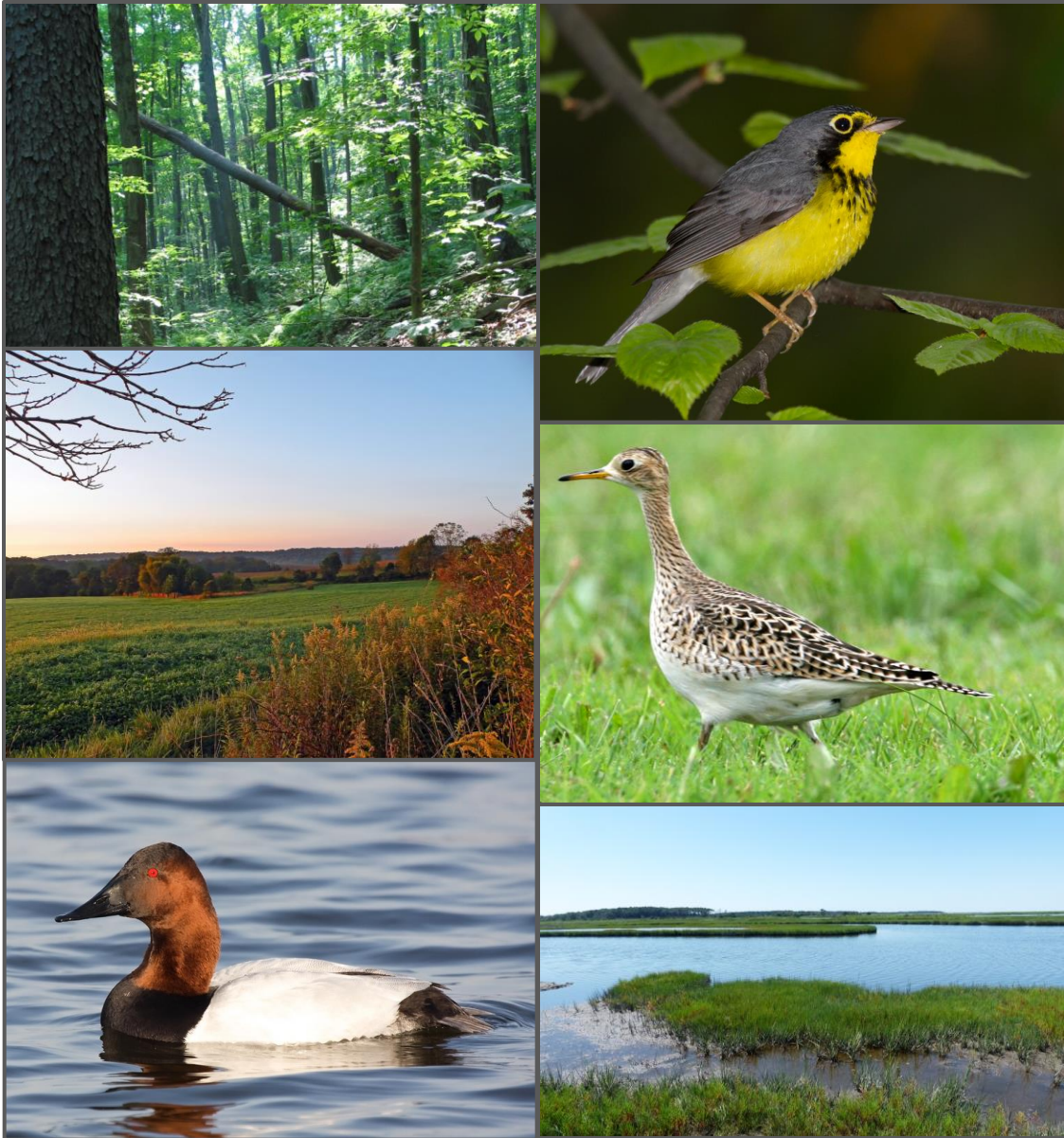


# Conserving Maryland's Birds and their Habitats:

## *Maryland's State Wildlife Action Plan and the Maryland Bird Conservation Partnership*



May 2017

Cover photo credits (clockwise from top left): *Hemlock-Northern Hardwood Forest* (Jason Harrison), *Canada warbler* (Frode Jacobsen), *Upland Sandpiper* (George Jett), *Tidal Salt Marsh and Shrubland* (Jason Harrison), *Canvasback* (Frode Jacobsen), *Managed Grassland* (Bonnie Ott)

