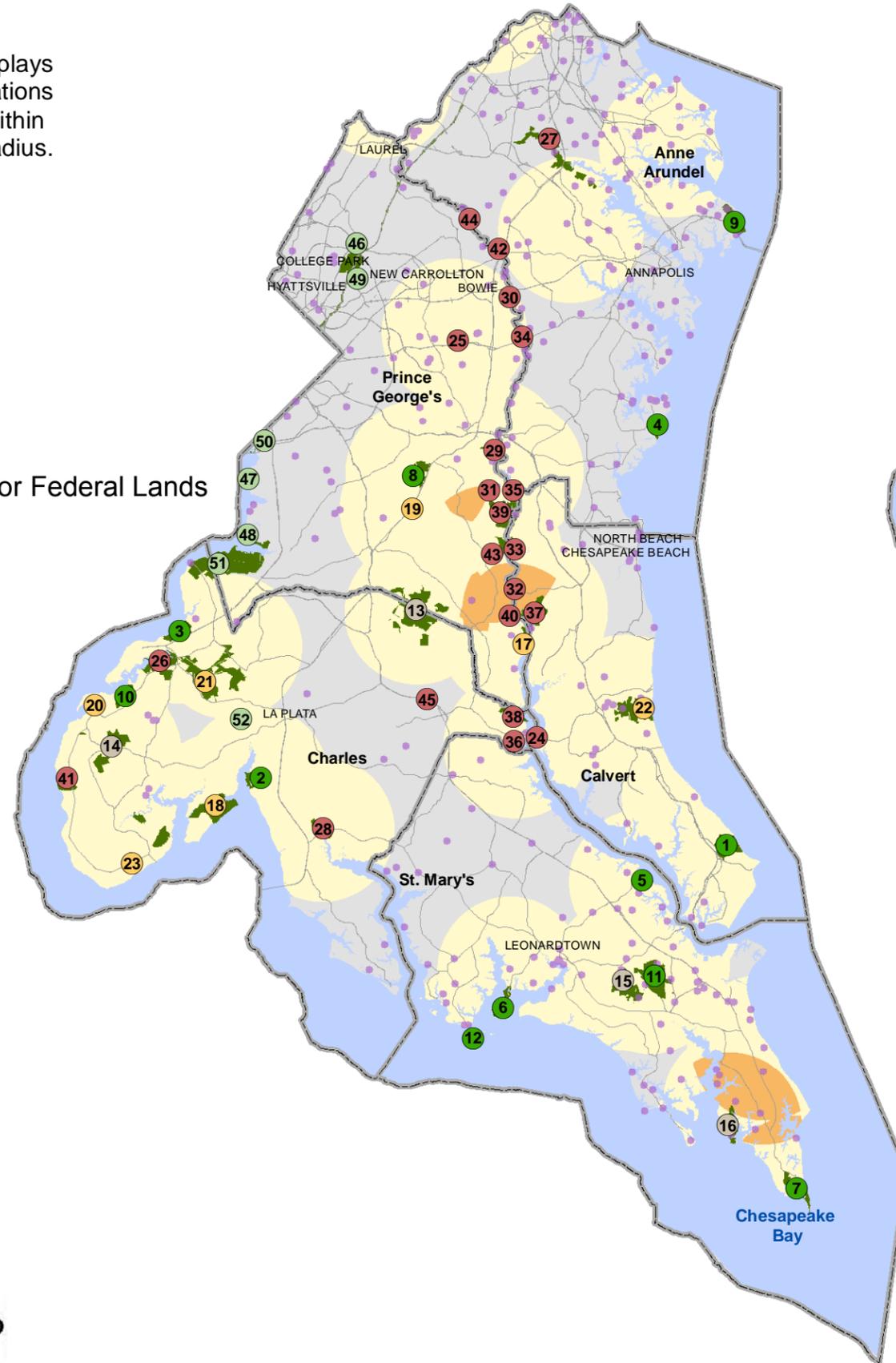
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

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

Legend

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



Legend

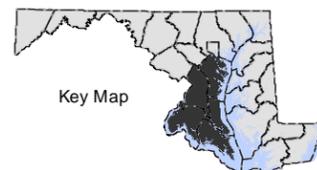
- Lower Participation
-
- Higher Participation

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

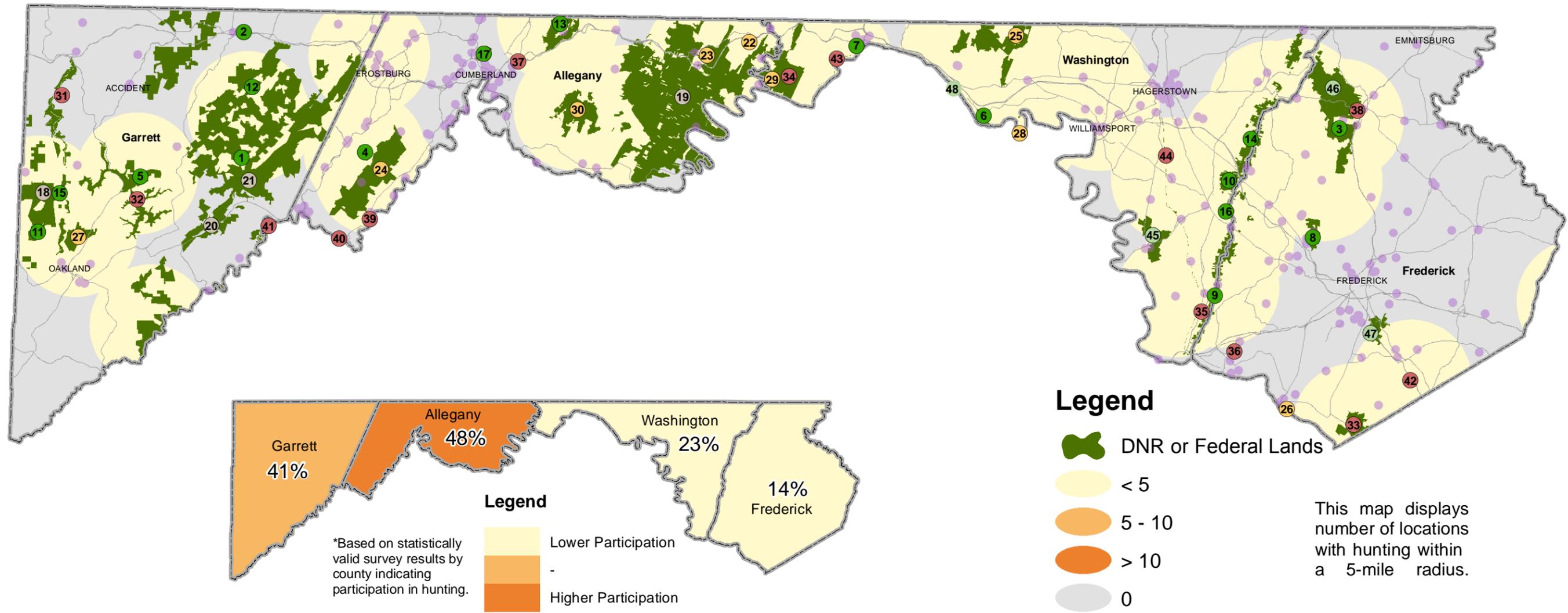
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

Acronym Key

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



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



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

State Parks

- BIG RUN SP
- CASSELMAN BRIDGE SP
- CUNNINGHAM FALLS SP
- DANS MOUNTAIN SP**
- DEEP CREEK LAKE SP**
- FORT FREDERICK SP
- FORT TONOLOWAY SP
- GAMBRILL SP
- GATHLAND SP
- GREENBRIER SP**
- HERRINGTON MANOR SP
- NEW GERMANY SP
- ROCKY GAP SP**
- SOUTH MOUNTAIN SP**
- SWALLOW FALLS SP
- WASHINGTON MONUMENT SP
- WILLS MOUNTAIN SP

State Forests

- GARRETT SF**
- GREEN RIDGE SF**
- POTOMAC SF**
- SAVAGE RIVER SF**

Wildlife Management Areas

- BELLE GROVE WMA**
- BILLMEYER WMA**
- DANS MOUNTAIN WMA**
- INDIAN SPRINGS WMA**
- ISLANDS OF THE POTOMAC WMA
- MT. NEBO WMA**
- PRATHERS NECK WMA
- SIDELING HILL WMA**
- WARRIOR MOUNTAIN WMA**

Other DNR Assets

- YOUGHIOGHENY RIVER NEA
- DEEP CREEK LAKE NRMA
- MONOCACY NRMA**
- WOODMONT NRMA**
- BROWNSVILLE POND PFA
- BRUNSWICK POND PFA
- EVITTS CREEK POND PFA
- FRANK BENTZ POND PFA
- GARY A YODER PFA
- MCCOOLE PFA
- NORTH BRANCH POTOMAC PFA
- URBANA LAKE PFA**
- WESTERN MARYLAND RAIL TRAIL
- WEVERTON ROXBURY CORRIDOR RAIL TRAIL

Federal Lands

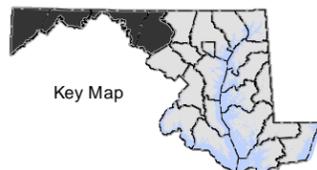
- ANTIETAM NATIONAL BATTLEFIELD
- CATOCTIN MOUNTAIN PARK
- MONOCACY NATIONAL BATTLEFIELD
- CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

