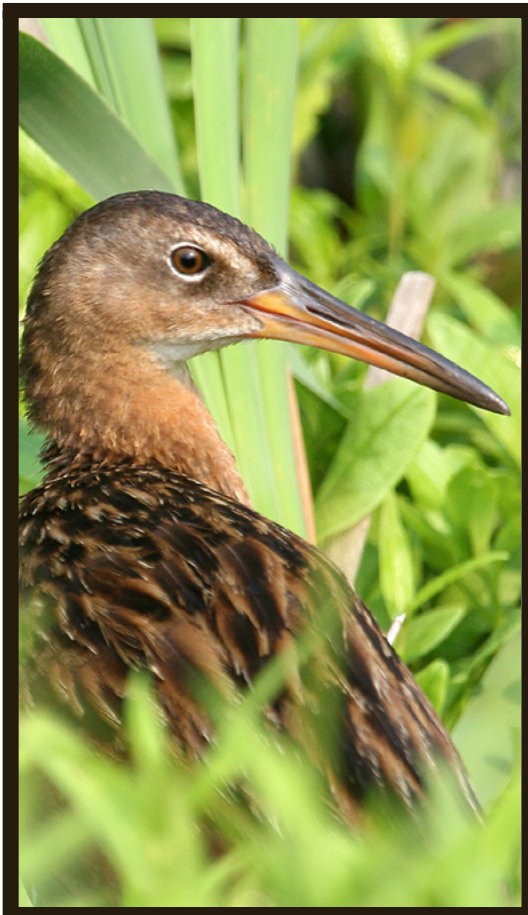
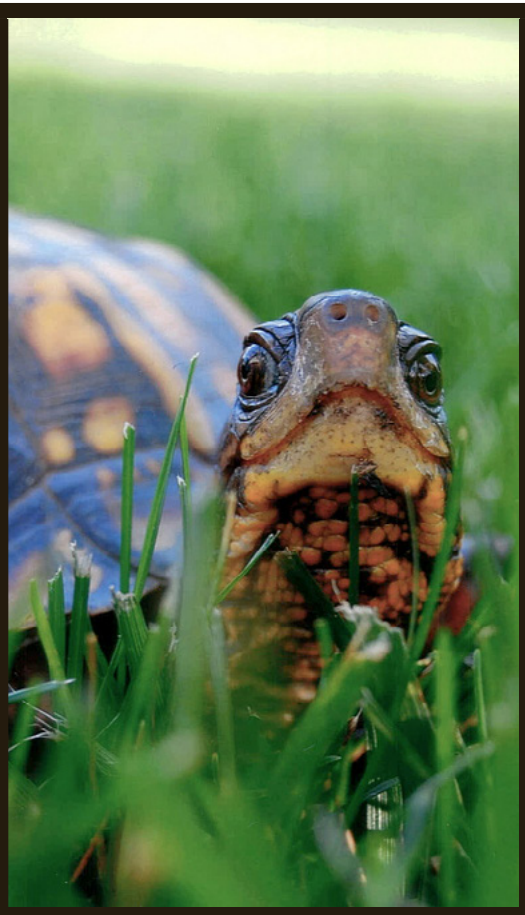
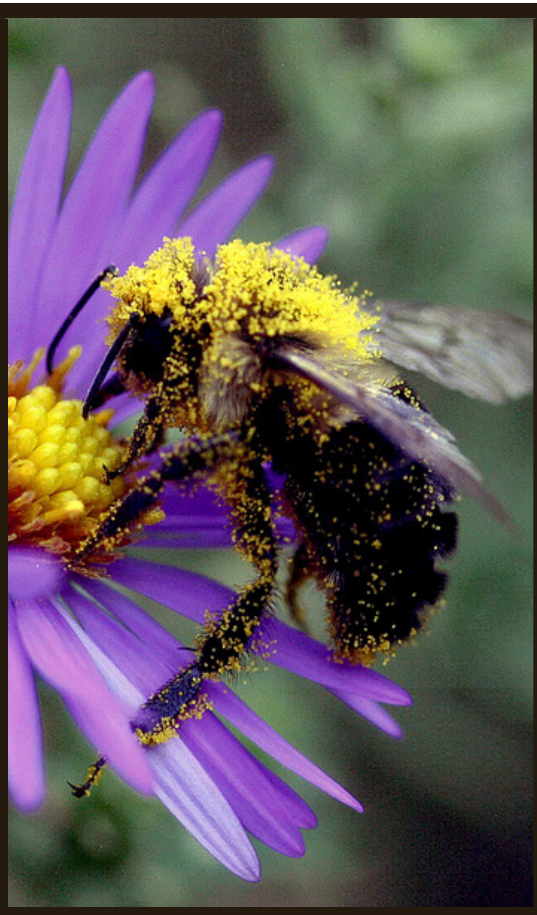






