

CHAPTER 1: INTRODUCTION TO THE STATE WILDLIFE ACTION PLAN

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 "The last word in ignorance is the man who says of an animal or plant, "What good is it?" If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of eons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering. - **Aldo Leopold**

Historical Context

Wildlife conservation responds to the challenges of the times. The original wildlife conservation movement began in the first half of the twentieth century in response to unregulated harvest for sporting and commercial purposes. During this period, several landmark federal laws were enacted, notably the Migratory Bird Treaty Act, the Pittman-Robertson Federal Aid in Wildlife Restoration Act, the Lacey Act, and the Dingell-Johnson Sport Fisheries Restoration Act. All were created following education campaigns by the conservation community.

State and federal fish and wildlife agencies grew rapidly, supported by increases in state and federal conservation funding. The United States Bureau of Sport Fisheries and Wildlife (now the United States Fish and Wildlife Service) was formed and state fish and wildlife agencies either developed from scratch or became greatly centralized and expanded, using revenue from a combination of state license fees and federal funding from excise taxes on sporting equipment. The resulting state fisheries and wildlife management programs were well established by the late 1960s and early 1970s and were largely game-oriented.

As times and conditions changed, new laws were enacted. In the early 1970s, the Endangered Species Act, Clean Water Act, and Clean Air Act all were developed and companion state laws and programs enacted. At the time, the South Carolina Department of Natural Resources (SCDNR) had a Nongame and Endangered Species Program, so to provide early direction to it, a statewide symposium on endangered species was held in 1976. At that meeting, committees of specialists in vertebrate taxa (mammals, birds, herpetofauna, and fish) were formed to provide information about species that had uncertain status or were believed to be in jeopardy (Forsythe and Ezell 1976). Out of this meeting came the formation of the nation's first Heritage Trust Program wherein the taxa committees continued to meet periodically and update the lists of species to be tracked under the Program. Rare plants were also added to the list of species tracked. The plight of nongame species had begun to be recognized and the fact that there was no comparable funding source to game species that would assist with research, surveys, and restoration projects. This would require planning and prioritizing species and actions. A national push for conserving the breadth of biodiversity had begun.

The charge to state wildlife agencies to develop comprehensive strategies had its origins in the Wildlife Conservation and Recreation Program (WCRP) that was created in the federal Appropriations Act of 2001. Appropriations language provided that funds may be used for "...the planning and implementation of [a state's] wildlife conservation and restoration program and wildlife conservation strategy, including wildlife conservation, wildlife conservation education,

and wildlife-associated recreation projects” (114 STAT. 2762A -118 PUBLIC LAW 106–553 — APPENDIX B — Title IX).

The WCRP appropriations language challenged the states to develop projects in the three major areas anticipated in the Teaming with Wildlife initiative: conservation, education, and recreation. WCRP appropriations language also provided that “Within five years of the date of the initial apportionment, [the states shall] develop and begin implementation of a wildlife conservation strategy based upon the best available and appropriate scientific information and data” Specific criteria for wildlife conservation strategies were developed. South Carolina committed to developing its “wildlife conservation strategy” within the required five years to qualify for WCRP funds.

WCRP was only funded for one year and was replaced in 2002 and subsequent years by the State Wildlife Grants Program (SWG), also through the appropriations process. Unlike WCRP, the SWG program emphasized conservation projects alone and charged the states “...to develop by October 1, 2005, a comprehensive wildlife conservation plan [strategy], consistent with criteria established by the Secretary of the Interior, that considers the broad range of the State, territory, or other jurisdiction’s wildlife and associated habitats, with appropriate priority placed on those species with the greatest conservation need and taking into consideration the relative level of funding available for the conservation of those species...” (115 STAT. 414 PUBLIC LAW 107-63 — APPENDIX A). The document that all states ultimately prepared in response to this mandate was referred to as a Comprehensive Wildlife Conservation Strategy (CWCS) or State Wildlife Action Plan (SWAP). As per Required Element 6 of the original legislation, all states made a commitment to review and revise their plans within 10 years. Over time, the Strategy became referred to as the State Wildlife Action Plans or SWAPs.

Since 2015, new initiatives have come forth to try to secure permanent and substantial funding for implementing the SWAPs. One of these initiatives has been the Recovering America’s Wildlife Act (RAWA) of 2021, which grew out of recommendations by the [Blue Ribbon Panel](#) of 2016. To match the magnitude of the problem, it was determined that \$1.3 billion was needed to invest in the conservation and restoration of species listed in SWAPs to avoid further declines in biodiversity. State wildlife agencies and conservation partners continue to push for its eventual funding. Figure 1-1 outlines the history of nongame funding initiatives resulting in SWAPs. Additional resources can be found at [Association of Fish and Wildlife Agencies \(AFWA\)](#).

South Carolina has made its SWAP action items, listed both in Chapter 9 and the Supplemental Volume under each species or guild, at scales that can be accomplished through State Wildlife Grants and those requiring the additional funding of RAWA. This “RAWA-ready” approach to South Carolina’s SWAP will make the transition to a larger implementation regime easier should funding be forthcoming.