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

Acronym Key

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



Analysis E: 5-Mile Proximity to Fishing

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

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

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

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

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

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



The Sun’s Reflection on Life by Dan Shannon

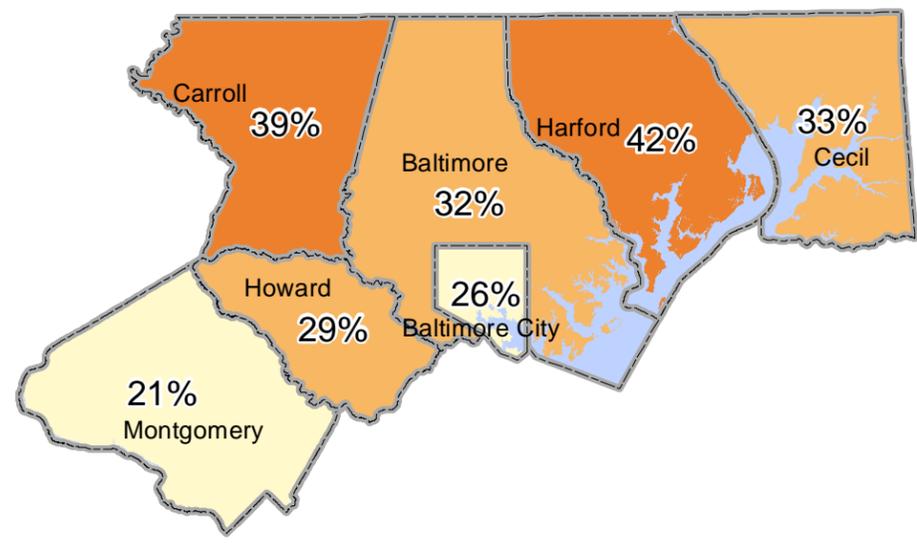
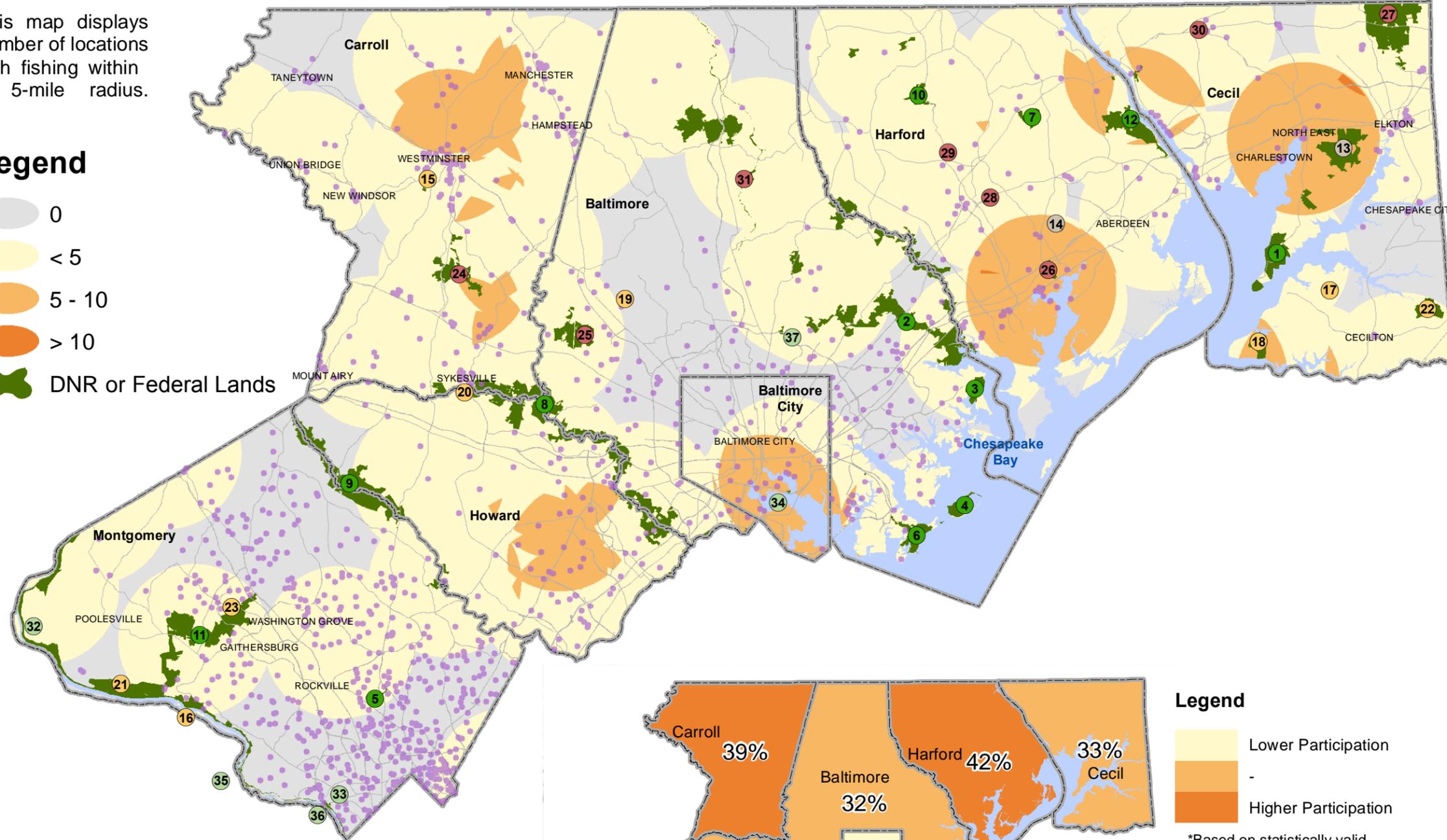
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Map 1E: 5-Mile Proximity to Fishing - Central Region

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

Legend

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



Legend

- Lower Participation
-
- Higher Participation

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

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

State Parks

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

State Forests

- 13 ELK NECK SF
- 14 STONEY DEMONSTRATION SF

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

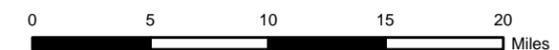
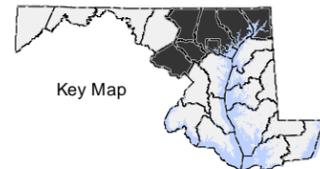
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

