Acidic seepage bog in Oxon Run Park

Chapter 1
Introduction

The District of Columbia's Wildlife Action Plan is a comprehensive, citywide plan and framework for managing and conserving the District's diverse animal wildlife and their habitats. The District is a part of a federal grant program that funds efforts to prevent the extinction of rare species and—just as critically—to prevent common species from becoming rare. All 50 states, the District, U.S. territories, and many Native American tribes participate in the State Wildlife Grant (SWG) program.

The State Wildlife Grant program supports the conservation and management of non-game animal wildlife and their habitats. Within each state's program, rare and declining wildlife are designated as Species of Greatest Conservation Need (SGCN). These species and their critical habitats are targeted for management in the State Wildlife Action plans (SWAPs). Each SWAP designates SGCN and critical habitats and assesses the threats to both. The SWAP identifies conservation actions that will be implemented to reduce and mitigate the threats to SGCN; actions range from habitat restoration to land acquisition and from wildlife inventory to regulations. SWAPs and SWGs are used regionally and nationally to enhance coordination of landscape management and efforts to prevent species from becoming threatened or endangered.

The District of Columbia developed its first SWAP in 2005. At that time the Fisheries and Wildlife Division (FWD) was a part of the Environmental Health Administration in the Department of Health. FWD worked with partners and stakeholders to prepare the 2005 Wildlife Action Plan (SWAP 2005) (Pfaffko and Palmer 2006). The Fisheries and Wildlife Division is now within the Natural Resources Administration of the Department of Energy and Environment (DOEE). FWD has updated the District's SWAP in 2015 (SWAP 2015) to meet the requirements of the SWG program. This is the first comprehensive update of the District's Wildlife Action Plan. This update is based on a foundation of ten years of research, inventory, and monitoring of the District's wildlife.

1.1 Sustaining Biodiversity

The District of Columbia is a developed urban city that is also home to abundant and diverse wildlife and habitats. The District is the only completely urban jurisdiction required by federal law to manage its fisheries and wildlife resources. There are significant challenges to managing wildlife diversity in an urban area that has seen rapid growth in its human population and continued urbanization and development. This plan seeks to balance the protection of the District's unique natural diversity with human and economic needs.

The District of Columbia is a 69-square-mile city located at the junction of the Anacostia and Potomac Rivers at the geologic fall line between the Appalachian Piedmont and Atlantic Coastal Plain. The District has a temperate/subtropical climate and is 78% developed land and 12% undeveloped land. The remaining 10% of the District is open waters of the Potomac and Anacostia Rivers. There are more than 6,700 acres of land protected as National Parks and 900 additional acres of District-owned park land. The forests, waters, meadows, and wetlands in the District provide habitat for approximately 240 species of birds, 78 fish, 32 mammals, 21 reptiles, 19 amphibians, and thousands of invertebrates. Abiotic factors such as landform, climate, and soils have driven the evolution of diverse plant communities, including ice-scour scrub forests along the Potomac River and the remnant, regionally endemic magnolia bogs in the hills east of the Anacostia River.

Spotted turtles with transmitters for monitoring.

The District has an abundance of notable wildlife, including nesting bald eagles; the federally threatened northern long-eared bat; recovering populations of American shad; and the endemic, endangered Hay's Spring amphipod.

The continued and successful growth of the District as a global, metropolitan, and urban city highlights the challenge of sustainably managing human encroachment into precious natural areas while allowing or encouraging some uses. The District is home to approximately 659,000 people —its highest population since the 1980s. Since 2010, the District has experienced a sustained period of 9.5% population growth —nearly three times the national average of 3.3% (U.S. Census Bureau 2015). Beyond the proximate threats of urban development and land use, climate change will affect nearly every aspect of natural resource management, land use planning, and future development in the long term. The District's climate change adaptation plan (DOEE 2015a) and Sustainable DC Plan (2012) call for actions that provide access to green spaces; preserve natural systems, wildlife, and landscapes; ensure the resilience of natural and human systems; and encourage District residents to value the benefits of a healthy relationship with natural resources and the environment.

1.2 DOEE Jurisdiction

The management of fisheries and wildlife is a state function. DOEE serves as a state agency in this regard and has jurisdiction over the conservation and management of fish, wildlife, and habitats in the District of Columbia. Currently, DOEE is limited in the authority to protect and manage threatened or endangered species or to acquire and designate wildlife areas. These deficiencies are addressed in this plan.