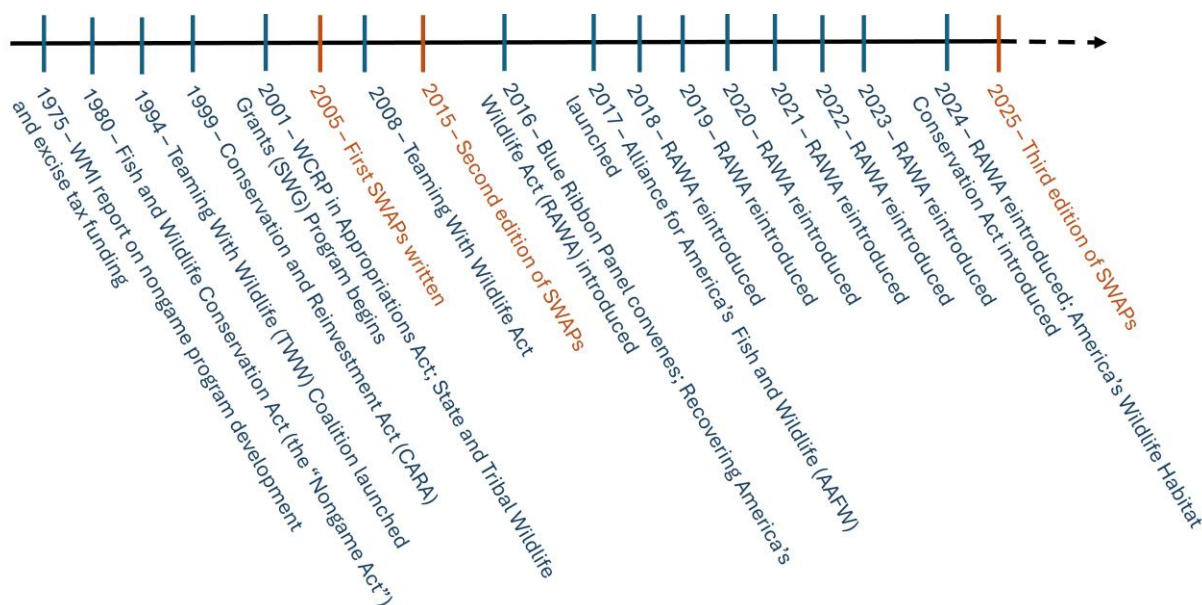


FIGURE 1-1: A timeline of conservation initiatives and funding proposals resulting in SWAP development and SWG funding and the push for additional SWAP implementation funding through RAWA.

Agency Authority and Capacity for SWAP Preparation and Implementation

South Carolina’s Constitution of 1895, as revised, mandates in Article XII, Section 1 that “the health, welfare, and safety of the lives and property of the people of this State and the conservation of its natural resources are matters of public concern.” Article III, Section 34 states in relevant part: “that the General Assembly is empowered to divide the State into as many game zones as may appear practicable, and to enact legislation that may appear proper for the protection of game in the several zones.”

Legislation creating the SC Department of Natural Resources and governing its activities is covered under Titles 48 and 50 of the SC Code of Laws. The entire code covers the generalities of operating the agency, as well as special laws pertaining to certain species, penalties, and subdivisions of the State. The most concise, broad charge to the SCDNR is found in the following sections:

§48-4-10 provides that “The South Carolina Department of Natural Resources is created to administer and enforce the laws of this State relating to wildlife, marine resources, and natural resources and other laws specifically assigned to it.”

§48-4-80. Provides for the creation of a Board to serve as “the governing body of the agency.”

§50-3-80 provides that the Department shall continuously investigate the game and fish conditions of the State and the laws relating thereto. It shall annually make report of its activities to the General Assembly and recommend legislation

and other action by the General Assembly in its judgment conducive to the conservation of wildlife.

Subsequent legislation provides assent to federal fish and wildlife restoration acts and authorizes the SCDNR to “perform such acts as they be necessary to the conduct and establishment of cooperative fish and wildlife restoration project(s) as defined in such act(s) of Congress...” Authorities under Title 50 include jurisdiction over saltwater fish and related activities.

In addition, Title 50 authorizes SCDNR to promulgate regulations relating to hunting, fishing, the taking and possession of wildlife, and provides for penalties relating thereto. Authorization is further extended to SCDNR to acquire and dispose of property, conduct hearings, and “own, sell, lease, exchange, transfer or rent real property” for purposes of carrying out its authorities. Concerning recreation, this authority extends to “furnishing the people of the State with hunting areas and fishing facilities.”

The South Carolina Nongame and Endangered Species Conservation Act (§50-15-10 et seq.) authorizes the Department to “...conduct investigations on nongame wildlife in order to develop information relating to population, distribution, habitat, needs, limiting factors and other biological and ecological data to determine management measures necessary for their continued ability to sustain themselves successfully.” The Act further authorizes SCDNR to issue regulations and “develop management programs designed to ensure the continued ability of nongame wildlife to perpetuate themselves successfully.”

A closely related statute establishes the South Carolina Heritage Trust Program (§51-17-10 et seq.). This legislation designates SCDNR as the lead agency to develop and conduct a program whose purpose is “protecting lands and making them available to state agencies, educational institutions and public and private groups” for several conservation purposes. The statute authorizes SCDNR to conduct inventories of lands having natural significance, acquire fee simple lesser interest in land, and establish strong legal protections for property thus acquired.

In 1994, the legislative mandate of the SCDNR was updated in a general reorganization of State government. Subsequently, SCDNR adopted the following mission statement:

The South Carolina Department of Natural Resources (SCDNR) is the advocate for and the steward of the State’s natural resources.

Within five divisions of SCDNR are numerous individual programs that are responsible for executing the mission in areas such as wildlife and fisheries management, endangered species management, marine fisheries conservation, education, ground and surface water management, soil and water conservation, habitat protection, and a broad array of law enforcement activities in addition to enforcement of fish and game laws. Therefore, from a legal and organizational standpoint, SCDNR was well equipped to lead the initial development of and continued execution of the various versions of the SWAP since its inception.

In October 2020, South Carolina passed the “Turtle Law” (§50-15-70) to regulate the collection, possession, and transfer of native turtles, all of which were SWAP Species of Greatest Conservation Need (SGCN) at the time the law was enacted. In March of 2024, SCDNR’s Natural Heritage database was granted a Freedom of Information Act (FOIA) exemption under §50-15-100, protecting the locations of the State’s sensitive species and habitats.



The men and women of SCDNR’s Law Enforcement Division are instrumental in protecting both game and nongame species within South Carolina’s jurisdictional boundary but also cooperating with neighboring states. Photo by SCDNR media staff.