• County/ Baltimore City Properties

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

Acronym Key

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



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

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

State Parks

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

State Forests

- 11 POCOMOKE RIVER SF

Wildlife Management Areas

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

Other DNR Assets

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

*CHESAPEAKE FOREST LANDS INDICATED BY HATCH

Federal Lands

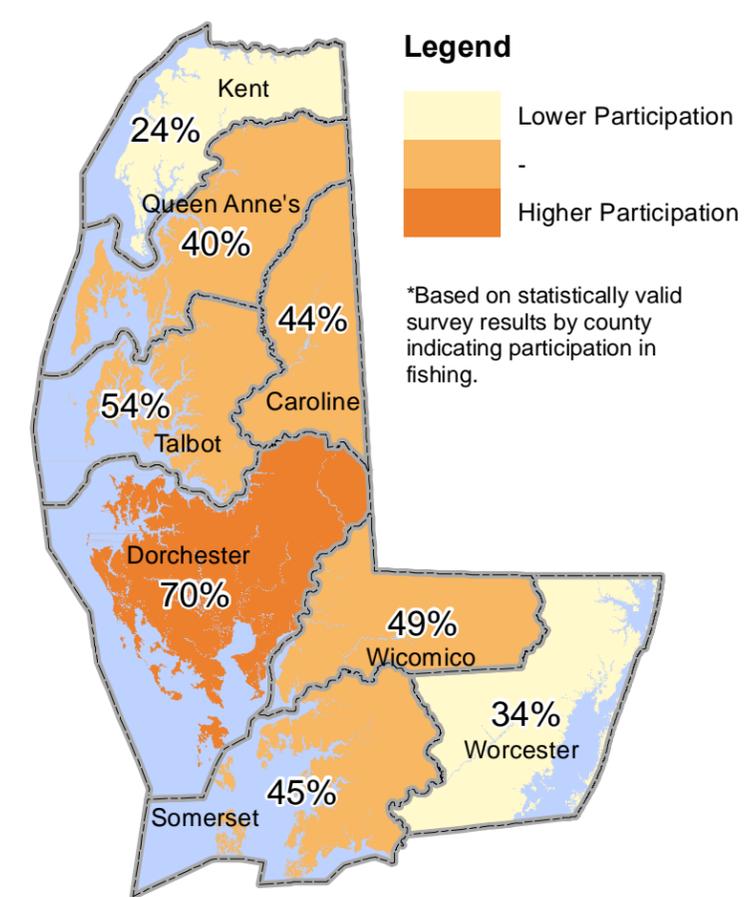
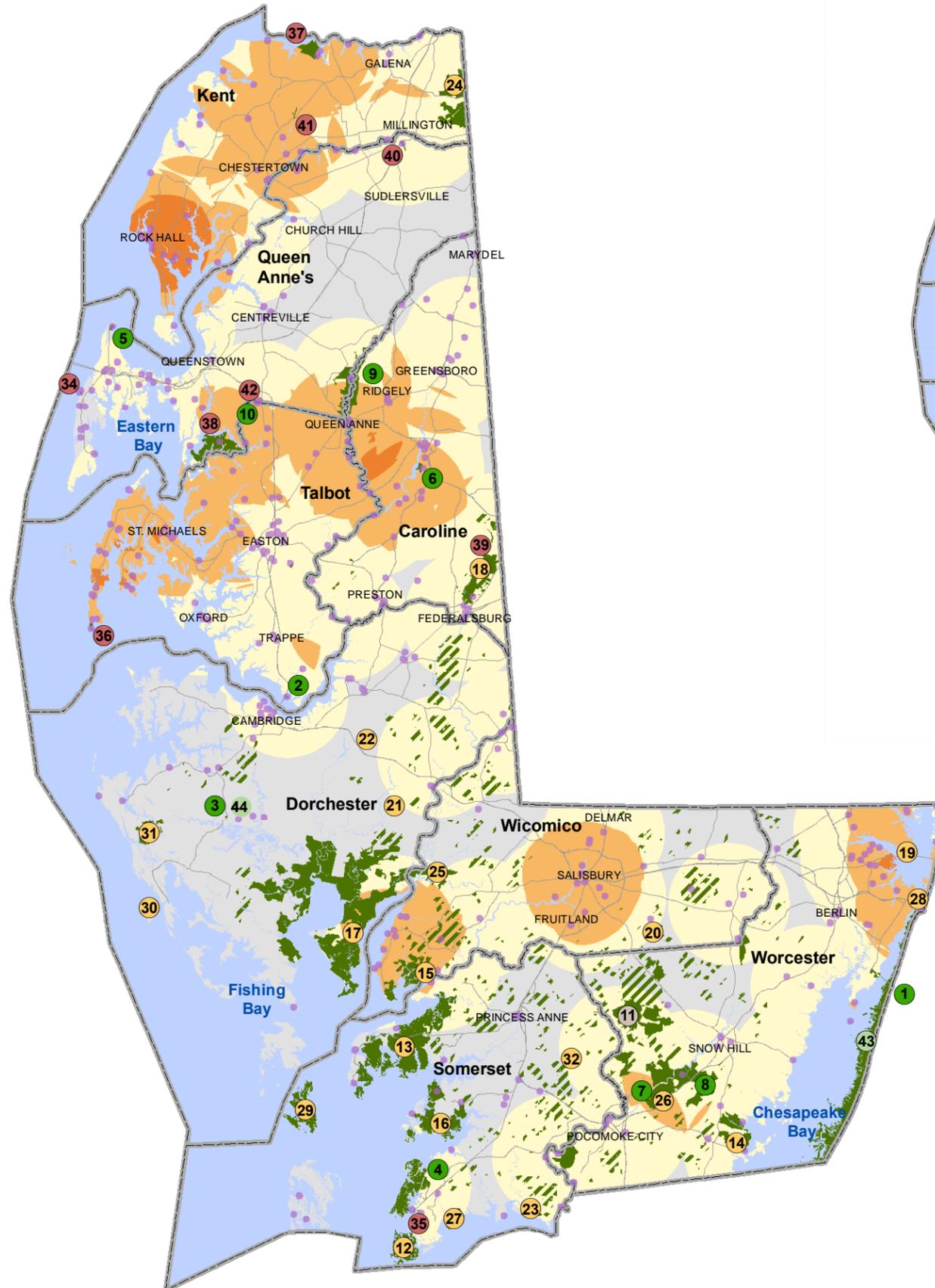
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

County Properties

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

Legend

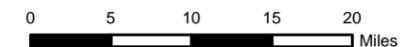
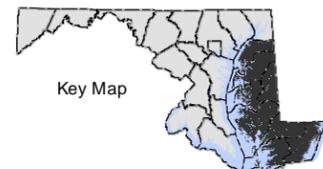
- 0
- < 5
- 5 - 10
- > 10
- DNR or Federal Lands



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

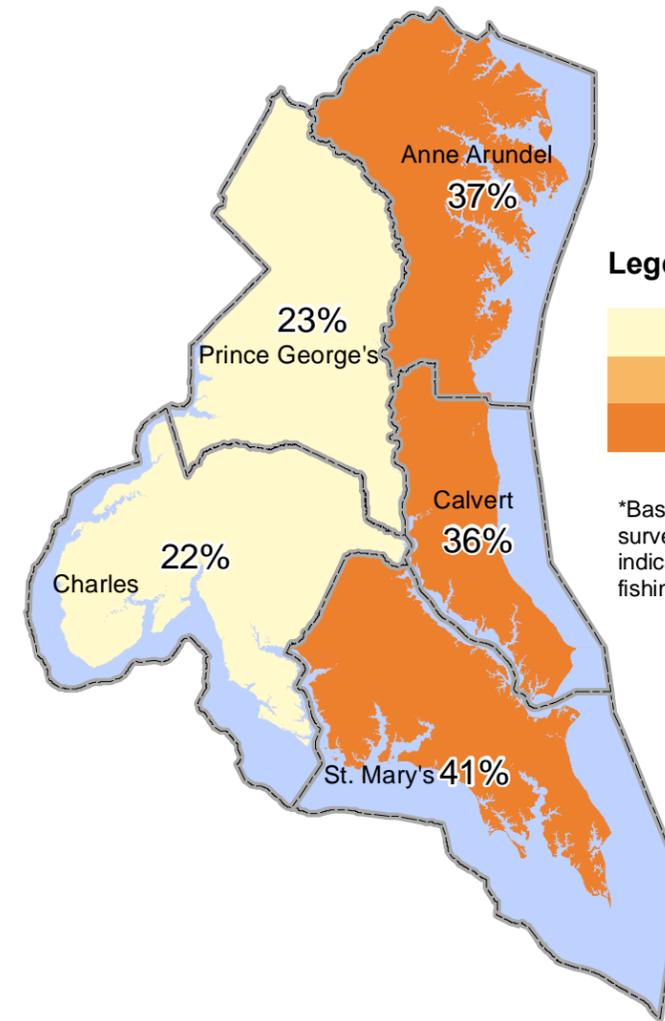
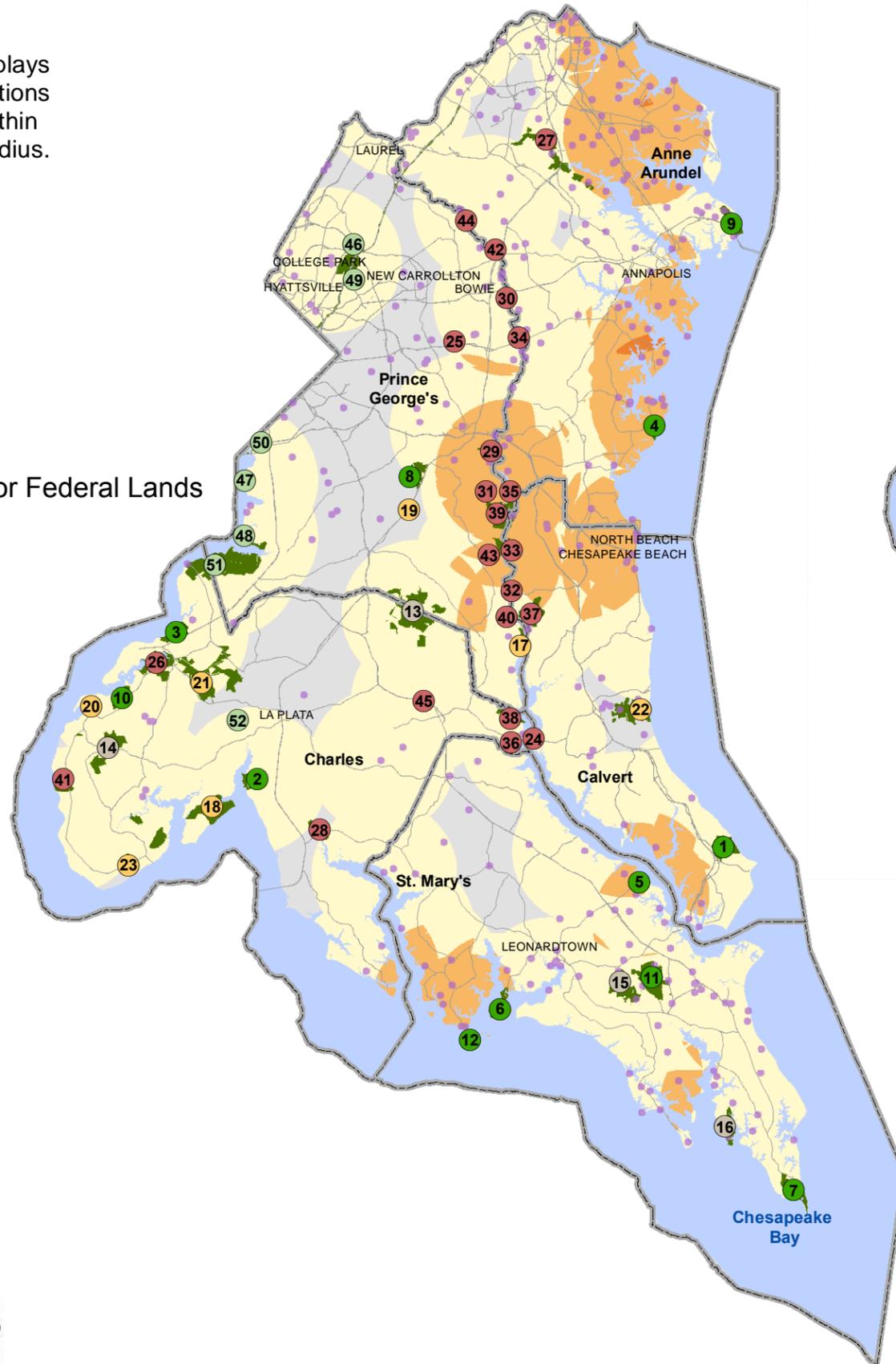
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