Barrier islands, cypress swamps, Delmarva bays, bogs and fens, caves, and hemlock forests of the Appalachian Plateau – these are some of Maryland’s features that support an impressive diversity of ecosystems, habitats, and species. Its varied landscape stretches hundreds of miles from 3,000-foot forested mountains in the west to ocean beaches and dunes in the east. Over 7,000 miles of coastline occur along the Chesapeake Bay (one of the world’s great estuaries), coastal bays, and the Atlantic Ocean. Some 8,800 miles of rivers and streams drain 127 watersheds and over 600,000 acres of wetlands support a range of aquatic habitats. Although 15,000 plant and animal species have been found in the state, many are uncommon, rare, or declining, with much of the state’s natural heritage now confined to small fragments of the landscape that Native Americans inhabited for thousands of years. For example, an estimated 73% of Maryland’s wetlands and more than half of Maryland’s forests have been lost since European settlement.

Due to a variety of threats, some 143 species of birds have been recognized as “Species of Greatest Conservation Need” in Maryland because they are legally protected in the state; of conservation concern in the region, nationally, or internationally; or best available scientific information indicates their populations are in decline or they require specialized habitat types that are likely to be degraded. To arrest the loss of birds and other species, State Wildlife Action Plans have become important tools for successful conservation of the natural environment. The 2015 Maryland State Wildlife Action Plan (SWAP) provides an essential blueprint of how Maryland’s Department of Natural Resources (MD DNR) and conservation partners across the state can work to protect the state’s remaining wildlife species and their habitats, with a focus on Species of Greatest Conservation Need and the habitats that support them. The thrust of the Plan involves strategies to help recover declining species, maintain functioning biological systems, and prevent common species from being threatened to the point of endangerment.

This publication uses information on Maryland bird species and their habitats from the 2015 SWAP to provide an appreciation of Maryland’s natural environment, connect scientific knowledge about species and habitats with known threats, and describe conservation actions that will lead to good stewardship of the state’s natural environment, and thereby the protection of bird species, over the next decade. A final section includes an action plan and describes the role of the Maryland Bird Conservation Partnership as a long-term vehicle for the conservation of birdlife in Maryland.

Readers will come to understand that there is much work to be done and that they play a critical role in addressing the unprecedented pressures on wildlife, from the effects of an ever-changing climate to land use changes and pollution.



Some of Maryland’s diverse habitats (from left to right): *Cove Forest in western Maryland* (Edward Thompson, MD DNR), *swamp in Maryland’s Coastal Plain region* (Scott Smith, MD DNR), and *Maritime Shrubland on Assateague Island* (Jason Harrison, MD DNR)



## Maryland's Birdlife and Greatest Threats

Species of Greatest Conservation Need (SGCN) and the habitats that support them provide a focus for MD DNR and conservation partners, including the Maryland Bird Conservation Partnership. Of the 143 SGCN birds identified in the Plan, 20 are state-listed as Threatened or Endangered and 12 species are state-listed as In Need of Conservation. Many of the state-listed birds are restricted to coastal marshes and islands (e.g., Black Rail, Royal Tern, Black Skimmer) or high elevation montane forests and wetlands (e.g., Nashville Warbler, Northern Goshawk, and Northern Waterthrush). Others, like Golden-winged Warbler, an early successional habitat and high elevation wetland specialist, and Henslow's Sparrow and Upland Sandpiper, both grassland species, are also in significant decline. Other listed birds include the elusive Swainson's Warbler, a highly area-sensitive, forested wetland-nesting bird breeding only in the Pocomoke River watershed.

Over 200 species of birds breed in Maryland, more than half of which are considered to be Species of Greatest Conservation Need. Many species that breed in the state migrate to other areas outside of the breeding season. Excluding marine birds, 24 SGCN birds do not breed in Maryland, but overwinter or stop in Maryland during migration. Marine birds move around in the waters offshore as they follow concentrations of their fish prey. Major Atlantic Flyway migration routes converge on the state or pass through it along the Chesapeake Bay, Atlantic Coast, and major river corridors. Both raptors and songbirds travel along mountain ridges during migration periods. The Chesapeake Bay and offshore areas provide winter habitat for large concentrations of overwintering waterfowl.

