

CHAPTER 1: INTRODUCTION

Problem and Need

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, a number of 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 US Bureau of Sport Fisheries and Wildlife (now the US 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 1960's and early 1970's and were largely game-oriented.

Beginning in the 1970's, the challenges associated with sustaining wildlife populations began to change dramatically. Many states, including South Carolina, entered a period of rapid economic expansion and human population growth. During this period, the state's economy began to shift away from agriculture. Migration into the state increased greatly and a shift away from rural communities toward urban population dominance began.

Statewide, over 100,000 acres per year were converted to urban uses from 1992 to 1997, making South Carolina the ninth-ranked state in terms of total land area developed annually (USDA 1997). According to the same report, the growth rate from 1982 to 1992 was only 40,000 acres per year. The recent urban land conversion rates represent a major burst of growth; this development trend continues today.

Strong economic forces are also transforming South Carolina's agricultural economy. Rising costs, coupled with falling prices are creating hardships for many family farms. As of 1997, there were approximately 4.5 million acres in agricultural production in South Carolina, representing an 18 percent drop since 1982. Long-term declines in farmland are even more dramatic: in 1954, 124,203 farms were producing goods in South Carolina and 57.1 percent of the land in the state consisted of farms. By 1992, the number of farms in the state had been reduced to 20,242, representing 23.2 percent of South Carolina's land use (SC Department of Research & Statistical Services 1998).

As land use is converted from rural to urban uses and the population of South Carolina increases, new challenges are evident to fish and wildlife species in the state. Additionally, long-standing downward trends in numbers of some species that previously had been overlooked have become evident. In a recent state-by-state analysis of biodiversity conducted for The Nature Conservancy, South Carolina ranked 14th among all states in total number of native plant and animal species and 15th in terms of risks to native species (NatureServe 2002). In a planning

exercise conducted in 1994, DNR biologists estimated that as many as one third of the state's vertebrate species are now, or soon will be, experiencing serious declines (SCDNR 1994).

As times and conditions changed, new laws were enacted. In the early 1970's, the Endangered Species Act, Clean Water Act and Clean Air Act all were developed and companion state laws and programs were enacted. In order to provide early direction to the South Carolina Department of Natural Resources (SCDNR) Nongame and Endangered Species Program, a statewide symposium on endangered species was held in 1976. At that meeting, committees of specialists in vertebrate taxa (mammals, birds, reptiles and amphibians, fish) were formed to provide information about species that had uncertain status or were believed to be in jeopardy (Forsythe and Ezell 1976). These expert committees have continued to meet periodically and update these lists.

The SCDNR continues to support a large number of conservation initiatives on public and private lands, including habitat protection; technical guidance and cost sharing; and education. A statewide wildlife strategy would align all conservation activities with common goals that can be consulted by all South Carolinians, especially resource managers, local governments, and the scientific community. The State Wildlife Grants program provides a vehicle to create such a strategy.

In order to sustain South Carolina's diverse wildlife resources in the future, the following actions are critical: (1) increase baseline biological inventories with emphasis on natural history, distribution and status of native species; (2) increase commitment by natural resource agencies, conservation organizations and academia toward establishing effective conservation strategies; (3) increase financial support and technological resources for planning and implementation of these strategies; and (4) create public-private partnerships and educational outreach programs for broad-scale conservation efforts. This Strategy is a first step toward instituting these actions.

Legislative Mandate and Guidance

The charge to state wildlife agencies to develop comprehensive strategies has 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 the wildlife conservation strategies were developed. South Carolina committed to developing its Wildlife Conservation Strategy within the required five years in order 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 emphasizes conservation projects alone and charges 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 is referred to as a Comprehensive Wildlife Conservation Strategy (CWCS).

Roadmap to Required Elements in South Carolina's CWCS

Congress identified the required elements of the strategies in the WCRP legislation and the USFWS adopted those same elements to also apply to the SWG required CWCS, so one document will satisfy both needs. The CWCS must identify and be focused on the "species in greatest need of conservation," yet address the "full array of wildlife" and wildlife-related issues. They must provide and make use of the elements identified in Box 1-1: The Eight Required Elements. This original guidance has been expanded considerably during the course of CWCS preparation; however the eight elements remain the core standard for the strategies.

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 (1).
- 3) Descriptions of problems, which may adversely affect species identified in (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 determined to be necessary to conserve the identified species and habitats and priorities for implementing such actions.
- 5) Descriptions of the proposed plans for monitoring species identified in (1) and their habitats, for monitoring the effectiveness of the conservation actions proposed in (4), and for adapting these conservation actions to respond appropriately to new information or changing conditions.
- 6) Descriptions of procedures to review the Strategy/Plan at intervals not to exceed ten years.
- 7) Descriptions of the plans for coordinating, to the extent feasible, the development, implementation, review, and revision of the Plan/Strategy 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.
- 8) Descriptions of the necessary public participation in the development, revision, and implementation of the Plan/Strategy.

As part of the additional guidance received, States were instructed to highlight the location of information specific to the eight elements for reviewers of the CWCS. Therefore, Table 1-1: Roadmap to the Required Elements presents this information. As will become more evident in later chapters of this CWCS, the Supplemental Volume submitted with this Strategy contains reports for the species included on South Carolina’s Priority Species List as well as reports for the habitats of each of the five ecoregions in this state. Each of these reports includes a description of the distribution and abundance of the species/habitat, the challenges that the species/habitats face 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. All of the information presented in these reports is summarized in the body of South Carolina’s CWCS in the chapters and, in some cases, page numbers identified in Table 1-1.