DOEE is the state trustee agency for fish and wildlife resources, and is responsible for providing biological expertise to review and comment on environmental documents and impacts relating to development, infrastructure, and other projects that may impact federally listed species or SGCN.

Regarding the terrestrial wildlife habitat in the District that is federally protected National Park land, DOEE has and will continue to work closely with the National Park Service and other federal landowners who have jurisdiction over the wildlife and wildlife habitats on their land.

1.3 Vision for the District's Wildlife

Through SWAP 2015, DOEE seeks to conserve the wildlife and habitats of the nation's capital by focusing on ecosystem-based wildlife resource management actions that address the unique issues that wildlife face in an urban city and the significant challenge of climate change. This plan is based on the best available science and remains flexible so actions can be implemented and adapted as situations change. Implementation relies on making conservation information more accessible to resource managers, conservation organizations, and the public. The development of this plan relied on partnerships with a broad array of government agencies, organizations, businesses, and citizens. The effectiveness of this plan will rely on ongoing input and assistance from the same array of partners. DOEE's vision is to sustain the current biodiversity and enhance habitat value in the District over the next decade. The strategies and actions laid out in this plan establish the framework for ongoing conservation for future generations.

1.4 State Wildlife Grant Program

The SWG Program was created by the Department of the Interior and Related Agencies Appropriations Act of 2002, Title I, Public Law 107-63. It was developed with support from Teaming with Wildlife, a bipartisan coalition working to increase state funding for wildlife conservation. This program provides funding to prevent wildlife population declines and keep common species common. The funds are intended to work in conjunction with other funding sources, and are only a small portion of the funding that is actually required to implement the SWAP conservation actions. The other necessary funds will be matched by partners.

Taken as a whole, SWAPs represent a massive effort to bring together the best science available to conserve priority fish and wildlife and their habitats through innovative public-private partnerships. The SWG program is the primary funding source available for state fish and wildlife agencies and their conservation partners to restore and actively manage the nation's declining wildlife. Although it does not have a dedicated funding stream, financial backing has continued at relatively modest annual levels for each state and territory. Without the SWG program, funding for state fish and wildlife diversity programs to prevent endangered species listings may be greatly curtailed or eliminated.

Nationally, the SWAPs have identified more than 12,000 species that are at risk of becoming endangered. They have offered a diverse set of conservation actions to address threats to wildlife. The SWG program has had strong bipartisan backing in Congress, and is supported by over 6,300 conservation organizations and businesses that make up the Teaming with Wildlife coalition (www.teaming.com). The coalition was founded to advocate for the creation of the SWG program and continues to advocate for dedicated funding to ensure this successful program continues.

1.4.1 Required SWAP Elements

Each SWAP must be approved by the U.S. Fish and Wildlife Service (USFWS) director and must consider the broad range of fish and wildlife and associated habitats, with priority given to those species with the greatest conservation need. The states must review and, if necessary, revise their SWAPs at least every ten years. Revisions to each SWAP must follow the guidance issued in the July 12, 2007, letter from the USFWS director and the president of the Association of Fish and Wildlife Agencies (AFWA). To satisfy this guidance, SWAP 2015 must address the eight elements of a comprehensive wildlife conservation strategy required by Congress:


Goldenrod meadow at Catholic University

Element 1: Species Distribution and Abundance
Information on the distribution and abundance of species of wildlife, including low and declining populations as the state fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the state's wildlife. These species are referred to as Species of Greatest Conservation Need (SGCN).

Element 2: Critical Habitats and Habitat Condition
Descriptions of locations and relative condition of key habitats and community types essential to conservation of SGCN.

Element 3: Threats to Wildlife and Wildlife Habitats, and Research Needs
Descriptions of problems that may adversely affect SGCN and their critical habitats and priority research and survey efforts needed to identify factors that may assist in restoration and improved conservation of SGCN and habitats.

Element 4: Conservation Actions and Priorities
Actions necessary to conserve SGCN and habitats and priorities for implementing such actions.

Element 5: Monitoring and Adaptive Management
A plan for periodic monitoring of SGCN, habitats, and the effectiveness of the conservation actions in Element 4 and for adapting these conservation actions to respond appropriately to new information or changing conditions.