*Northern Saw-whet Owl (George Jett)*



In western Maryland, remnant old growth forests, deciduous forests, conifer dominated areas, bog and fen wetland complexes, cliff and rock outcrops, beaver-created wetlands, and large planted grasslands provide habitats for a great diversity of SGCN birds and other species. Because some of these habitats occur nowhere else in the state, a number of bird species breed exclusively, or nearly so, in these Appalachian Plateau, Ridge and Valley, and Blue Ridge regions. Eight state-listed species and an additional 11 SGCN birds breed only in western Maryland's montane region, including Northern Goshawk, Pine Siskin, Winter Wren, Northern Saw-whet Owl, and Golden-winged Warbler. Although historically a

forested landscape, the western-most counties include extensive anthropogenic grasslands resulting from strip mine reclamation and agricultural practices (e.g., hayfields, pasture). These habitats provide some of the few remaining areas in Maryland where area-sensitive grassland nesting birds like Henslow's Sparrow and Upland Sandpiper still breed regularly.

The forests, riparian corridors, wetland habitats, and open areas of the central part of the state (Piedmont) support four SGCN deciduous forest nesting species (Wood Thrush, Acadian Flycatcher, Scarlet Tanager, Louisiana Waterthrush) and one SGCN associated with early successional habitats (Prairie Warbler). Willow Flycatchers, American Kestrels, and Red-headed Woodpeckers breed more commonly in this section of the state. Dickcissel, Bobolink, and Barn Owl were once more common in the grassland habitats of this region of Maryland, as were birds of shrublands and early successional habitats, such as the Northern Bobwhite, American Woodcock, and Yellow-breasted Chat.

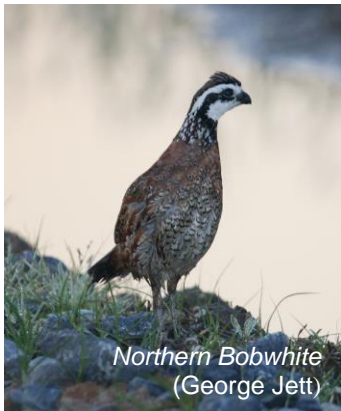
*Prairie Warbler (George Jett)*



The avifauna of the Western and Eastern Shores (Upper and Lower Coastal Plain) includes many SGCN associated with open water and wetland habitats, although some are associated with upland forests, shrublands, and grasslands. The vast saltmarsh habitats of Maryland support the regional stronghold of rails and sparrows, such as Black Rail and Coastal Plain Swamp Sparrow. Chesapeake Bay is a major wintering area for waterfowl in the Atlantic Flyway including Brant, Canvasback, Redhead, and Long-tailed Duck. Several SGCN waterfowl also breed in the Chesapeake Bay region, including American Black Duck and Gadwall. Overall, the Chesapeake Bay supports 67 species of breeding waterbirds, 87 species of wintering waterbirds, and 138 species that stop over during migratory periods, many of which are SGCN. Twenty-one species of colonial waterbirds nest or have nested in Maryland, including Common Tern, Great Egret, Glossy Ibis, Black Skimmer, and Brown Pelican. Maryland's Atlantic Coast and Coastal Bays provide the primary habitats where migrating shorebirds stop to feed and rest, where shorebirds spend the winter, and where rare Piping Plovers breed.



Redhead (George Jett)



Northern Bobwhite (George Jett)

Remaining forested areas in the Upper and Lower Coastal Plain, especially those dominated by hardwoods, provide places for migrating songbirds to rest and refuel on their long journeys. Forested corridors along rivers, especially the Pocomoke, have been shown to be particularly important to these migrants. In larger forest blocks, breeding birds limited to the forest interior form a diverse, species-rich community that can include as many as 10 species of warblers, including Worm-eating, Prothonotary, and Black-and-white. In Lower Coastal Plain uplands, a mosaic of anthropogenic grasslands (e.g., hayfields, wildlife habitat plantings), shrubs, and both young and older forest provides a landscape that supports SGCN species such as Grasshopper Sparrow, Yellow-breasted Chat, and Prairie Warbler.