MARYLAND STATE WILDLIFE ACTION PLAN

Executive Summary

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

MARYLAND
State Wildlife Action Plan

Maryland State Wildlife Action Plan

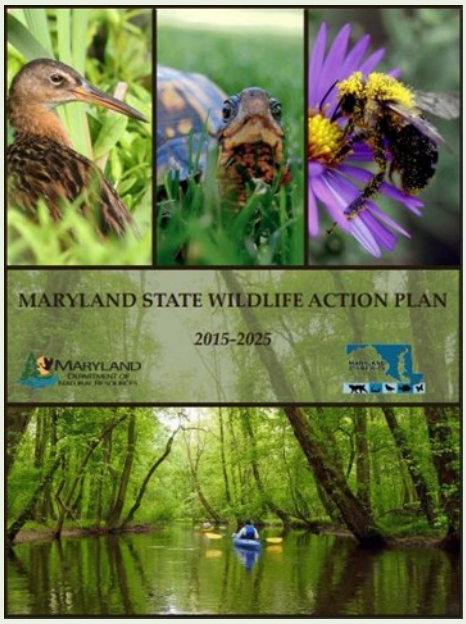
Executive Summary

What is a State Wildlife Action Plan?

Nationwide, State Wildlife Action Plans (SWAPs) are an important tool for successful wildlife conservation. Required for the receipt of federal State Wildlife Grants, SWAPs outline strategic conservation approaches for wildlife and their habitats in each of the fifty states, the District of Columbia, and the five U.S. territories. The Maryland Department of Natural Resources (MD DNR) is leading the 10-year revision of this non-regulatory statewide plan in Maryland. The overall goal of Maryland's SWAP is to provide direction and guidance for wildlife conservation efforts in Maryland for the next decade and, in turn, keep species from becoming listed as endangered.

Left to right: *northern red salamander* (Bonnie Ott), *maritime forest and shrubland habitat* (Jason Harrison, MD DNR), *MD DNR biologist in the field* (Wes Knapp, MD DNR), *barn owl* (George Jett)

Summary of 2015 Plan



The Maryland SWAP represents a shared vision and a strategy that has been developed by working with state, federal, and local organizations that partner with MD DNR for wildlife conservation. These partners in conservation collaborated throughout the SWAP development process to identify wildlife Species of Greatest Conservation Need, threats, and conservation actions for wildlife species and their habitats, and they will be instrumental in implementing Maryland's SWAP. In addition, regional collaboration has brought together the Northeast states to share knowledge pertinent to SWAP planning, development, and implementation. This unprecedented collaboration improves efficiency of limited conservation dollars and uses the best available science and expertise to identify the highest priority species and habitats in need of conservation throughout the region.

Maryland's first SWAP was written in 2005, titled the Wildlife Diversity Conservation Plan. Over the past decade, this plan has been used by government agencies, conservation organizations, and citizens as an important tool for wildlife conservation. For the revised SWAP, results from recent field studies and conservation plans were used to reevaluate and update the 2005 list of focal species with a substantial emphasis on invertebrate species and to include a regionally standardized classification of key wildlife habitats. The 2015 SWAP also presents new information on climate change and its impact on Maryland's wildlife and their habitats; incorporates an internationally standardized threats classification system; and presents a comprehensive list of conservation actions for both animal groups and their habitats, organized by specific threat category. The main topics included in the 2015 SWAP are summarized in the following sections.