South Carolina’s SGCN are utilized by SCDNR’s Office of Environmental Programs to advocate for avoidance and minimization of impact to sensitive species and their habitats through existing regulatory frameworks, such as the Federal Clean Water Act and Federal Energy Regulatory Commission processes and state regulatory authority related to mining, state navigable waters, water quality certification and coastal wetlands and tidelands. Additionally, the SWAP is utilized as a resource for environmental practitioners when developing habitat information for threatened and endangered species for Clean Water Act compensatory mitigation banking instruments and threatened and endangered species assessments associated with environmental impacts.

The Partner and Public Participation Process

Since the creation of the first SC SWAP in 2005 (the Comprehensive Wildlife Conservation Strategy or CWCS, as it was originally named), the SCDNR and SWAP planning team have sought to realize successful partnerships and public involvement in the creation and implementation of the Plan. It is understood that successful conservation is furthered by the existence of a strong collaborative involvement between all resource stakeholders, private or public, governmental or non-governmental. In July 2003, a Neighboring States meeting was held

in association with our regional Federal Assistance coordinators to discuss issues common to all as well as to develop an outline and format for our Action Plans. Participating states included Virginia, North Carolina, South Carolina, Georgia and Alabama. The model created was one of two used by the US Fish and Wildlife Service as an example for the rest of the nation to emulate.

The SCDNR retained the Clemson Institute for Economic and Community Development (CIECD) to manage and conduct the Public Participation Process with planning beginning in January 2004. The team used a parallel participation process (focus groups and public meetings) to ensure that both the professional and general public concerns and comments were separately heard and acknowledged. The team identified the issues of most prominent concern for wildlife conservation from both the perspective of agency staff and that of individuals and groups outside of the SCDNR. First, focus groups were developed to determine the wildlife conservation priorities of the SCDNR's partners. Representatives from partner groups were invited to share their ideas with the planning team. These partner organizations included federal and state agencies such as the United States Fish and Wildlife Service, the United States Forest Service, Clemson University, and the South Carolina Forestry Commission. Likewise, non-governmental organizations like The Nature Conservancy, South Carolina Sporting Protection League, South Carolina Native Plant Society, Safari Club International, and local land trusts were also involved. To ensure that SCDNR received input from partners with more diverse interests in wildlife conservation, other non-governmental organizations also participated in the focus groups including developers, local and county planners, professional foresters, and representatives from the agricultural community.

Five focus group meetings were held across the State in 2004 and were facilitated by our partners at Clemson Extension. Participants were invited via email and phone calls. The goal of these meetings was to identify general actions that would protect priority species in South Carolina and effective monitoring programs. After the focus group meetings, the SCDNR conducted four public meetings throughout South Carolina to allow all segments of the population to provide their opinions on priorities for wildlife conservation in the State. Announcements for the meetings were advertised in newspapers, mentioned on local television news reports, and an interview with the SWAP (CWCS) Coordinator was conducted by ETV radio. The information obtained through the focus groups allowed the SCDNR to be better prepared to answer questions that might arise during these public meetings. Public meetings were attended by representatives of groups similar to those present at the focus group meetings as well as members of the general public. The public meetings brought together a wider array of people and concerns. However, the dominant actions were similar to those stated in the focus groups: public education, land use planning, habitat acquisition and protection, research and monitoring, water quality protection, inter- and intra-agency collaboration, and landowner incentives. Therefore, in 2005, Conservation Action Committees were formed to further define main topics that came from the focus groups and public meetings. These became Conservation Action Areas (CAAs) and included eight topics: education and outreach, habitat protection, invasive and non-native species control, private land cooperation, public land management, survey and research needs, urban and developing lands. After the 2005 SWAP (CWCS) was completed, in 2006 SCDNR drafted an Implementation Plan which made suggestions for priority research. Many of these suggested topics went on to become State Wildlife Grant proposals that were chosen for funding and have been successfully completed.

While planning for the second edition of the SWAP (released in 2015), the topic of climate change was recognized as a ninth CAA. In 2012, the South Carolina State Climatology Office produced “The Climate Connection Workshop Series: Climate Variability and Impacts to South Carolina’s Natural Resources” which was held three times in three different locations across the State and attracted 151 total participants representing federal, state, and local governments; scientists; land and water resource managers; utility representatives; non-governmental organizations (NGOs); the media; private companies; and other interested stakeholders. The purpose of these workshops was to increase awareness and utilization of climate knowledge to improve natural resource management. There exists a genuine need for new approaches and partnerships to cope more effectively with climate variability. The series was advertised to the general public on the State Climatology Office’s website, but also invitations were sent to approximately 350 select individuals / organizations that had attended like conferences and workshops in the past. As with the 2005 focus groups and public meetings, workshops were strategically located across the State: Charleston, Columbia, and Greenville. Over 26 speakers participated. A PowerPoint presentation on the State Wildlife Grants program and South Carolina’s State Wildlife Action Plan (SWAP) was presented at each workshop. Feedback gathered from these workshops was distilled into meaningful action items for the 2015 SWAP by the editor and editing teams.

In 2013, an effort was made to better engage Indigenous Peoples (tribes), starting with South Carolina’s only federally recognized tribe residing in-state, the Catawba Indian Nation. Suggestions that came out of that initial meeting and subsequent ones for the 2025 edition are addressed in Chapter 7 of this SWAP. The draft 2015 SWAP was posted on the SCDNR’s website for public review for 35 days and constructive suggestions incorporated into the final Plan which was also posted online. After the advertised rollout of the 2015 SWAP edition, SCDNR’s Information Technology (IT) department began tracking usage of the various chapters of the SWAP by partners and the public. Based on this data and through feedback from partners, the 2025 revision was streamlined to remove non-essential, reporting-out portions and those actions that have already been implemented. The highest use of the SWAP occurred around grant proposal submittal windows when Project Investigators were citing specific information for their grants. Also, species that had recently been in the news were queried in the SWAP.