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

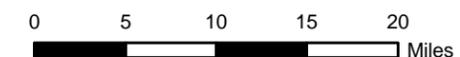
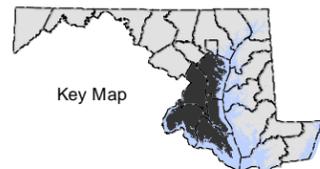
- Lower Participation
- Higher Participation

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

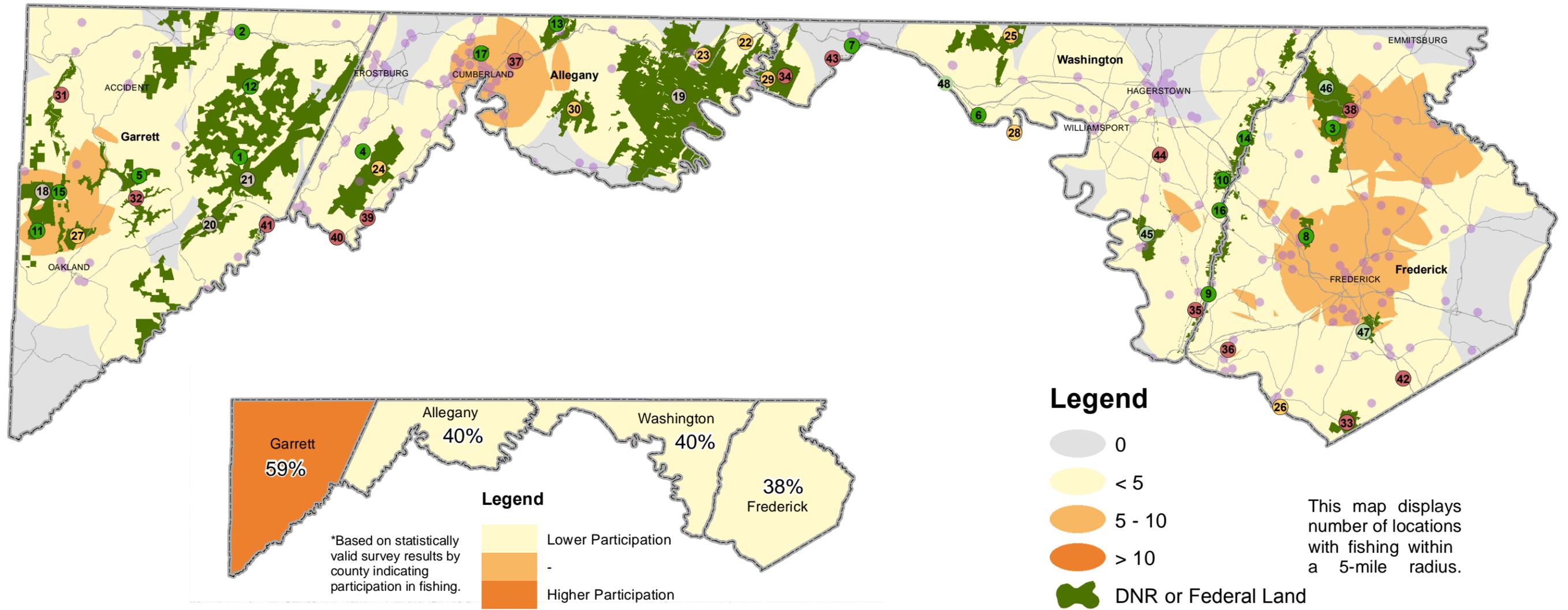
Note: A list of county sites included in each analysis is available upon request from the Stewardship Team of the Land Acquisition and Planning Unit at the Maryland Department of Natural Resources. For local parks and recreation inventories, please consult the Local Preservation, Parks, and Recreation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

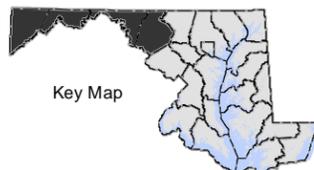
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

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.

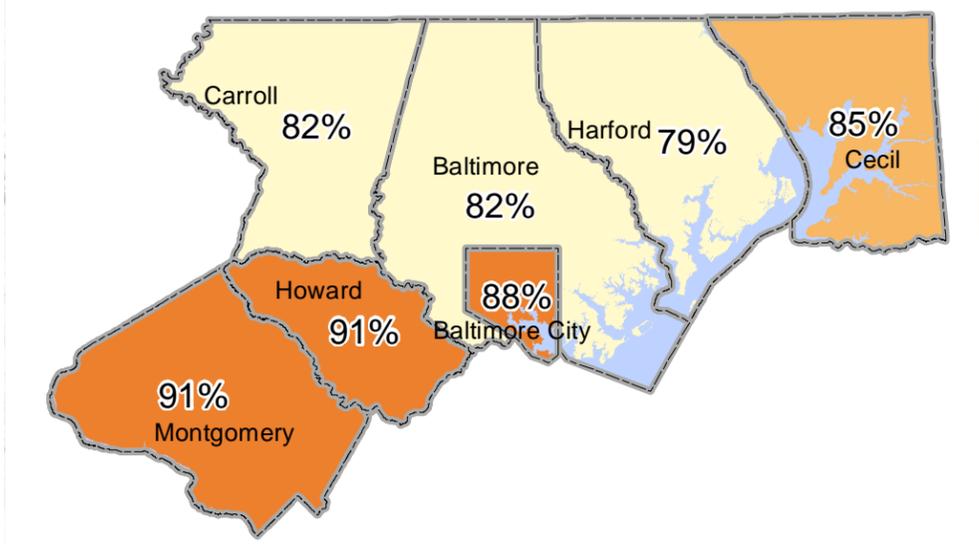
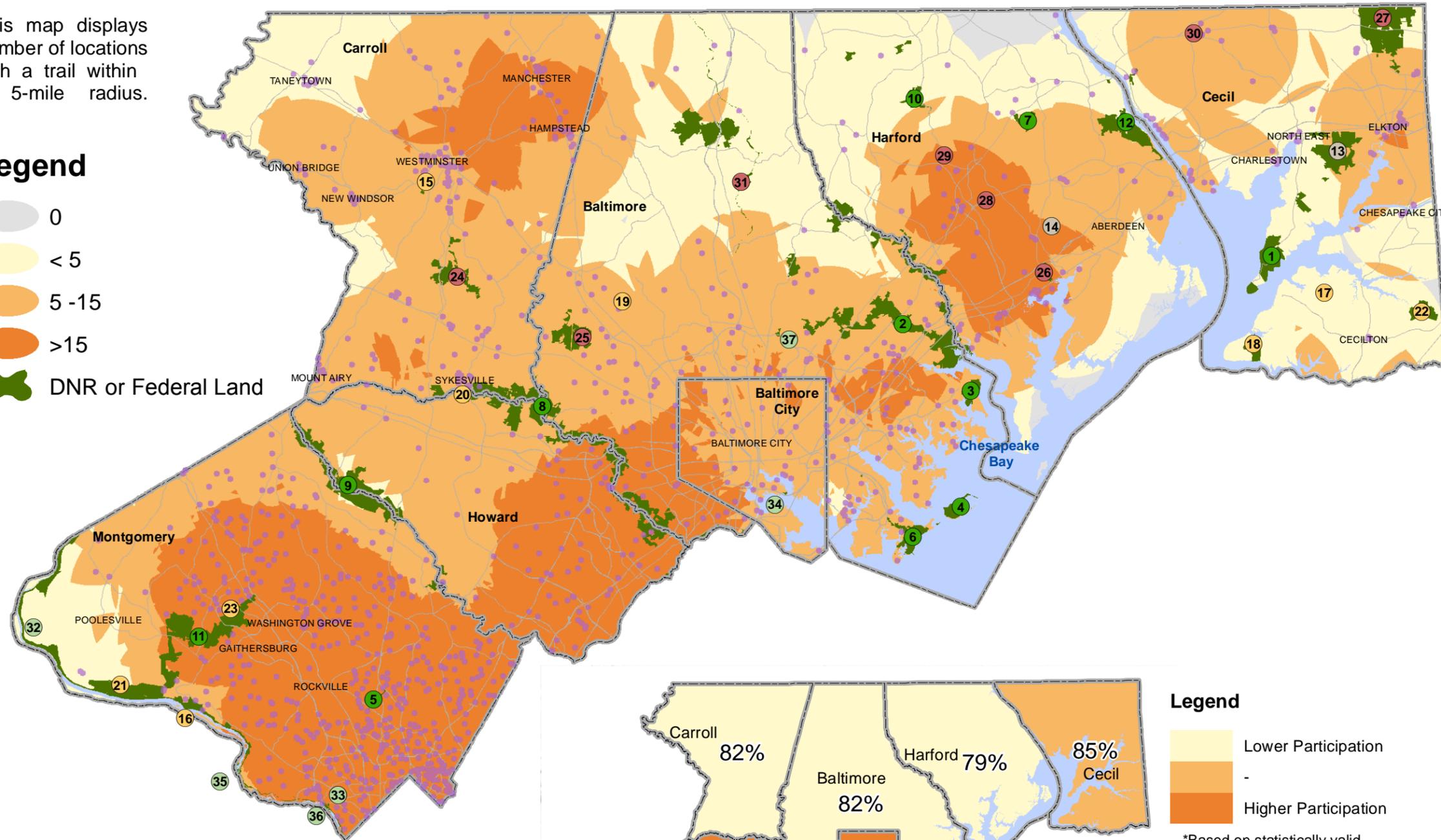