Element 6: SWAP Review and Update Process
Procedures to review the SWAP at intervals not to exceed 10 years.

Element 7: Coordination with Conservation Partners
Provisions for coordinating the development, implementation, review, and revision of the SWAP with federal, state, and local agencies and Indian tribes that manage significant land and water areas within the state or administer programs that significantly affect the conservation of identified species and habitats.

Element 8: Public Participation Strategies
Provisions to provide the necessary public participation in the development, revision, and implementation of its strategy.

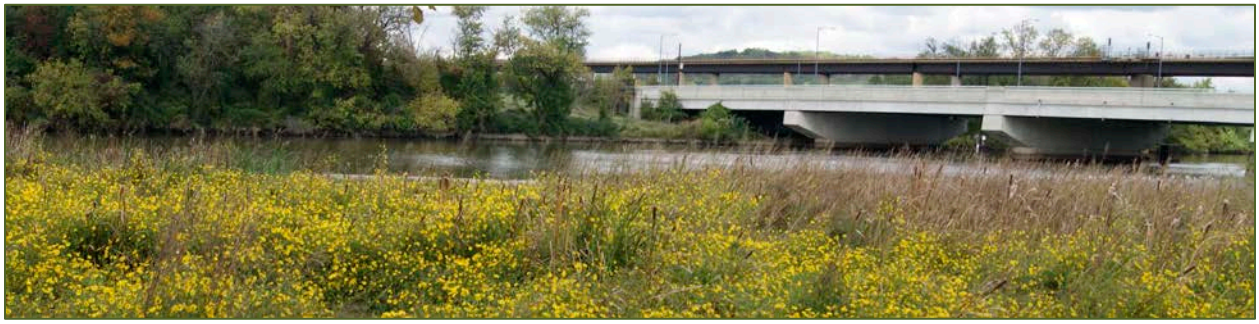
1.4.2 Summary of Key Changes from SWAP 2005

SWAP 2015 has been substantially updated and revised from SWAP 2005. Some changes and inclusions are based on guidance documents for the revision process from USFWS (2007) and AFWA (2009, 2011, and 2012). Updates to SGCN lists are based on nearly a decade of occurrence data on current SGCN and other animal species in the District. SWAP 2005 described how DOEE was data deficient for many animal taxa; therefore, the primary goal of SWAP 2015 is to improve knowledge about the District's wildlife.

Key changes to SWAP 2015 include the following:

- A new, more rigorous, quantitative approach to determine the status of SGCN
- A three-tiered prioritization scheme for SGCN
- Detailed analysis of habitat types
- Detailed analysis of habitat condition with prioritization of critical habitats
- Designation of Conservation Opportunity Areas in critical habitats
- Systematic identification and ranking of threats
- Integration of threats and issues related to climate change
- Prioritization of resource management actions over species inventory and monitoring
- Focal Conservation Actions that cut across SGCN and habitats
- Renewed emphasis on partnerships and collaboration
- Effectiveness measures for conservation strategies and adaptive management

1.5 SWAP 2015 Approach



DOEE approached the SWAP 2015 update with a focus on quantitative assessment of the District's wildlife and habitats and an emphasis on resource management projects that will improve whole ecosystems. Conservation actions focus on habitat restoration and creation, conservation of endemic plant communities, and new opportunities for research and monitoring in both critical habitats and developed areas. The District will increase its overall ecological integrity by creating and expanding habitat areas and improving and enhancing whole systems at a large scale—wildlife, plants, habitats, abiotic factors, and processes. This approach will benefit all wildlife, including SGCN. Landscape-scale and ecosystem-based management will also help to enhance water quality, reduce erosion, and develop greater resilience for species and habitats, in addition to enhance societal, aesthetic, and health values.

1.5.1 SWAP Development Team and Technical Committees

Using the eight required elements as an outline, DOEE began its update of the plan with analyses of the SWAP 2005 SGCN list and recent trend data and a search for external data. The SWAP Coordinator and Internal Working Group in DOEE led all aspects of SWAP 2015 development. Technical committees for birds, fish, reptiles and amphibians, mammals, invertebrates, and habitats assisted with these tasks.