Why is Maryland an important place for wildlife?

More than 15,000 animal and plant species call Maryland home. Nearly 1,200 of these species are rare, uncommon, or declining. Maryland's wildlife distribution and abundance ultimately depend on the ecological diversity of the state's habitats. The varied physiographic features, geology and resulting soil types, topography, and climate of Maryland support a range of plant communities and aquatic environments that provide various habitats for wildlife. Maryland's landscape, wetlands, and waterscape, including the Chesapeake Bay and Atlantic Ocean, support some of the country's most imperiled and endangered species, such as the dwarf wedgemussel, piping plover, and bog turtle. A few animals in Maryland are found nowhere else in the world.

Piping plover (Matt Poole, USFWS)

Why are wildlife important to Maryland?

From salty Atlantic waters to mountain freshwater streams, and throughout the forests, grasslands, and wetlands in between, wildlife species are important to Marylanders and Maryland's economy. Wildlife-related recreation generated over $1 billion in revenue in Maryland in 2011, with greatest revenue contributed by fishermen, hunters, and wildlife-watchers. The Chesapeake Bay, the largest estuary in the nation, generates hundreds of millions of dollars annually in shellfish and finfish harvests, with additional revenue and jobs produced by tourism and recreation industries in the region. Increasingly popular tourist destinations such as Maryland's Coastal Bays on the Eastern Shore and Deep Creek Lake in western Maryland are drawing more boaters, hikers, kayakers, and other people that enjoy the outdoors to contribute to local economies. Marylanders' appreciation of the state's natural areas is crucial to the protection of the species that live in these habitats.

Top left: *Birders at MD DNR's 'Becoming an Outdoorswoman' birding workshop* (MD DNR)

Below left: *Canoeing* (MD DNR)

Delmarva fox squirrel (Guy Willey, USFWS)

What species are covered in the Plan?

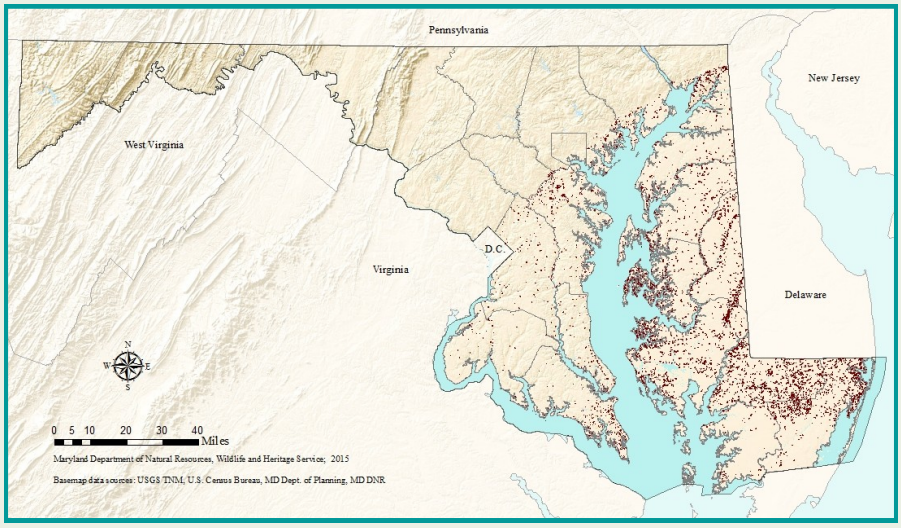
Maryland's SWAP describes the process used to select Maryland's Species of Greatest Conservation Need (SGCN) and summarizes the best available information regarding the conservation status, distribution, and abundance of all major animal groups that occur in Maryland. The SGCN reevaluation and selection process involved the input of numerous species experts and the consideration of many priority lists and ranking systems. Maryland's 610 SGCN are representative of many animal groups, including mammals, birds, reptiles, amphibians, fishes, insects, freshwater mussels, and other invertebrates. This includes all state- and federally listed Threatened or Endangered species, rare species, endemic species, declining species, and responsibility species for which Maryland harbors a significant portion of the overall population. In addition to discussing Maryland's carefully selected SGCN, the SWAP expands upon Extinct and Extirpated species of Maryland, wildlife species in a regional context, and species' conservation statuses. The appendices that accompany SWAP include listings of all Species of Greatest Conservation Need with rankings from various organizations and other wildlife conservation plans.