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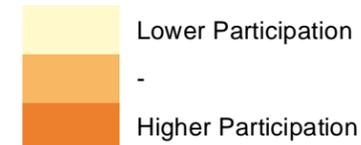
Map 1F: 5-Mile Proximity to Trails - Central Region

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

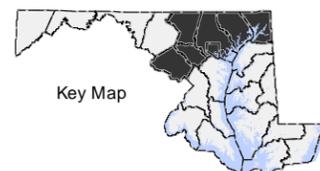
- 32 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK
- 33 CLARA BARTON NATIONAL HISTORIC SITE
- 34 FORT MCHENRY NATIONAL MONUMENT AND HISTORIC SHRINE
- 35 GEORGE WASHINGTON MEMORIAL PARKWAY
- 36 GLEN ECHO PARK
- 37 HAMPTON NATIONAL HISTORIC SITE

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

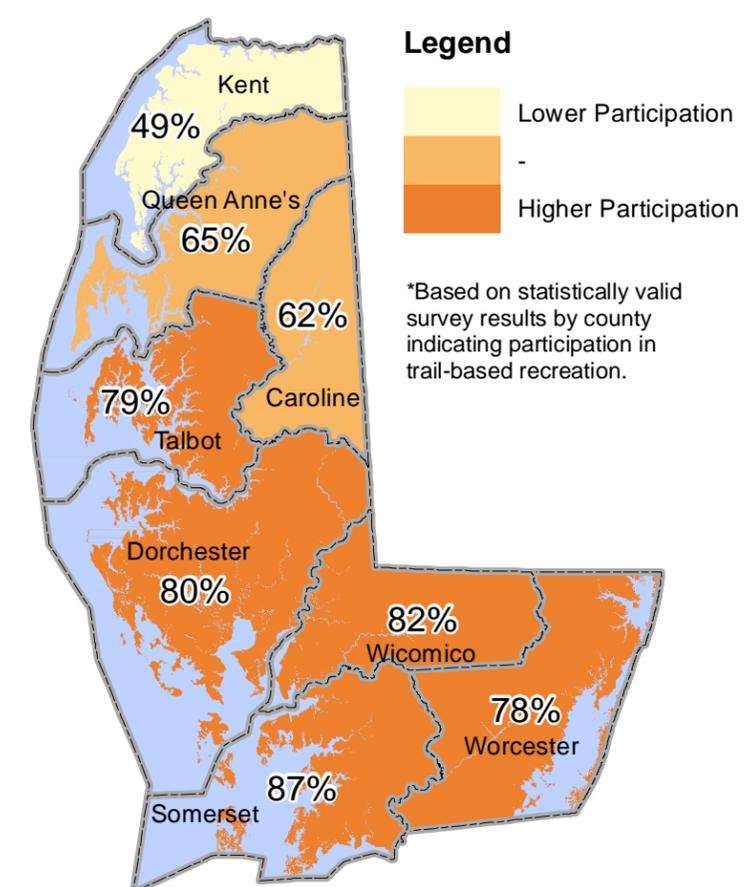
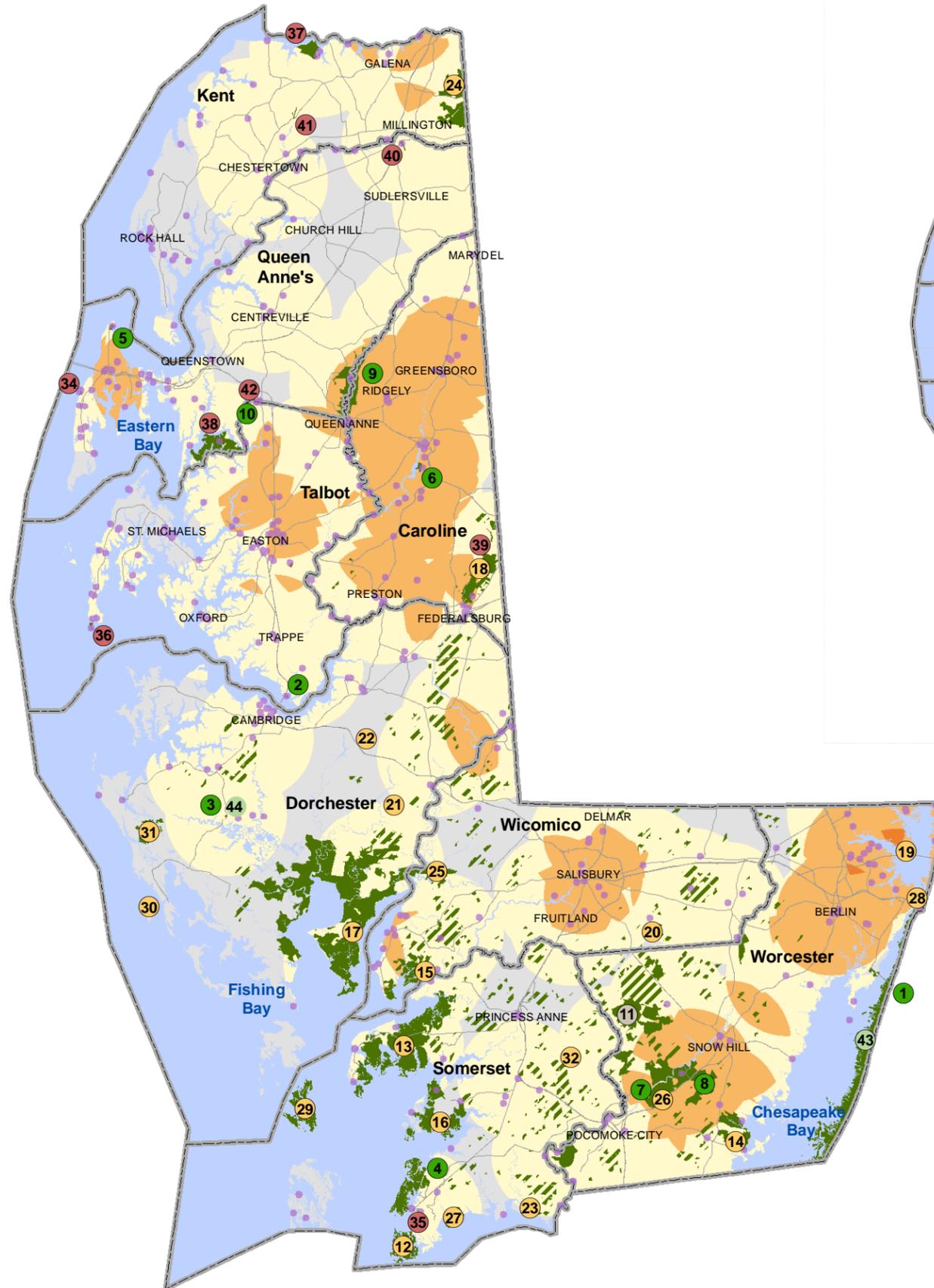
- 43 ASSATEAGUE ISLAND NATIONAL SEASHORE
- 44 BLACKWATER NATIONAL WILDLIFE REFUGE

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

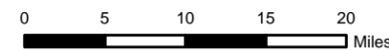
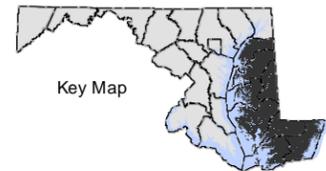
- Lower Participation
-
- Higher Participation