SWAP Coordinator Damien Ossi, DOEE Fish and Wildlife Biologist

Internal Working Group DOEE Fisheries and Wildlife Division

Daniel Ryan, Fisheries Research Branch Chief

Dan Rauch, Fish and Wildlife Biologist

Lindsay Rohrbaugh, Fish and Wildlife Biologist

Shellie Spencer, Fish and Wildlife Biologist

Sherry Schwechten, Program Analyst

Associate Director, DOEE Fisheries and Wildlife Bryan King

The SWAP Coordinator's role was to oversee and coordinate the SWAP update, represent the District in regional SWAP meetings, working with the Internal Working Group to develop SWAP 2015. The group met formally and informally as necessary. During the development phase, the group's tasks included, but were not limited to the following:

- Searching, collecting, and mapping species, habitat, and climate data
- Convening technical committees
- Analyzing species data
- Ranking and prioritizing SGCN
- Analyzing habitat condition
- Assessing and prioritizing threats
- Assessing, prioritizing, and developing conservation actions
- Developing effectiveness measures and adaptive management plans
- Planning and conducting stakeholder outreach
- Planning and conducting outreach to encourage public participation
- Incorporating comments from partners, stakeholders, and the public

Technical Committees

DOEE fish and wildlife biologists led technical committees, including representatives from federal, state, and local agencies; conservation organizations; academic institutions; natural resource-based businesses; and private citizens. They provided valuable data, guidance, and expertise to assess threats, select SGCN, identify priority habitats, and recommend conservation actions and monitoring protocols. The technical committees also provided essential knowledge of existing programs of agencies and organizations in the region. DOEE integrated this information in SWAP 2015 to ensure that it would be comprehensive and effective. See Chapter 8 for more information about the technical committees and other stakeholder outreach.

1.5.2 Designating SGCN and Critical Habitats

The Internal Working Group and technical committees analyzed data for species master lists that included 387 current or historically resident vertebrate species and approximately 315 current or historically resident invertebrate species. They used a quantitative scoring and ranking system to analyze vertebrate populations and set criteria for listing species as SGCN. Ultimately, the listing criteria varied slightly between taxa (birds, mammals, fish, reptiles, and amphibians) based on regional wildlife priorities and input from the technical committees. The criteria for listing invertebrates

(dragonflies, damselflies, butterflies, bees, beetles, amphipods, copepods, crayfish, snails, mussels, and sponges) varied by taxa, and included recent occurrence data, state and regional rankings, federal status under the Endangered Species Act of 1973 (16 U.S.C. 153–1544, 87 Stat. 884, as amended) (ESA), and national or regional population trends. The criteria varied for each invertebrate taxon based largely on input from the technical committee.

SGCN were prioritized based on several factors, including the feasibility of implementing species and habitat conservation strategies, estimations of available resources and the economic feasibility of recovery, and the expectation of a reasonable chance of improving conservation status. The selection and prioritizations processes are described in detail in Sections 2.3 and 2.4.

Wildlife habitat data were collected, categorized, and analyzed. Habitat data included maps and other spatial data provided by the National Park Service, DOEE, and the District's Office of the Chief Technology Officer–District of Columbia Geographic Information System, as well as vegetative data DOEE collected. Habitats were classified into a hierarchical system that conforms to regional and national standards so that these data can be integrated into regional projects and plans in the future. Habitats were classified into various natural systems based on vegetative plant communities and into developed land use systems based on human density and the built environment.


Pinxter azalea in Fort Chaplin Park

DOEE used a variety of spatial data and maps to assess the condition of habitats and score and rank them. This assessment included data for SGCN diversity, SGCN abundance, the degree and extent of invasive plants, soil quality, the impact of deer browse, and the extent of tree canopy. Each data set was scored, weighted, and summed. The output of the habitat condition analysis indicates specific locations where habitat quality is high. The output was categorized into tiers to indicate areas that are critical, extremely significant, and highly significant to SGCN.

National and regional guidance recommends that states designate discrete, spatially distinct areas that offer the best opportunities and potential for SGCN conservation. These are called Conservation Opportunity Areas. DOEE selected eight Conservation Opportunity Areas that include high SGCN diversity, endemic species and rare vegetative communities. Habitat, habitat conditions, and Conservation Opportunity Areas are described in detail in Chapter 3.