This mosaic landscape is critical to maintaining the remaining Northern Bobwhite populations, whose range in Maryland has largely been reduced to the Lower Eastern Shore.

Marine birds in Maryland use pelagic habitats on the continental shelf varying from shallow areas close to shore, to open waters beyond the 3-mile state boundary, and to areas above deep canyons on the ocean floor miles from the coast. Concentrations of shellfish and other food sources around shoals and artificial reefs provide nearshore feeding grounds for wintering loons, grebes, and scoters. Migrating Northern Gannets move along the coast by the thousands, with a number of birds remaining to winter in Maryland waters. Further offshore, concentrations of pelagic birds can be found where fish and cephalopod prey are abundant, such as upwellings from deep canyons in the ocean floor at the outer edge of the continental shelf; where *Sargassum* mats are brought in by the Gulf Stream; and where fishing trawlers and processing vessels are dumping offal. In these situations, mixed groups of shearwaters and petrels, which can number in the hundreds, are often found where food is concentrated. Several terns, jaegers, alcids (puffins, murres, razorbills), storm-petrels, Black-legged Kittiwake, and two species of phalarope round out the diversity of marine birds occurring regularly offshore of Maryland.



American Oystercatcher (George Jett)



Over 40 SGCN species are highly area-sensitive and adversely affected by the fragmentation of their respective habitats. For example, forest-nesting species, such as Worm-eating Warbler, Cerulean Warbler, and Broad-winged Hawk, typically only breed in large contiguous forest tracts with nest success tending to decline in increasingly fragmented areas. Area-sensitive grassland nesting birds, such as Henslow's Sparrow and Short-eared Owl, as well as some wetland species, such as Sedge Wren and Saltmarsh Sparrow, show similar patterns. In addition to area sensitivity, some species, including Northern Bobwhite, require a mosaic of habitats at the landscape level to persist. Most fragmentation has resulted from residential and commercial development but infrastructure, land conversion to agriculture, and energy development also contribute. Other threats facing forest breeding birds include conversion of native forest communities to commercial pine plantations and changes in forest composition and structure from altered fire regimes, invasive pests like hemlock wooly adelgid, overbrowsing by deer, and invasive plant species.



*Gilbert Pond near Hughesville, MD in 2002 (left) and in 2007 (right). Orange markers show development that occurred after 2002. Source: MD DNR*

Grassland birds such as Dickcissel and Bobolink can be impacted by changes in agricultural practices like early mowing, while other species are affected by removal of hedgerows. Wetland birds are impacted by invasive plant species (phragmites), contaminants, and lack of beaver-created wetlands. Contamination and drainage of these and other marsh habitats through development and mosquito control efforts can present a serious problem for marsh-nesting species. Climate change has also impacted coastal marsh habitats through sea-level rise, combined with an increase in frequency and severity of storms and tidal surges in coastal areas during the nesting season.

Beach-nesting, migrating, and wintering shorebirds and colonial waterbirds face special challenges as they are concentrated in areas with increased recreational use, expanding gull populations, shoreline development, and alteration of natural shoreline processes. Many islands important to colonial waterbirds continue to shrink due to erosion and sea-level rise, and nests are increasingly vulnerable to overwash during high tides and storm events. These colonies and beach-nesting shorebirds can also be seriously threatened by higher than normal predator populations favored by a variety of human activities. Although recent studies in advance of offshore wind development have provided additional information on deepwater marine birds, the distribution, seasonal movements, population status, and specific habitat preferences throughout the year remain poorly understood for many species, especially those farther offshore. Marine birds can be affected by overfishing, entanglement in fishing gear, contamination, and climate alterations that threaten the presence and abundance of their food resources. The development of offshore wind energy facilities has the potential to impact marine birds, although the degree and severity can be difficult to predict.

Several general threats to birds also affect SGCN birds to differing degrees. Collisions with towers, windows, cars, and other human structures kill many thousands of birds each year. Some SGCNs face competition for nest sites with introduced bird species, and free-ranging domestic cats are estimated to kill billions of birds annually in the U.S. Migratory stopover or wintering habitat is critical for many SGCN species, including shorebirds, waterfowl, Golden Eagle, and songbirds.