What habitats are covered in the Plan?

Because of the strong tie between species and habitats, it is critical to identify those habitats that support Species of Greatest Conservation Need (SGCN) in order to conserve them. In the 2015 SWAP, habitats that support SGCN are referred to as "key wildlife habitats." Maryland's 59 key wildlife habitats include habitats within the following categories:

- Terrestrial/Upland habitats
- Wetland habitats
- Aquatic habitats
- Subterranean habitats
- Other habitats, such as managed grasslands and artificial structure

Coastal Plain Oak-Pine Forest (Jason Harrison, MD DNR)



Locations of Coastal Plain Oak-Pine Forest key wildlife habitat in Maryland, displayed in red

The key wildlife habitats of Maryland represent a diverse portfolio of ecological systems, each bound by a similar physiography, geology, hydrology, climate, soil composition, flora, or other significant characteristics. Maryland's SWAP communicates the best available current information regarding the description, condition, and distribution of key wildlife habitats, and links habitats to the SGCN found in those habitats. The SWAP includes maps depicting locations of specific key wildlife habitats in Maryland, lists of associated rare native plants, and appendices cross-referencing Maryland's key wildlife habitats to widely accepted habitat classification systems. Places to visit these key wildlife habitats are listed, including counties and public access locations such as state parks.

Left to right: *Human-created habitat such as utility rights-of-way* (Jason Harrison, MD DNR) *and managed grasslands* (Bonnie Ott) *may also provide habitat for Species of Greatest Conservation Need, including grassland birds, bats, and invertebrates such as the monarch butterfly* (Richard Orr)

What threatens Maryland's wildlife?

Maryland's SWAP details threats facing Maryland's habitats and the wildlife that they support. To promote regional collaboration and more effective conservation, states in the Northeast region agreed to classify threats using the same comprehensive system. Maryland's SWAP explores in depth threats organized under the following general categories:

- Potential impacts from changes in land use, energy production, transportation
- Modifications of natural systems
- Biological resource use
- Invasive species
- Pollution
- Climate change
- Resource management needs
- Recreation needs

An excluder device fits into the entrance funnel on crab pots to reduce diamond-backed terrapin bycatch (MD DNR)

Climate change

Given the importance and relevance of climate change to a wide range of today's conservation actions, an entire chapter of the SWAP is dedicated to this threat and related information. This chapter covers three major topics:

- Widespread changes from climate change on regional and state scales
- Risk and vulnerability of Maryland's SGCN and key wildlife habitats
- Impact to all animal groups as a result of climate change

Left, *little brown bat exhibiting white-nose fungus* (Ryan von Linden, New York Department of Environmental Conservation); **Right,** *MD DNR biologists spraying herbicide on invasive* Phragmites australis (Kerrie Kyde, MD DNR)

What actions should be taken to conserve wildlife and their habitats?

Over 1,000 conservation actions were developed for Maryland's SWAP. These measures, intended to conserve, protect, and manage Species of Greatest Conservation Need and the habitats that they depend on, were identified during the SWAP development process to address the threats identified by MD DNR and many partners. The implementation of conservation actions often depends on funding, resources, manpower, and partnerships, so these conservation actions were prioritized according to seven criteria: urgency, cost, chance of success, benefit, collateral benefit to other species/habitat, feasibility/likelihood of implementation, and public support. Maryland's SWAP summarizes regional and statewide conservation actions, then lists conservation actions specific to animal groups, individual species, and key wildlife habitats. Conservation actions in Maryland's SWAP fall into the following major categories:

- Land and water acquisition and protection
- Law and policy
- Direct management of natural resources
- Planning and administration
- Data collection and analysis – inventory, monitoring, and research
- Education, outreach, and technical assistance
- Climate change adaptation strategies

How will the Plan's success be measured?