1.5.3 Threats, Actions, and Effectiveness Measures

The Internal Working Group and technical committees identified threats to wildlife and wildlife habitats. These threats were categorized based on international and national hierarchies that correlate specific conservation actions to specific threats. Threats were separated into those that will affect critical habitats (such as invasive plants) and those that impact wildlife independent of their habitats (such as diseases and pathogens). Threats were ranked as having high, moderate, or low impacts using characteristics such as severity, immediacy, and spatial extent. High-ranking threats to both aquatic and terrestrial habitats are prioritized and described in Chapter 4.

The threats and impacts of climate change on SGCN and habitats were assessed separately. A fine-scale climate change vulnerability assessment was performed. Climate, precipitation, and soil moisture were modeled to predict changes in vegetative habitats and how those changes would impact certain SGCN. Results showed that sea level rise and changes in soil moisture will impact vulnerable habitats, such as emergent wetlands, upland forests, and vernal pools. These models, the predicted impacts, and the actions that may increase the resiliency of habitats are addressed in Chapter 5.

The threats that are prioritized in Chapter 4 are addressed with specific conservation actions in Chapter 6. Under the threat hierarchies, each particular threat is tied directly to a corresponding conservation action that has been determined to be the most effective way to mitigate or reduce that threat. Each threat is mapped to an individual action or actions. DOEE addressed the highest priority habitat-based threats with six overarching actions and identified actions for all additional threats to habitats in Conservation Opportunity Areas. Specific actions are described, and the lead agency and any partners that may assist with implementation are identified. Non-habitat based actions are similarly detailed.

Additionally, DOEE selected a number of Focal Conservation Actions (FCA). These are broad-scale conservation efforts that represent on-the-ground natural resource management projects that go beyond inventory and monitoring and can be applied to many species or in many habitat types. FCAs represent the need to improve existing wildlife habitat by restoring reclaimed wetlands, creating vernal pools, and propagating native plants. But FCAs also represent the need to accommodate wildlife and expand their access to habitats in developed areas. That need is expressed in such FCAs as creating new meadow habitat, creating artificial nesting opportunities, citizen science initiatives, and native plant propagation.

A monitoring program will be developed to determine the effectiveness that any conservation actions have in reducing the threats facing the District's wildlife and habitats. Indicators of success, in the form of performance measures, will be used to assess the status of those conservation targets. Adaptive management techniques will allow flexibility for improving the status of SGCN and achieving SWAP goals.

1.5.4 Stakeholder and Public Input

The creation of this document included comprehensive conservation planning and coordinated efforts to involve stakeholders and the public. The SWG program is meant to supplement state-level programs that aim to improve habitats and populations of both game and non-game wildlife species, but DOEE cannot lead and implement all of the conservation actions in this document alone. Implementation will require significant additional planning and coordination efforts. The many partners, landowners, and members of the public who have contributed to the development of the SWAP must continue to be involved throughout the entire process. The public is the focus of many of the conservation actions, such as education, outreach, and citizen science, and can assist with the implementation of additional conservation actions.


Anacostia Watershed Society Stewardship Program Specialist Jorge Bogantes Montero identifies a fern.

Conservation and wildlife stakeholders were engaged in the SWAP 2015 update through individuals and organizations who participated as subject matter experts on technical committees. These stakeholders made significant contributions to the development of this plan.

1.5.5 Conclusion

The District of Columbia's wildlife and their habitats face unique and varied challenges. The purpose of SWAP 2015 is to identify those challenges and recommend the actions necessary to conserve wildlife in the District. As this plan will demonstrate, the conservation measures needed to protect the District's wildlife are within reach. The tools and ability to improve the condition of wildlife populations in the District already exist. This expertise spans a variety of networks and partnerships that can be tapped as necessary.

SWAP 2015 is a community document designed for public use. It is a plan for the District as a whole—federal landowners, park managers, conservation organizations, legislators, business leaders, educators, and concerned individuals—not solely District government agencies. SWAP 2015 can provide a strong foundation and inspiration for anyone who seeks to conserve wildlife in the nation's capital. The information it contains should be widely disseminated. By itself, SWAP 2015 cannot guarantee the future of wildlife in the District, which has been—and will continue to be—under threat from many directions. However, it can help any agency or person who desires to undertake the necessary and important steps toward that goal.