## Conservation Actions

State and regional efforts to identify conservation actions and information needs for birds have been extensive. For example, recommendations for SGCN birds are included in regional plans, which help to provide population targets and landscape-level habitat information that can be used to identify priority areas for conservation through acquisition, easement, and habitat restoration. Regional challenges include migration and dispersal patterns, species with large ranges, and watersheds that require the sharing of species, habitats, and entire ecosystems across county and state lines. To address priority conservation actions related to broad-scale issues, working with local partners in organizations that cross state boundaries (such as The Nature Conservancy and the National Audubon Society) provides opportunities to carry out regional, national, and international conservation actions that address Maryland SWAP priorities at the appropriate scale. The designation of Important Bird Areas (IBA) by Audubon Maryland/DC, for example, will assist with this effort by identifying habitats supporting suites of SGCN and working to protect them. Partnerships, such as the newly formed Maryland Bird Conservation Partnership described below, are key to coordinating the efforts of local and regional groups for the most effective and efficient conservation of Maryland's SGCN birds and their habitats.

Given the mobility of birds, planning at the landscape level and considering species needs during their full life cycle is important. Coordination of monitoring for birds and use of standardized protocols are likewise important to assess population status and trends across broad landscapes. To address the special needs of SGCN birds, more information is required on migratory stopover and overwintering requirements; area sensitivity (forest, grassland, and marsh species); inventory of nocturnal species and marine birds; and detailed habitat requirements and impacts of threats for even some of the more well-studied SGCN. Building on information collected during the most recent Breeding Bird Atlas could help to fill in information gaps for select species and also indicate where improvements in habitat conservation and restoration could be most beneficial for SGCN birds.

Fragmentation and habitat destruction for forest-interior as well as area-sensitive grassland species can be limited by protecting the remaining large blocks of intact forests and grasslands, controlling urban sprawl through local land use planning, smart siting of energy developments and transportation corridors, and limiting forest conversion to monotypic pine plantations. Work with the public can encourage the protection of SGCN at migratory stopover sites, beach-nesting sites, waterbird nesting colonies, and through control of predation by free-ranging cats. Programs that encourage private landowners to create or preserve habitat are key for several SGCN. Control of introduced and invasive bird species, predators, and deer populations continues to be needed to conserve some nesting bird species. Limiting the use of pesticides and overharvest of horseshoe crabs and forage fish can protect food resources of SGCN birds. Encouraging farming practices, utility right-of-way management, and reclaimed strip mine practices that favor grassland and shrub-scrub nesting species, such as late mowing, hedgerow establishment, and reduced pesticide use, can benefit a number of SGCN grassland and early successional forest birds. Best Management Practices (BMPs) can be good sources for conservation practices, especially for work with private and public land managers. Working with a variety of partners will be critical to minimize mortality due to collisions.

Restoration of natural fire frequencies, shoreline processes, and beaver populations can create breeding habitat for certain SGCN. Creation of islands to replace those that have been lost could contribute greatly to the persistence of breeding colonial waterbirds. Retention and improvement of aquatic habitats for SGCN birds can be achieved by controlling phragmites, restoring marshes, the enforcement of wetland protection laws, limiting excess nutrient and pollutant inputs, and the reduction of bycatch by commercial fisheries.

## Statewide or Overarching Conservation Actions

A summary of conservation actions to be taken at the state level to address threats identified in the 2015 SWAP is presented below. These actions apply to both bird species and their habitats in Maryland, providing a useful guide to effective strategies.