Throughout the intervening years before the 2025 revision began, a volunteer/citizen science website was created with opportunities for implementation of the SWAP. A display was created for use at school career days and agency events with representative SGCN from the five ecoregions and multiple taxa groups. Species and guild accounts found in the Supplemental Volume were utilized by grade-school and college students for projects highlighting South Carolina’s SGCN. The Southeastern Association of Fish and Wildlife Agencies (SEAFWA) Wildlife Diversity Committee had subcommittee discussions and planning for SWAP standardization across the states and oversaw the creation of Regional Species of Greatest Conservation Need (RSGCN) lists for both animals and plants. SCDNR expanded its tribal and cultural group engagement while also providing outreach and education to a Master Naturalist group wanting to learn to identify SGCN plants. The Natural Resources Conservation Service (NRCS) was educated on the SWAP through a year-long Learning Series highlighting species included in the 2015 SWAP (and to be included in the 2025 edition) by taxa group and habitat.

Final reports from research done since the inception of SWAPs was uploaded to the SCDNR SWAP website for information sharing with scientists. One of the biggest achievements that occurred relating to data gathering by partners to inform future SWAPs was the upgrading of the Natural Heritage Program database and creation of multiple sighting forms for use by the general public and found on an updated portal. This database upgrade was funded through a partnership with the South Carolina Department of Transportation (SCDOT).

The development of every South Carolina SGCN list for the past three SWAPs, as well as the species and guild accounts for listed species contained in the Supplemental Volume, has been a broad, collaborative effort through the years that has involved partners from all over the Southeastern United States and from every facet of natural history background. The taxa teams responsible for creating the species lists were selected from among agency staff but also included subject matter experts from universities, museums, other agencies, and conservation organizations. Taxa leaders often sought input from colleagues from all over the country. Without this vast network, the creation of the SGCN list would not have been possible.

Long-standing partnerships and new partnerships were formed for the 2025 SWAP chapter revision process too. The [Camo Coalition](#), begun in 2007, meets intermittently and is composed of 30 organizations that represent the outdoors/sportsman community which focuses on habitat and maintaining sporting traditions. On September 17, 2024, the SWAP Coordinator gave a virtual presentation to 12 members representing 8 participating organizations on the SWAP revision process and a request for review of Chapters 8 addressing action items. On October 16, 2024, the SWAP Coordinator repeated the presentation to the Conservation Leaders' Summit, a [coalition](#) composed of 48 organizations that meet annually to discuss natural and cultural resource alignment with economic development for proper environmental stewardship for South Carolina's citizens. Held on Seabrook Island, this meeting was attended by 50 participants representing multiple organizations in a SWAP break-out session. The South Carolina Wildlife Federation (SCWF) oversaw the compilation of partner comments from both coalitions. Relevant edits and suggestions were incorporated into the draft SWAP and went through a final internal review before being placed on the SCDNR's website for a 30-day public review period. A summary of this input is visualized in the timeline depicted in Figure 1-2. Implementation is discussed in more detail in Chapter 8 and a more extensive list of conservation partners can be found in Appendix 1. Appendix 6 includes the online content for the public review and associated survey.

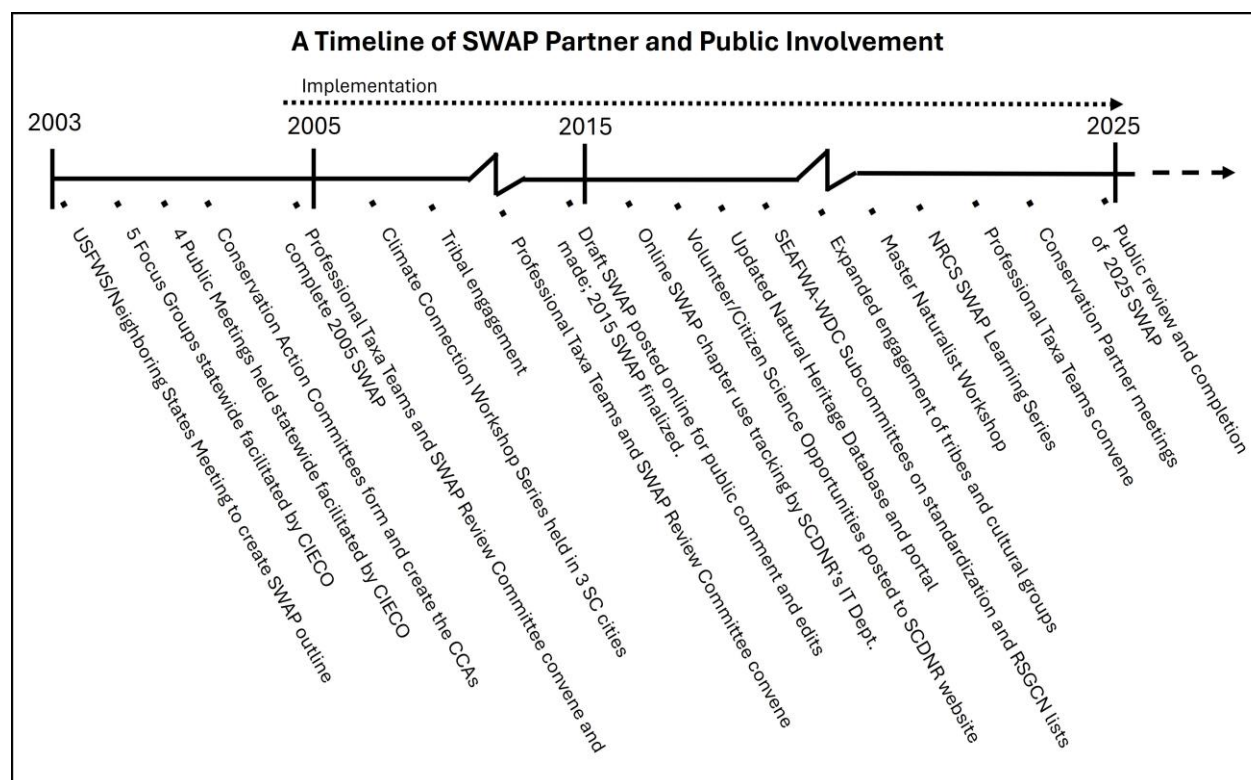


FIGURE 1-2: A timeline of public and partner participation in the creation and implementation of the SWAPs.