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



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

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

State Parks

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

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

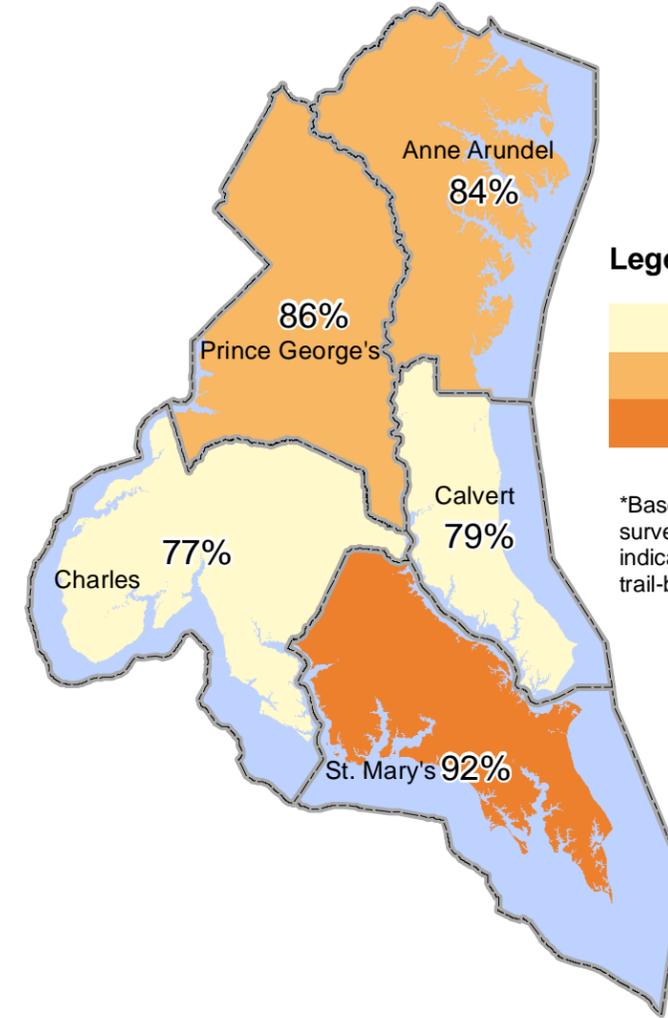
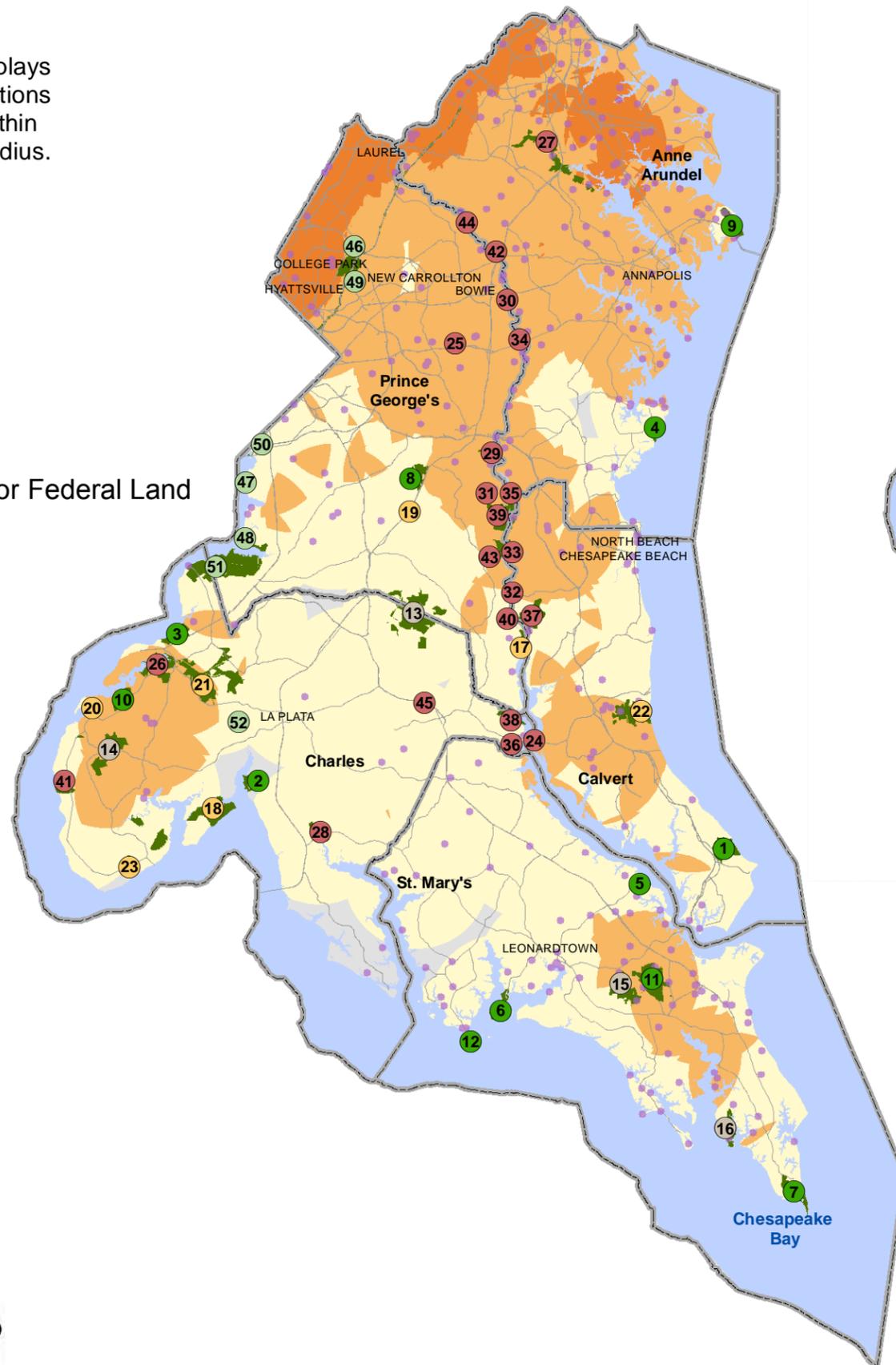
- 46 BALTIMORE-WASHINGTON PARKWAY
- 47 FORT FOOTE PARK
- 48 FORT WASHINGTON PARK
- 49 GREENBELT PARK
- 50 OXON COVE PARK AND OXON HILL FARM
- 51 PISCATAWAY PARK
- 52 THOMAS STONE NATIONAL HISTORIC SITE

County Properties

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

Legend

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



Legend

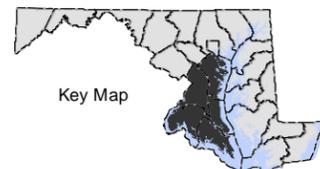
- Lower Participation
-
- Higher Participation

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

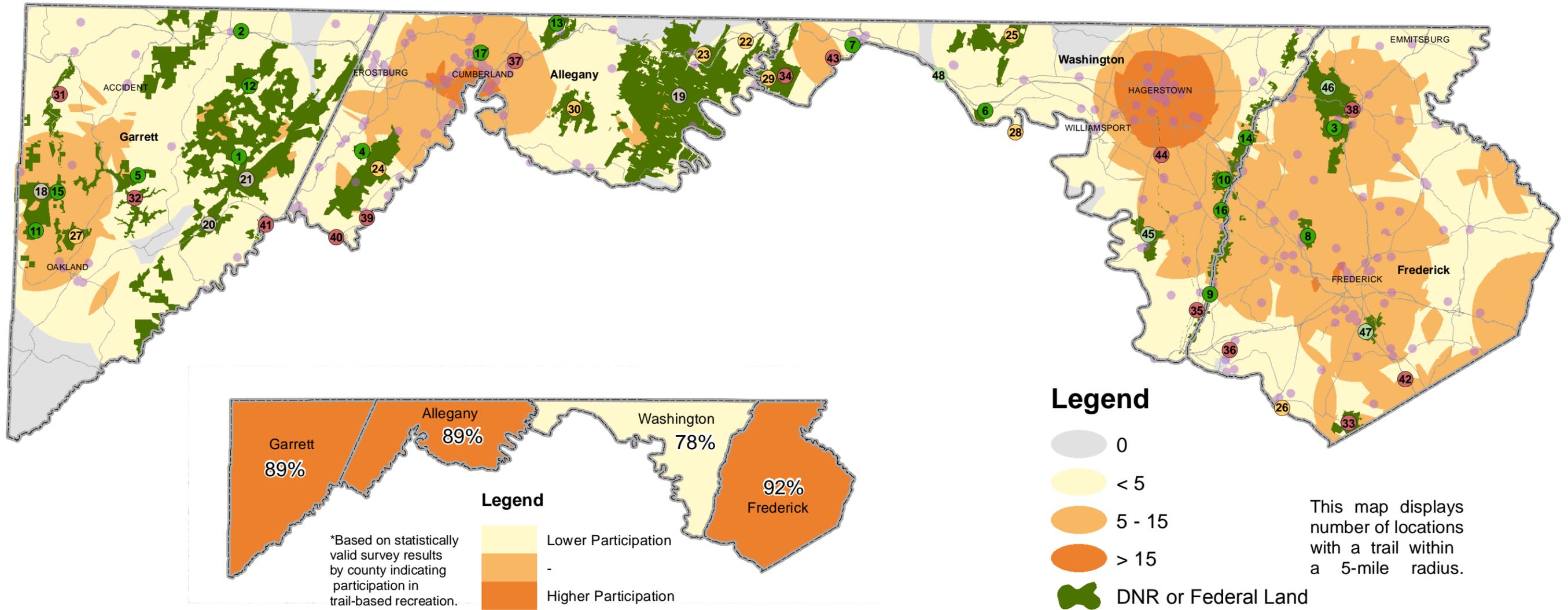
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Acronym Key

- SP State Park
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- 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 GAMBRIEL SP
- 9 GATHLAND SP
- 10 GREENBRIER SP
- 11 HERRINGTON MANOR SP
- 12 NEW GERMANY SP
- 13 ROCKY GAP SP
- 14 SOUTH MOUNTAIN SP
- 15 SWALLOW FALLS SP
- 16 WASHINGTON MONUMENT SP
- 17 WILLS MOUNTAIN SP