| Conservation Action Category                     | Threats/Needs to be Addressed   | Conservation Action   |
|--|---|---|
| <b>Land and Water Acquisition and Protection</b> | Land Conversion (Development, Agriculture, Energy, Roads & Service Corridors) | <ul style="list-style-type: none"> <li>● Develop a core network of protected wildlife diversity conservation lands to capture the full array of Maryland’s wildlife species and habitats.</li> <li>● Develop mechanisms to ensure adequate connectivity of important wildlife diversity conservation sites.</li> <li>● Utilize acquisition and easement programs to conserve high quality key wildlife habitats.</li> </ul>   |
| <b>Law and Policy</b>                            | Coordination / Administration Needs   | <ul style="list-style-type: none"> <li>● Apply and enforce existing laws, regulations, and ordinances to protect SGCN and key wildlife habitats.</li> <li>● Establish effective laws, regulations, and ordinances at the local, state, and federal levels to conserve wildlife diversity.</li> </ul>  |
| <b>Direct Management of Natural Resources</b>    | Natural Systems Modifications   | <ul style="list-style-type: none"> <li>● Restore natural processes and hydrological function to key wildlife habitats in a landscape context.</li> </ul>  |
|  | Invasive and other Problematic Species, Genes, and Diseases                   | <ul style="list-style-type: none"> <li>● Develop and implement invasive species (including pathogens) management programs to reduce or prevent impacts to SGCN and key wildlife habitats.</li> </ul>  |
|  | Coordination / Administration Needs   | <ul style="list-style-type: none"> <li>● Fully implement existing recovery plans for threatened and endangered species, and species of conservation concern.</li> </ul>   |
| <b>Planning and Administration</b>               | Management Decision Needs   | <ul style="list-style-type: none"> <li>● Update the BioNet GIS layer, which identifies the most important sites throughout the State for wildlife diversity conservation.</li> <li>● Incorporate wildlife diversity conservation at the local land use planning level.</li> <li>● Utilize existing environmental regulatory programs at state, local, and federal levels to conserve key wildlife habitats and SGCN.</li> <li>● Work with private landowners and public land managers to assist with appropriate management for key wildlife habitats and SGCN.</li> <li>● Develop conservation implementation plans for priority targeted SGCN, key wildlife habitats, and/or sub-watersheds.</li> <li>● Continue development of Maryland’s Natural Areas system to ensure the best remaining SGCN populations and habitats are recognized and conserved.</li> </ul> |
|  | Coordination/Administration Needs   | <ul style="list-style-type: none"> <li>● Secure adequate funding at state, federal, local, and private levels to implement the State Wildlife Action Plan, including developing mechanisms for wildlife diversity users to help fund this Plan.</li> <li>● Collaborate with Chesapeake Bay conservation initiatives to incorporate wildlife diversity conservation into efforts to “save the bay.”</li> <li>● Collaborate with partners and appropriate industries to implement the State Wildlife Action Plan.</li> <li>● Coordinate conservation actions at local, regional, and national levels.</li> </ul>  |



|   |                                       |   |
|---|---------------------------------------|---|
| <b>Data Collection and Analysis – Inventory, Monitoring, and Research</b> | Resource Information Collection Needs | <ul style="list-style-type: none"> <li>● Update Maryland’s natural community classification as needed to incorporate edits to regional and national standards, and map locations of priority natural communities using GIS technology.</li> <li>● Continue to develop programs and implement strategies to monitor key wildlife habitats, priority SGCN, and the effectiveness of conservation actions in an adaptive management framework.</li> </ul>                    |
|   | Infrastructure Needs                  | <ul style="list-style-type: none"> <li>● Gather, maintain, and disseminate appropriate data, including GIS data layers, on species of concern and key wildlife habitats.</li> </ul>   |
| <b>Education, Outreach, and Technical Assistance</b>                      | Utilization Needs                     | <ul style="list-style-type: none"> <li>● Develop recreational opportunities related to wildlife diversity to enhance public appreciation for the conservation of wildlife diversity and the key wildlife habitats that support them.</li> </ul>   |
|   | Education Needs                       | <ul style="list-style-type: none"> <li>● Train staff, partners, and land managers in state-of-the- art wildlife diversity conservation science, techniques, and philosophy.</li> <li>● Conduct regular workshops with MD DNR partners and stakeholders to exchange information on SGCN and key wildlife habitat status and conservation efforts.</li> <li>● Develop a knowledgeable citizenry that actively participates in wildlife and habitat conservation.</li> </ul> |
|   | Outreach Needs                        | <ul style="list-style-type: none"> <li>● Enlist the support of elected officials at the state, local, and federal levels.</li> <li>● Utilize public outreach tools such as social media to increase awareness of the value of wildlife diversity conservation and to garner public support.</li> </ul>  |
|   | Coordination/Administration Needs     | <ul style="list-style-type: none"> <li>● Develop and utilize incentives for private landowners to conserve wildlife habitats and SGCN on their lands.</li> </ul>  |
| <b>Climate Change Adaptation</b>  | Climate Change and Severe Weather     | <ul style="list-style-type: none"> <li>● Work with local governments, private citizens, and public land managers to develop and implement adaptation strategies that address climate change impacts in the context of other stressors.</li> </ul>   |
|   |                                       | <ul style="list-style-type: none"> <li>● Enhance integration and coordination of observation systems to improve the detection of biological responses to climate change and sea level rise.</li> </ul>  |