Changes to This Edition of the SWAP

The first edition of the SC SWAP was released in 2005 and was a written document that was published and distributed as requested. Threats to the species listed within this SWAP were acknowledged and action items identified. Subsequently, the 2015 edition reported on the progress made towards implementation of these action items and also included plants for the first time as SGCN. This edition was not printed but instead hosted on the SCDNR's website with a CD version available. Also, beginning in 2021, the Southeastern Association of Fish and Wildlife Agencies (SEAFWA) Wildlife Diversity Committee began the discussion through a subcommittee of how member states could better standardize their SWAPs. Products included a standard lexicon, a succinct methodology, utilizing the Southeast Regional List of Greatest Conservation Need (RSGCN) for both [animals](#) and [plants](#) as part of a regional chapter, and creating Conservation Opportunity Areas (COA) maps that follow hydrologic unit codes instead of geopolitical boundaries. These suggestions were incorporated into South Carolina's SWAP for this 2025 revision as well as a standardized threat list adapted from the Georgia Conservation Measures Partnership (CMP 2016).

Additionally, the parent Association of Fish and Wildlife Agencies (AFWA), in association with the United States Fish and Wildlife Service (USFWS), lead a 2023-2024 subcommittee to produce a guidance document; South Carolina's SWAP Coordinator was a member of this drafting subcommittee. Based on the May 2024 release of the Digital SWAP Interim Guidance (USFWS and AFWA 2024), South Carolina's 2025 will remain a web-hosted SWAP presented as a single document for download as a PDF or printed. There are two parts to South Carolina's

SWAP: (1) a main document with introductory material and overarching themes and (2) a supplemental volume containing species and guild (group) accounts for the SGCN. The Supplemental Volume – Species and Guild Accounts will be online only and appear as links to specific accounts.

As South Carolina's SWAP is meant to be web-hosted, new links have been added to point the reader to primary sources, mapping programs, initiatives, agency websites, and other planning documents. There are a multitude of other plans and initiatives within the State, Southeastern region, and nation, and therefore are referenced in Appendix 2 or in the Literature Cited sections of each chapter. As their content is extensive and often overlaps with or complements the SWAP, this 2025 edition of the SWAP will not duplicate efforts and will instead call attention to these additional resources. As South Carolina's SWAP has become well-known, it is often referenced in other State plans and initiatives and is often a required citation in grant applications aimed at land acquisition or restoration projects.

For the **2025 South Carolina State Wildlife Action Plan**, all statistics were updated as needed. A new geology section was added to further describe the unique landscape in South Carolina. The habitat chapter went through a complete re-write to better define vegetative classifications by ecoregion and incorporate more marine habitats. Threats and stressors were consolidated into a single chapter. Conservation actions and monitoring strategies that have been fulfilled or have become obsolete since the 2015 SWAP were removed from the text. Those that are ongoing are represented in the appropriate sections of this SWAP. A new cultural chapter draws attention to Indigenous peoples (tribal) relationships with South Carolina's flora and fauna. The Gullah/Geechee cultural community is also addressed in this chapter. A new chapter on international conservation was added to acknowledge cross-national conservation needs of some SGCN.

A revised methodology was introduced this revision cycle which first required a review of the subnational ranks (S-ranks; state ranks) of all species occurring in South Carolina and tracked through NatureServe. These are also important for NatureServe to receive as they are then used to inform global ranks (G-ranks) for the species. Using a rubric developed by the Southeastern Association of Fish and Wildlife Agencies Wildlife Diversity Committee's SWAP Standardization Subcommittee (SEAFWA-WDC 2022), of which the South Carolina SWAP Coordinator was a member, all S-ranks of native species of South Carolina were reviewed and edited as needed, and those that fit the criteria for SWAP inclusion were auto-sorted into priority bins of highest, high, moderate, and data deficient. The data deficient category is new for this SWAP iteration and helps capture those species prioritized for inclusion but for which not enough information is available to adequately sort into a defensible priority category. The new methodology resulted in some species from past iterations of the SWAP being dropped from the list of Species of Greatest Conservation Need (SGCN) and new ones being added. More information on this method revision can be found in Chapter 6, and the SEAFWA recommendations report can be accessed on Georgia Department of Natural Resource's [SWAP Revision Support website](#) where it is hosted. Additional species were added or subtracted due to new data on population trends. Taxonomic advances resulted in some species receiving common and scientific name changes. Lastly, some species changed priority bins, especially with the

addition of a fourth choice, “data deficient”, which was more descriptive than previously lumping these into the “moderate” category with other species with better known life histories.

The **Supplemental Volume – Species and Guild Accounts**, under separate cover, underwent a revision of each species account or guild account, and some new guilds were formed to better represent assemblages versus single-species accounts. These consolidations made both ecological and editorial sense. A new taxa group, freshwater sponges, was added this iteration of the SWAP. Table 1-1 summarizes the changes in species number by taxa from 2015 to 2025. Figures 1-3 and 1-4 visualize the change in taxa representation in the SWAP from the 2015 version to this 2025 edition. In the 2025 SWAP edition, there are 899 animals and 874 plants, for a total of 1,773 species. Overall, the number of SGCN more than doubled this iteration.