State Forests

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

Wildlife Management Areas

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

Other DNR Assets

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

Federal Lands

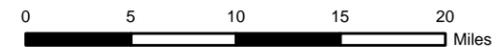
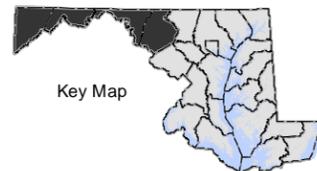
- 45 ANTIETAM NATIONAL BATTLEFIELD
- 46 CATOCTIN MOUNTAIN PARK
- 47 MONOCACY NATIONAL BATTLEFIELD
- 48 CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK

County Properties

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

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

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

D. TRENDS IMPACTING OUTDOOR RECREATION IN MARYLAND

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

Physical Activity Council’s 2018 Participation Report

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

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

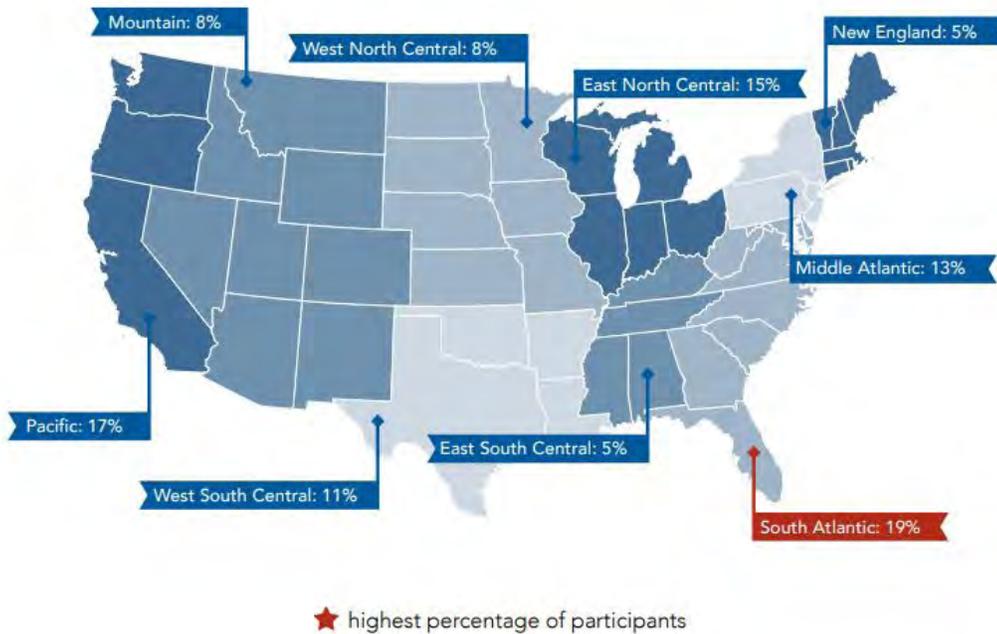
Physical Activity Council
2018 Participation Report

III. RESEARCH AND TRENDS

Figure 26: Activity Participation by Age

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

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



According to the 2018 “Participation Report”⁵⁶:

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

Outdoor Industry Association 2017 Outdoor Participation Report

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

TOP FIVE ACTIVITY PREFERENCES

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

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

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

- About ½ of Americans are moderately active outdoors, getting outside anywhere between 12 and 103 times annually.
- The most popular activities by rate and frequency of participation are primarily trail or water-based and consisted of:
 - 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

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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.



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- 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

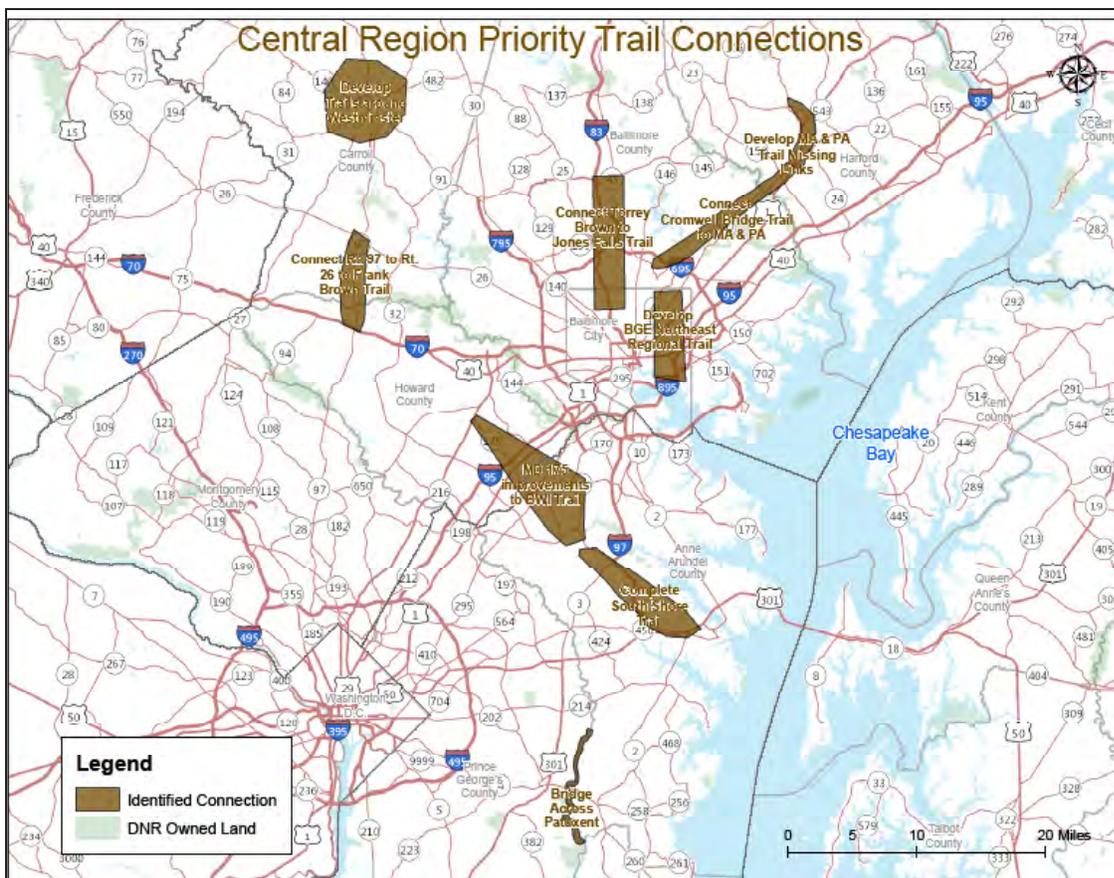
In the five years since the previous 2014 Land Preservation and Recreation Plan, a number of accomplishments related to creating a statewide trail network have been completed. Although certainly not an exhaustive list, the following are some of those accomplishments:

- 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

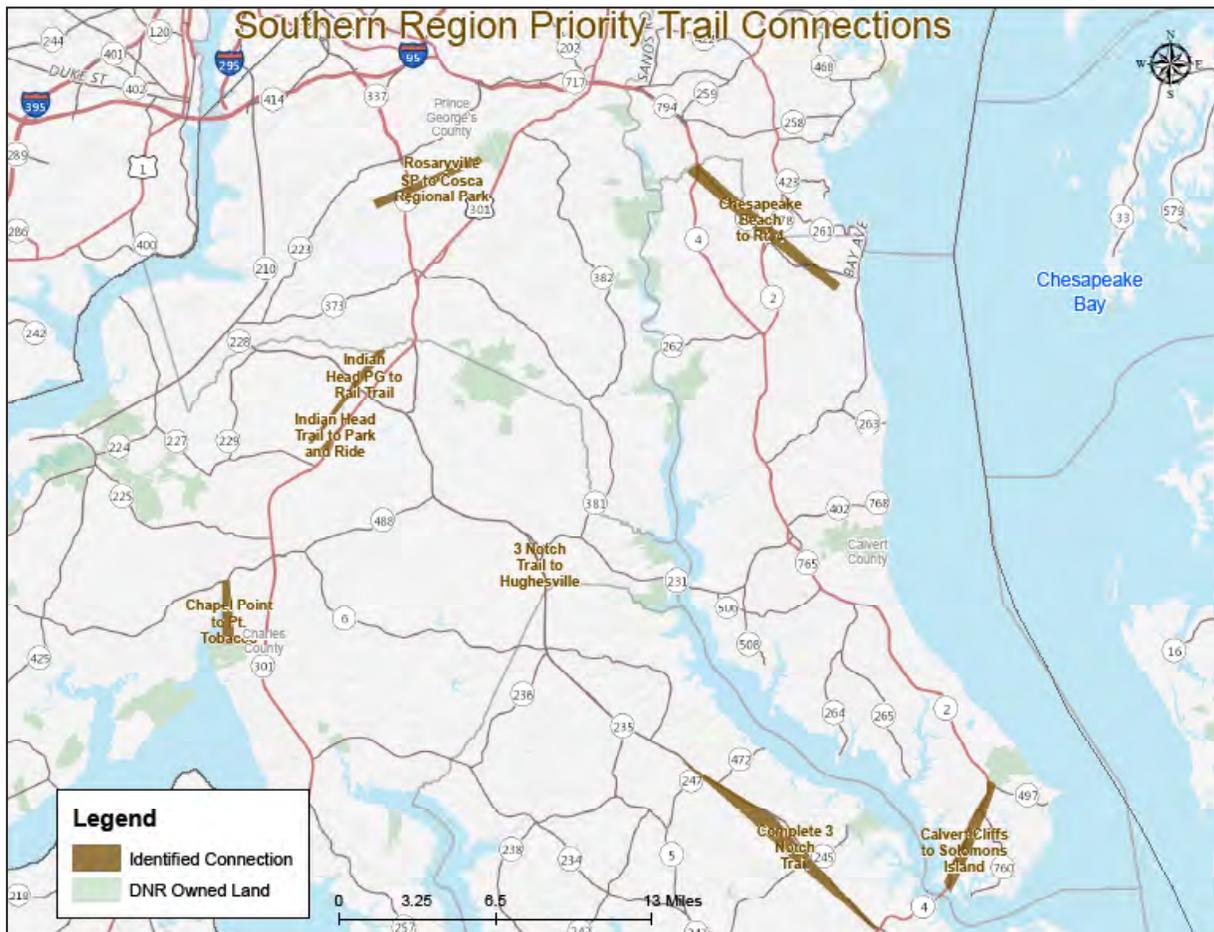
1. Connect the Torrey C. Brown Trail to Baltimore City
2. Connect Anne Arundel and Prince George’s counties with a bridge across the Patuxent River
3. Connect Patapsco State Park Trail system to Ellicott City and Baltimore City
4. Connect Route 97 to Route 26, and then to the Governor Frank Brown Trail
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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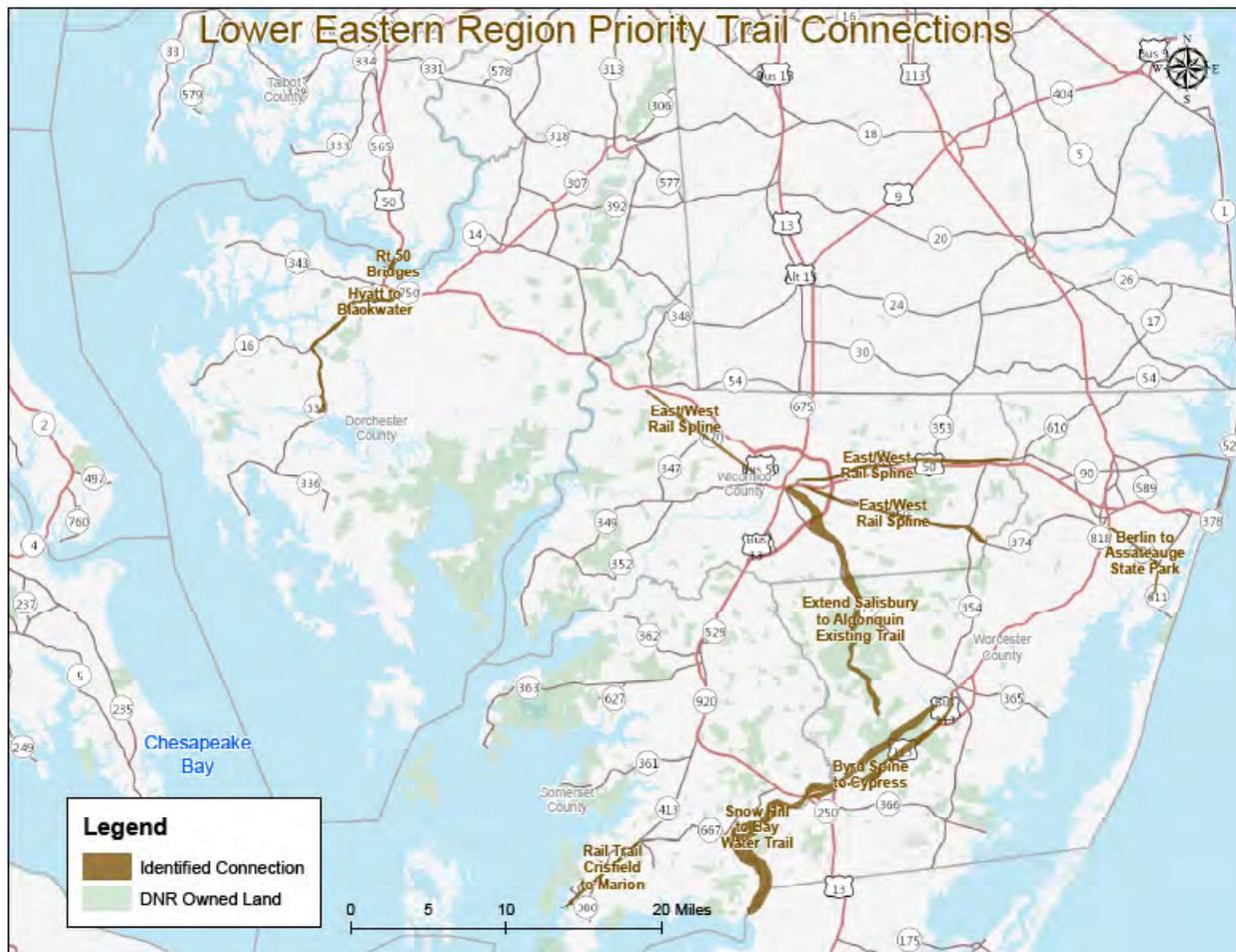
Southern Region Priority Trail Connections

1. Extend 3 Notch Trail into Hughsville
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

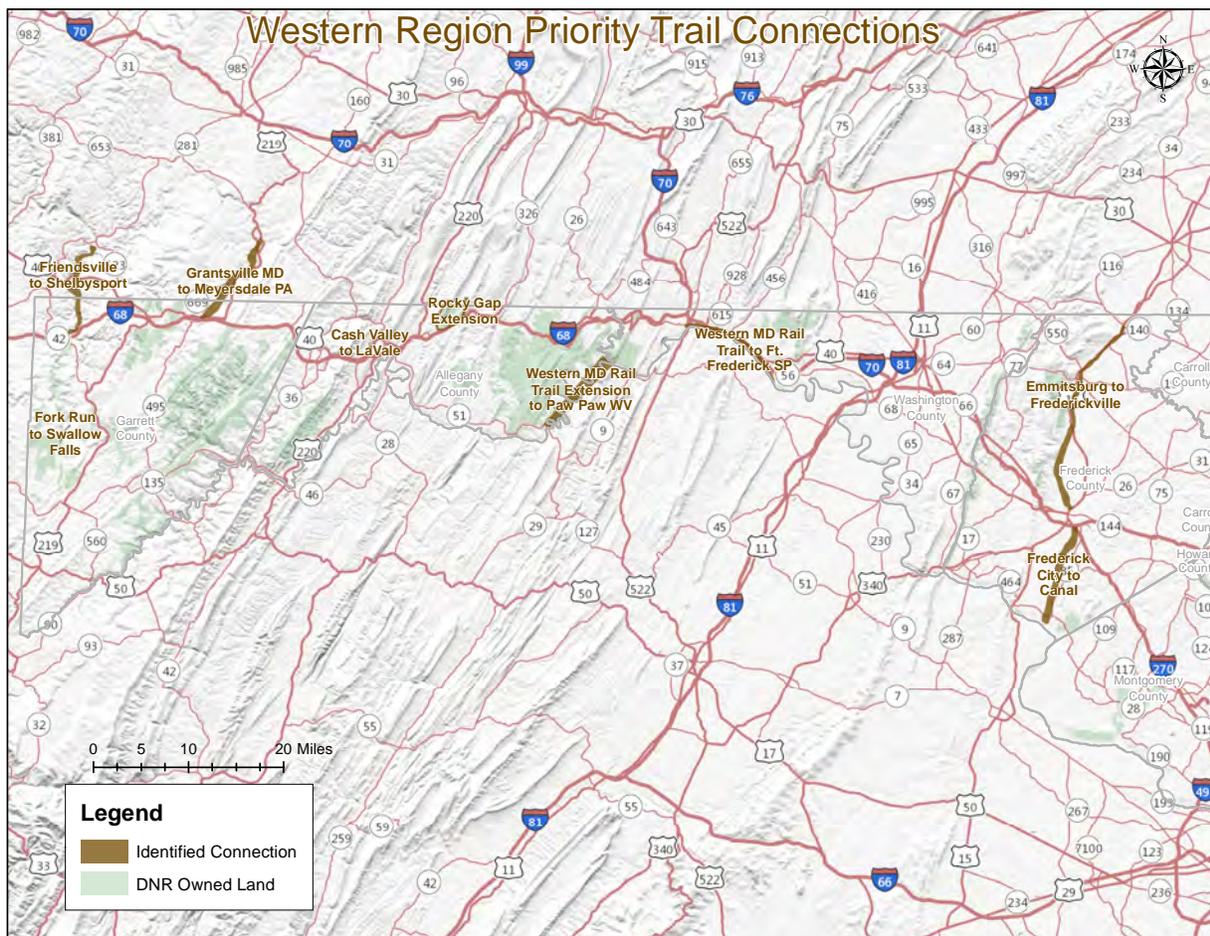
1. Connect existing trails in Salisbury to existing Algonquin Trail in Chesapeake Forest
2. Connect Wicomico and Worcester counties using the East/West rail spine
3. Connect Byrd Park to Cypress Park
4. Develop the Rail Trail from Crisfield to Marion
5. Connect the Cambridge Hyatt to Harriet Tubman State 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/

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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](https://www.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