## A Way Forward: the Maryland Bird Conservation Partnership



Maryland Bird Conservation Partnership

The sections above describe the exceptional avifauna of Maryland's varied landscape. They also note that the diversity of bird species and their habitats is under increasing threat. Unless concerted efforts are taken in the near future, Maryland will lose some of its greatest assets- healthy natural systems and the wide range of birds, plants, and other wildlife that they support. The state risks economic impacts as well as a decrease in quality of life. An estimated 27% of Maryland residents are wildlife watchers, and over 900,000 residents and non-residents enjoy birding in the state. While Marylanders generated \$483 million from wildlife-watching activities in 2011, the Total Industrial Output (TIO), which includes direct, indirect, and induced effects, totaled over \$909 million, produced 10,807 full- and part-time jobs, and generated \$88.4 million in state and local tax revenue.

In parallel with the preparation of the 2015 State Wildlife Action Plan (SWAP), a series of meetings were held with the bird conservation community to formulate and implement the **Maryland Bird Conservation Partnership (MBCP)**. This partnership aims to build the foundation of a collaborative, sustained effort to conserve Maryland's birds and their habitat. Modeled after the North American Bird Conservation Initiative and efforts in other states, MBCP is a coalition of government agencies, nonprofits, and citizen stakeholders combining their efforts to ensure the long-term health of native bird populations. To undertake this complex goal, the Partnership will facilitate and help coordinate work on species and habitat conservation, research, data compilation and curation, citizen-science monitoring, and education.



The Partnership is currently supported by the Maryland Department of Natural Resources through federal funds from the Pittman–Robertson Act, matched by the Maryland Ornithological Society. The U.S. Fish & Wildlife Service also provides in-kind support by donating office space and other resources. The Partnership is led by an Executive Director, a Core Working Group, and a Steering Committee comprised of individuals from government and nonprofit agencies. Conservation actions are pursued under Working Groups such as Forests, Grasslands, Education, Funding, and Data Management.

As a science-driven, partner-based initiative, the MBCP principle objectives are to identify and **prioritize bird conservation** needs and opportunities within Maryland and across state borders; and, assist with the implementation of the 2015 SWAP through coordination and partnerships.

These objectives will be accomplished by:

- Establishing **diverse partnerships** dedicated to the conservation of birds and their habitats to facilitate information exchange and shared activities enabling a synergistic approach to tackling the conservation challenges faced by Maryland's avifauna;
- Coordinating state-wide compilation of existing **avian monitoring data** and determining more effective management action for use in conservation planning;
- **Funding implementation** of on-the-ground bird **conservation projects** by identifying opportunities to leverage resources, minimizing duplication, and pursuing

additional support and resources toward shared management goals of partner organizations;

- Ensuring **adequate monitoring** of birds of special conservation need by strengthening and supporting existing monitoring programs and establishing new monitoring programs where necessary.
- **Broadening citizen participation** in conservation and increase awareness of conservation of birds and their habitats through public, private businesses, and governmental outreach; and,
- Becoming the **principal gateway** for people to understand Maryland's bird life and its conservation needs.

Based upon these objectives and feedback from the bird conservation community, an action plan for MBCP and its partners has been developed for implementation (Table 1), including performance indicators.

The MBCP offers a unique opportunity for state agencies, bird and wildlife organizations, the private sector, and Maryland citizens to dedicate human and financial resources to projects and actions helping to sustain the state's birdlife and its habitat.

Not long ago, streaming flocks of waterfowl often darkened the skies over the Chesapeake Bay as swans, geese, and ducks filled the air with haunting music. Shorebirds swarmed over mudflats and songsters greeted the morn. They still come, but their numbers are greatly diminished and such spectacles may only remain in the memories of the elderly. What will our grandchildren say if these treasures are no more, and we leave them a world without flight and song? Join us in action and make a difference for birds and their habitats!