TABLE 1-1: Changes in Species Number by Taxa (2015-2025)

TAXA	2015	2025	Net Change
Mammals (including marine)	32	37	+5
Birds	164	80	-84
Herpetofauna (including marine)	54	69	+16
Freshwater Fishes	57	53	-4
Diadromous Fishes	6	6	0
Crayfishes	24	30	+6
Freshwater Shrimps	1	3	+2
Freshwater Mussels	28	23	-5
Freshwater Snails	3	16	+16
Leeches	4	6	+2
Freshwater Sponges	0	17	+17
Marine Fishes	37	79	+42
Marine Invertebrates	54	97	+43
Insects (& Allies)	32	383	+351
Plants	332	874	+542
TOTALS	828	1,773	+945

Insects and plants took on a much larger role in this 2025 edition as they are recognized for their importance in the base of the food chain. Insects and their allies are an extremely important taxa group for their roles in pollination, natural pest control, and decomposition (deMaynadier et al. 2024). In South Carolina, invertebrates (e.g. freshwater mussels) are animals and considered “wildlife” in state statute; therefore, by extension of that definition, so are insects and their allies. For this edition of the SWAP, even though most of the insects are data deficient, 42 distinct groups had members considered eligible SGCN. Having insects and related species included in the South Carolina SWAP provides visibility and encourages research and management efforts (deMaynadier et al. 2024) for this huge base of the food web and ecosystem. Already, some groups have been gaining attention since half of the Endangered Species Act (ESA)-listed insects are pollinators as their ranges have shrunk nationwide. It is estimated that 80-90% of pollinators are insects (NPS 2023) and 90% of flowering plants require pollination (EPA 2019), inextricably linking these two taxa groups together.

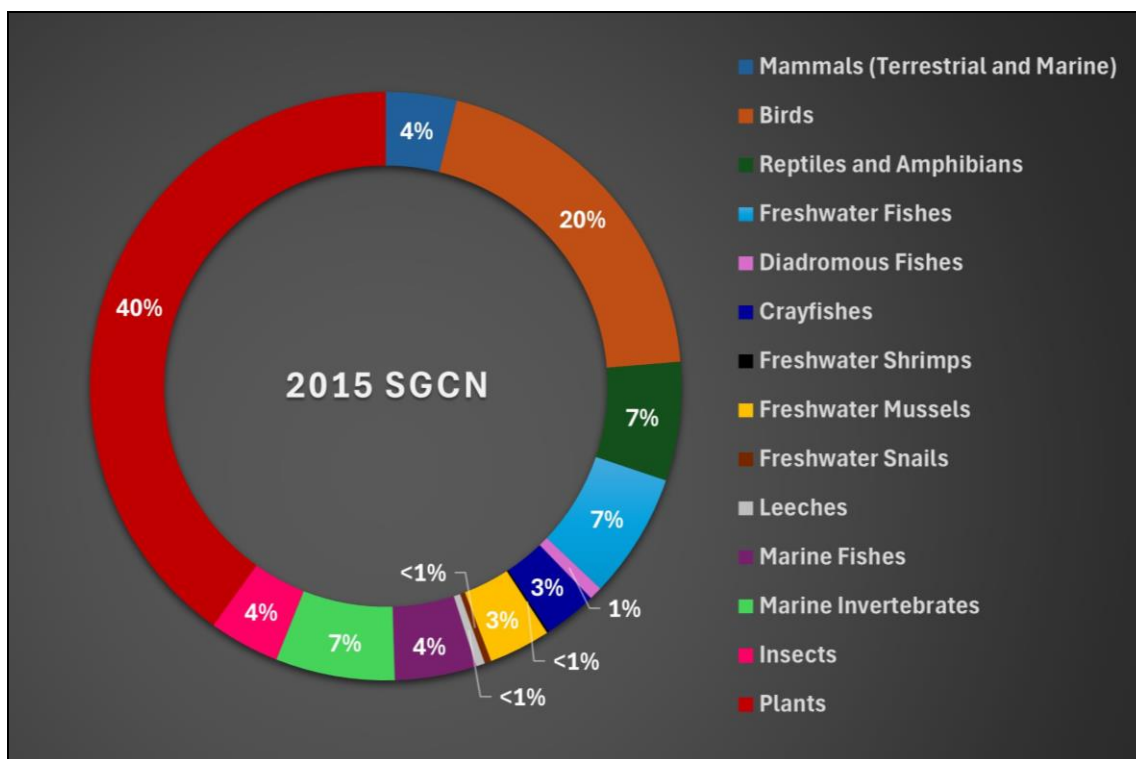


FIGURE 1-3: SGCN by taxa percentage appearing in the 2015 SWAP.
Note that freshwater sponges were not included in the 2015 Plan (0%) and are new for 2025.