Maryland's SWAP describes the use of monitoring data in an iterative learning framework to assess and improve the effectiveness of conservation actions presented in the Plan. Monitoring was recognized as one of the most crucial needs for biodiversity conservation in the 2005 Plan, and it is still recognized as a priority need in the 2015 SWAP. The long-term successful implementation of Maryland's SWAP will, at a minimum, prevent more SGCN from becoming increasingly rare and endangered, prevent key wildlife habitats from being degraded and irreparably lost, and minimize or mitigate threats to both. Critical measures of success will also include the reversal of population trends, such that rare species will become more abundant, and more key wildlife habitats will be restored, protected and appropriately managed within a natural landscape. Another important measure of the effectiveness and adaptability of this SWAP is the frequency and degree of integration of SWAP targets into the operations of MD DNR's many programs, as well as those of its partners and stakeholders. Maryland's monitoring framework and strategy for adapting management based on results will focus on evaluating long-term progress towards broad as well as specific objectives.

MD DNR works with partners across the state and region to conserve wildlife and their habitats. Maryland's SWAP includes a compilation of the species and habitat monitoring programs carried out by such organizations, including implementation leads and monitoring targets. Such a network of species and habitat monitoring programs is critical to evaluating the progress of statewide conservation initiatives. Coordinated regional monitoring projects, many of which are discussed in Maryland's SWAP, track status and trends of Regional Species of Greatest Conservation Need and their habitats and evaluate the effectiveness of conservation actions in the Northeast states.

Clockwise from top: *Tidal Brackish Marsh and Shrubland key wildlife habitat* (Jason Harrison, MD DNR), *MD DNR biologists in the field* (Scott Smith, MD DNR), *State Wildlife Action Plan meeting* (David Curson, Audubon MD-DC), *MD Park Ranger with citizens* (Kerry Wixted, MD DNR), *bobcat attracted to deer carcasses* (MD DNR trail camera)

What is next for Maryland's SWAP?

During its 10-year collaborative and strategic implementation period, Maryland's SWAP will serve as a statewide guidance document for use by all agencies and organizations that work to conserve Maryland's biodiversity. Acknowledging the importance of the work performed by organizations outside of MD DNR, the SWAP lays out recommendations for projects and actions for the conservation of wildlife and their habitats. This Plan also includes information about collaboration and coordination with conservation partners, stakeholders, and the general public throughout the process of implementing and revising this SWAP over the next 10 years. The next SWAP revision will be completed by 2025.

This first revision to Maryland's SWAP allowed the opportunity to not only assess the current health and needs of Species of Greatest Conservation Need (SGCN) and their habitats, but also to look at the effectiveness and success of past conservation actions and strategies. For states with an approved SWAP, State Wildlife Grant funding is provided to the state's lead fish and wildlife agency through the U.S. Fish and Wildlife Service, allowing for the continuation and improvement of the protection and management of SGCN and their habitats. The results of Maryland's State Wildlife Grant projects over the past 10 years provided a strong foundation for revisions to the 2005 SWAP. The 2015 SWAP describes successful outcomes from State Wildlife Grant-funded projects in planning for conservation, providing technical assistance, carrying out inventory and monitoring projects, developing and maintaining databases, and restoring and protecting habitat. However, as new threats emerge and existing threats increase in scope and pervasiveness, much work remains to be done. The 2015 Maryland SWAP provides a powerful tool to guide MD DNR and its numerous partners in conserving our invaluable wildlife and irreplaceable natural habitats.

To see the complete draft State Wildlife Action Plan please visit: http://dnr2.maryland.gov/wildlife/Pages/plants_wildlife/SWAP_How-to-Help.aspx. For any questions, concerns, or comments please contact Ingrid Brofman (State Wildlife Action Plan Coordinator) at ingrid.brofman@maryland.gov or (410) 260-8579.

Clockwise, beginning top left:
Highland River, Swallow Falls (Paul Kazyak, MD DNR), *Banded pennant* (Kerry Wixted, MD DNR), *MD DNR biologist in the field* (MD DNR), *Maryland Stream Waders stream restoration project underway* (MD DNR), *American woodcock* (George Jett), *MD DNR biologist in the field* (Scott Smith, MD DNR)