**For more information on the 2015 State Wildlife Action Plan:**

[http://dnr.maryland.gov/wildlife/Pages/plants\\_wildlife/SWAP\\_Submission.aspx](http://dnr.maryland.gov/wildlife/Pages/plants_wildlife/SWAP_Submission.aspx)

**For more information on the Maryland Bird Conservation Partnership:**

<https://marylandbirds.org/>



**Table 1. Maryland Bird Conservation Partnership Action Plan Matrix**

| Objectives   | Actions  | Performance Indicators   |
|--|--|--|
| Identify and prioritize bird conservation needs and opportunities to implement Maryland's State Wildlife Action Plan.  | <ul style="list-style-type: none"> <li>• Review the SWAP and define/prioritize conservation actions;</li> <li>• Help identify and support scientific studies and research on birdlife and bird habitats directed at conservation; and,</li> <li>• Help promote knowledge of avifauna.</li> </ul>   | <ul style="list-style-type: none"> <li>• Prioritized conservation actions;</li> <li>• Helped implement studies and research on birdlife and bird habitats directed at conservation; and,</li> <li>• Evidence of sustained support to priority projects.</li> </ul>   |
| Establish diverse partnerships to facilitate information exchange, enabling an integrated approach to tackling conservation challenges faced by Maryland's avifauna.             | <ul style="list-style-type: none"> <li>• Establish the MBCP Working Groups by partnering with national and state governmental agencies, NGOs, and private bodies devoted to the protection of bird/wildlife populations and the conservation of their habitats; and,</li> <li>• MBCP Working Groups identify mutually agreed on actions/projects backed by appropriate finance or in kind support and responsibilities for their implementation.</li> </ul>  | <ul style="list-style-type: none"> <li>• Number of significant partnerships established and implemented;</li> <li>• Diversity and effectiveness of partnering with local communities and conservation organizations;</li> <li>• Working Group meetings result in outcomes; and,</li> <li>• Monitoring arrangements established and implemented using lessons learned for application to future projects.</li> </ul>  |
| Increase the awareness of the public, businesses, and governmental officials concerning the conservation of birds and their habitats.  | <ul style="list-style-type: none"> <li>• Help provide educational opportunities, including youth programs, lectures, and field activities;</li> <li>• Create and distribute publications to disseminate information on birds and their habitats;</li> <li>• Work with partners to enhance/build capacity to inform land planning through gathering information and making it accessible to interested parties and decision-makers; and,</li> <li>• Help inform elected officials concerning legislation, regulations, and other actions likely to affect the conservation of bird populations and their habitats.</li> </ul> | <ul style="list-style-type: none"> <li>• Support effective role of Maryland Ornithological Society in fostering information-gathering and synthesis;</li> <li>• Public benefit from support given by the MBCP;</li> <li>• Support to partners in helping mobilize information for use in land use decisions; and,</li> <li>• Measurable level of support to partners in engaging elected officials concerning formulation/ and implementation of policies/regulations likely to affect the conservation of bird populations and their habitats.</li> </ul> |
| Fund on-the-ground bird conservation projects by identifying opportunities to leverage resources and pursuing additional support.  | <ul style="list-style-type: none"> <li>• Create and implement a development plan to ensure adequate funds and resources to meet the needs and responsibilities of the Partnership; and,</li> <li>• Seek funding from State/Federal sources and the private sector to support bird study and conservation actions at state, national, and international levels.</li> </ul>  | <ul style="list-style-type: none"> <li>• Complete and implement MBCP development plan;</li> <li>• MBCP and partners raise resources for activities in alignment with its mission and objectives; and,</li> <li>• Evidence of funds allocated to activities agreed on by the Partnership.</li> </ul>  |
| Coordinate state-wide compilation of existing avian monitoring data and determine more effective collection and management of data for conservation planning and implementation. | <ul style="list-style-type: none"> <li>• Help partnerships enhance/establish monitoring projects;</li> <li>• Help promote collation, processing of data from bird counts, monitoring and inventorying, etc.; and,</li> <li>• Help establish a state-wide system of data collection, collation and analysis and long-term curation to meet identified conservation and implementation needs, including support for MD Bird Breeding Atlas.</li> </ul>   | <ul style="list-style-type: none"> <li>• Evidence of partnered monitoring projects; and,</li> <li>• Progress in establishing a statewide database of existing data sources and appropriate long-term curation and financing.</li> </ul>  |