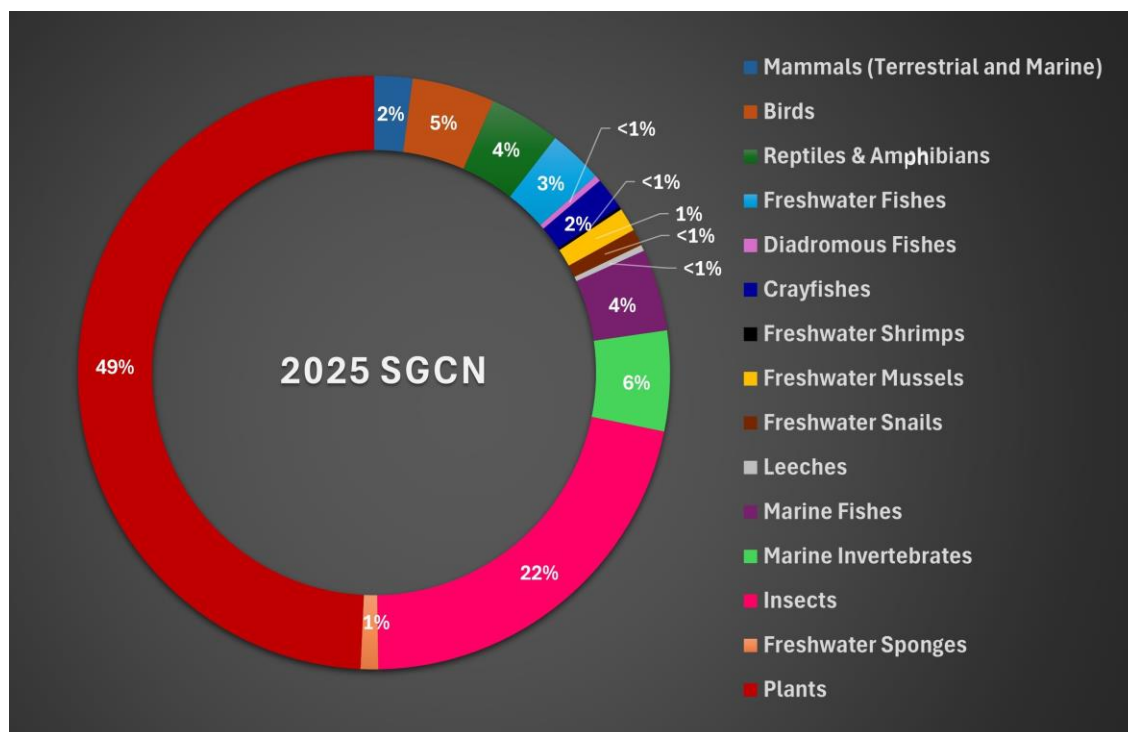


FIGURE 1-4: SGCN by taxa percentage appearing in the 2025 SWAP.
A new addition is the freshwater sponges taxa group.

The SCDNR has filed **Emerging Issues letters** in the past to address mid-cycle needs for such species as Monarch Butterfly and Carolina Hammerhead. This revision cycle, in June 2016, a letter was submitted to allow for the pooling of funds with other states to create the Southeast At-Risk Species (SEARS) Program through the SEAFWA Wildlife Diversity Committee. It was utilized to complete three projects before ending in 2018. In May 2021, the “Hanukkah” Darter (*Etheostoma binotatum*) was added to South Carolina’s SGCN list followed in July 2021 by the Monarch Butterfly (*Danaus plexippus*) utilizing Emerging Issues Letters. Additionally, the Gray Bat (*Myotis grisescens*), a federally endangered species, was discovered for the first time in Upstate South Carolina in August 2023. An Emerging Issues letter was filed in 2024 so that SWG funding could be utilized to study this population.



Carolina Hammerhead. Photo by James Strange, SCDNR.

Interestingly, the “Hanukkah” Darter was suspected to be a genetically distinct species needing to be addressed alongside its already SGCN-listed kin. The Monarch Butterfly is now being considered for federal listing under the ESA. However, only the Monarch Butterfly now appears in this 2025 version of the SC SWAP. The Christmas Darter in South Carolina’s 2015 SWAP occurs in the Savannah basin (Georgia / South Carolina) as well as the Altamaha River basin of Georgia. For a long time, ichthyologists have recognized that the one occurring in the Savannah and the one in the Altamaha appear physiologically different and are probably distinct species. The Savannah form has been proposed in some literature as the “Hanukkah” Darter (*E. binotatum*). However, this has not yet universally been officially accepted (i.e. the American Fisheries Society names committee did not include it in their most recent [2023] version). If and when this “split” becomes official, South Carolina’s form of this fish will be re-named the Hanukkah Darter while the Christmas Darter will be retained by the Altamaha fish. Therefore, at this time, the Hanukkah Darter is not be listed in the 2025 SWAP.

The SCDNR enlisted the help of Southeast Conservation Adaptation Strategy (SECAS) staff to draft Chapter 10: South Carolina: A Regional Perspective which addresses how South Carolina is doing its part to achieve success in the Southeast. Landscape-level topics include habitat connectivity across geopolitical boundaries, climate change modeling for the Southeast, Sentinel Landscapes, habitat restoration (to help reach SECAS report card goals), and RSGCN responsibility.

SWAP Organization and the Eight Required Elements

South Carolina’s State Wildlife Action Plan is organized to first make the reader aware of the need for a strategy with its prioritization of species, an introduction to South Carolina’s unique landscape, and then to discover how the actual Plan was developed and is being implemented. Each state’s SWAP must identify and prioritize “Species with the Greatest Conservation Need”

(SGCN), yet still address the “full array of wildlife” and wildlife-related issues. They must provide and make use of the core required elements identified in Box 1-1.

Box 1-1: The Eight Required Elements

1. 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.
2. Descriptions of **locations and relative condition of key habitats and community types** essential to conservation of species identified in item 1.
3. Descriptions of **problems** which may adversely affect species identified in item 1 or their habitats, and priority research and survey efforts needed to identify factors which may assist in restoration and improved conservation of these species and habitats.
4. Descriptions of **conservation actions** proposed to conserve the identified species and habitats and priorities for implementing such actions.
5. Proposed plans for **monitoring species** identified in item 1 and their habitats, for monitoring the effectiveness of the conservation actions proposed in item 4, and for adapting these conservation actions to respond appropriately to new information or changing conditions.
6. Descriptions of **procedures to review the plan** at intervals not to exceed ten years.
7. Plans for **coordinating** the development, implementation, review, and revision of the plan with Federal, State, and local agencies and Native American tribes that manage significant land and water areas within the State or administer programs that significantly affect the conservation of identified species and habitats.
8. **Public participation** during development and implementation of the Plan.

The contents in the main body of the SWAP are summarized as follows:

- **Chapter 1:** A discussion of the need for the SWAP, timeline of its creation, and the legislative mandate that allows SCDNR to develop and implement such a strategy is presented. This chapter also emphasizes the role of public participation in both the creation and implementation of the SWAP. The SCDNR formed extensive partnerships during the initial development of the SWAP and has retained them through past and current revision processes. The organizational layout and roadmap to the Eight Required Elements are defined. Also, changes to this edition of the SWAP are identified.
- **Chapter 2:** A picture of South Carolina’s landscape is presented through descriptions of the basic ecoregions found therein, aquatic resources, soils composition, geology, typical climate, ecosystem functionality (connectivity, resiliency, carbon sequestration, natural fire return intervals), land ownership patterns (public vs. private), demographics, economics, urbanization trends, and military presence. The State’s conservation portfolio is explained through the conservation biology principles of resiliency, redundancy, and representation (collectively known as the “3 Rs”). Carbon sequestration and fire return intervals further define the landscape of the State and the resulting habitats.
- **Chapter 3:** The various habitat types found in the State are defined by ecoregion with priority habitats emphasized. These habitats have various scales from coarse to fine, but all help determine the Conservation Opportunity Areas (COAs) summarized in a map

representation (in Chapter 8) that focuses research/survey efforts, land acquisition, and restoration projects.

- **Chapter 4:** The reader is introduced to the state of the 16 taxa groups covered in this SWAP, threats facing them from a whole taxa perspective, and opportunities available to mitigate for these threats.
- **Chapter 5:** Following the taxa group descriptions and threats specific to these groups, this chapter takes a wider view of 19 threat categories and their secondary impacts common to most of the species identified as SGCN in the South Carolina SWAP.
- **Chapter 6:** The methodology used to identify South Carolina's priority wildlife species that appear as SGCN in this SWAP is discussed and a spreadsheet listing the 1,773 SGCN are the main substance of this chapter.
- **Chapter 7:** Some of South Carolina's SGCN and priority habitats are also of cultural significance, and this chapter emphasizes the connection between these and cultural groups. These include the Indigenous Peoples (Tribes) with ancestral ties to the State and the Gullah-Geechee Nation of African descent residing in the Lowcountry of South Carolina.
- **Chapter 8:** The Conservation Opportunity Areas map provided in this chapter visually represents focus areas for land acquisition. Also, actions proposed to mitigate threats and stressors identified in both Chapter 5 and in individual species/guild accounts are outlined by seven broad topic groups known as Conservation Action Areas (CCAs): Land Management, Invasive and Non-native Species Control, Habitat Protection and Restoration, Education and Outreach, Partnerships and Collaborations, Research and Survey, and Regulatory Actions. These actions are more comprehensive in their approaches and are both habitat-based and species based. Also, effectiveness monitoring of these actions is addressed. A list of ongoing monitoring programs and projects in South Carolina is provided.
- **Chapter 9:** SWAP Implementation comes in the form of technical research and survey work done by conservation partners and academia, land acquisition and habitat restoration by state agencies and partners, and through the conservation efforts of the general public. The Plan review and revision process is explained as well as hopes for future improvements as science and technology provide new mechanisms for tracking and managing species and habitats. The grant funding mechanisms associated with implementing the SWAP—State Wildlife Grants and Competitive State Wildlife Grants—are explained and summaries/abstracts of completed projects are provided, representing successes in implementation.
- **Chapter 10:** South Carolina's role in the landscape continuum of the Southeast is addressed. Topics shared with other Southeastern states include Regional Species of Greatest Conservation Need (RSGCN), fire return intervals, and climate change impacts. Species vulnerability and resilience are addressed.
- **Chapter 11:** As some species do not complete their entire life cycles within the United States, a final chapter on International Conservation is included to draw attention to these species and the fact that management of them is made more difficult by their trans-national migrations.
- **Appendices** associated with the SWAP include a list of conservation partners; a list of conservation plans and initiatives; lists of non-native invasive plants and animals; a more

detailed explanation of the selection process for Freshwater Fish SGCN; and the methodology for the public review and survey process.

A **Supplemental Volume – Species and Guild Accounts** is also part of this State Wildlife Action Plan. The Supplemental Volume contains “mini recovery plans” for the SGCN (priority species) which include a description of the distribution and abundance of each species and its habitat requirements, the challenges that the species faces, and specific conservation actions for addressing those challenges. Additionally, some of these reports discuss ways to work with public and private entities toward conservation as well as strategies for monitoring species, habitats, and effectiveness of conservation actions. When species share similar habitats or life history traits, they are assembled into guilds for ease of discussion.

The Supplemental Volume to South Carolina’s SWAP provides a unique look into challenges and conservation actions that pertain to each of the species on this state’s SGCN list. By providing species-specific actions, the SCDNR can use the SWAP in two ways: (1) to manage species of concern over large areas or habitat and (2) to manage particular species in any habitat where that species occurs, no matter the size of the management area. Further, the species-specific or guild-specific approach in the Supplemental Volume allowed for the development of very concise conservation actions for each species or grouping, which are expected to permit SCDNR or its partners to easily convert those actions to project proposals/plans.

Roadmap to the Required Elements in South Carolina’s SWAP

As part of the national guidance, states are instructed to highlight the location of information specific to the eight elements so that reviewers of the SWAP can easily locate them. Therefore, Table 1-2 presents this information.

TABLE 1-2: Roadmap to the Eight Required Elements in the SC SWAP

ELEMENT	SC SWAP CHAPTER	LOCATION
1. SGCN identified	Chapter 1	some discussions p. 1-10 to 1-13
	Chapter 6	methodology throughout chapter; Table 6-2
	Supplemental Volume	by species/guild account
2. Location and relative condition of key habitats	Chapter 3	entire chapter
	Supplemental Volume	by species/guild account
3. Threats to SGCN	Chapter 4	entire chapter
	Chapter 5	entire chapter
	Appendices 3A, 3B, & 4	entire lists
	Supplemental Volume	by species/guild account
4. Conservation actions described	Chapter 8	entire chapter (state/local scale)
	Chapter 11	entire chapter (national/international scale)
	Supplemental Volume	by species/guild account
5. Monitoring and adaptive management implementation	Chapter 8	monitoring: p. 8-24 to 8-26; Table 8-2
	Chapter 9	adaptive management: p. 9-4 to 9-6
	Supplemental Volume	by species/guild account
6. Review and revision process for the SWAP	Chapter 9	p. 9-6 to 9-7
7. Coordinating with agencies and Native American	Chapter 1	p. 1-5 to 1-8
	Chapter 7 (Cultural Chapter)	Tribal & Gullah Geechee: entire chapter

tribes.	Chapter 8	see action items throughout chapter
	Chapter 9	coordination: throughout chapter
	Appendix 2	partner list
8. Public participation	Chapter 1	p. 1-5 to 1-8
	Chapter 9	p. 9-6
		<i>See also Element #7 listings</i>

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