TABLE 1-1: ROADMAP TO THE REQUIRED ELEMENTS

Element	NAAT Statement	SC CWCS Chapter	Page Number
1: Distribution and abundance of species	a. Sources of information	Chapter 2; Supplemental Volume	Throughout chapter; Entire Supplemental Volume
	b. Abundance and distribution	Chapter 2; Supplemental Volume	Throughout chapter; Entire Supplemental Volume
	c. Low and declining populations	Chapter 2; Supplemental Volume	Throughout chapter; Entire Supplemental Volume
	d. All wildlife groups included or statement of why not included	Chapter 2; Supplemental Volume	Page 2-1, 2-2; Entire Supplemental Volume
	e. Processes for species selection	Chapter 2	Pages 2-6, 2-9, 2-13, 2-17, 2-21, 2-24, 2-28, 2-32, 2-34, 2-36
2: Location/relative condition of key habitats	a. Explanation of level of detail	Chapter 3; Supplemental Volume	3-3, 3-5 Habitat Accounts
	b. Key habitats and their condition described	Chapter 3; Supplemental Volume	3-4 through 3-15 Habitat Accounts
3: Problems that affect species	a. Sources of information	Chapter 2; Supplemental Volume	Throughout chapter Literature Cited in Supplemental Volume
	b. Threats described in detail to allow focused conservation actions	Chapter 4; Supplemental Volume	Throughout chapter; Entire Supplemental Volume
	c. Considers threats regardless of origins	Chapter 4; Supplemental Volume	Throughout chapter; Entire Supplemental Volume
	d. Research and survey efforts identified	Chapter 4; Supplemental Volume	Page 4-15 through 16; Entire Supplemental Volume
	e. Priority research and survey needs described to allow development of projects	Chapter 4; Chapter 5; Supplemental Volume	Page 4-15 through 16 Page 5-3 through 5-6 Entire Supplemental Volume

TABLE 1-1: ROADMAP TO THE REQUIRED ELEMENTS (CONTINUED)

Element	NAAT Statement	SC CWCS Chapter	Page Number
4: Conservation actions described	a. Conservation actions address threats to species and habitats	Chapter 5; Supplemental Volume	Throughout chapter; Entire Supplemental Volume
	b. Conservation actions guide implementation through development and execution of projects and programs	Chapter 7 Supplemental Volume	7-3 through 7-5 Entire Supplemental Volume
	c. Conservation actions linked to objectives and indicators	Chapter 4; Supplemental Volume	Table 4-3, pages 4-20 through 4-34; Entire Supplemental Volume
	d. Conservation actions that can be addressed by other agencies described	Chapter 4; Supplemental Volume	Entire Chapter Entire Supplemental Volume
	e. Research or survey needs for obtaining information to develop actions is described	Chapter 4; Chapter 5; Supplemental Volume	Page 4-15 through 16 Page 5-3 through 5-6 Entire Supplemental Volume
	f. Priority of conservation actions	Chapter 4; Chapter 7	Table 4-3, pages 4-20 through 4-34 Pages 7-1 through 7-3
5: Plans for monitoring and adaptive management	a. Monitoring species and habitats	Chapter 5; Supplemental Volume	Pages 5-6 through 5-8 Supplemental Volume
	b. Monitoring outcomes of conservation actions	Chapter 5; Supplemental Volume	Page 5-10 Supplemental Volume
	c. Explanation for not monitoring a species or species group	Chapter 5	Pages 5-6 through 5-10
	d. Levels of monitoring	Chapter 5	Pages 5-6 through 5-10
	e. Utilizing existing programs or obtaining new information for effectiveness of conservation actions	Chapter 5; Appendix 4	Pages 5-2 through 5-3 Appendix 4
	f. Monitoring considers geographic scale	Chapter 5	Page 5-5
	g. Strategy is adaptive	Chapter 5; Chapter 7	Pages 5-6 through 5-10 Page 7-5
6: Review/revise Strategy	a. Process for reviewing Strategy	Chapter 7	Pages 7-5 through 7-6
7: Coordinating with federal, state and local agencies and Indian tribes	a. Coordination efforts for development of the Strategy described	Chapter 6	Entire Chapter
	b. Continued coordination efforts described	Chapter 6	Entire Chapter

TABLE 1-1: ROADMAP TO THE REQUIRED ELEMENTS (CONTINUED)

Element	NAAT Statement	SC CWCS Chapter	Page Number
8: Public participation	a. Efforts to involve the public in development of the Strategy described	Chapter 6	Page 6-1 through 6-2
	b. Continued public involvement is described	Chapter 6; Supplemental Volume	Pages 6-2 through 6-4

CWCS Organization

The CWCS is organized to first make the reader aware of the need for the Strategy then to discover how the actual CWCS was developed and presented. In the **Introduction**, a discussion of the need for the CWCS and the legislative mandate that allows SCDNR to develop and implement the strategy is presented. The selection of South Carolina's priority wildlife species is discussed in the **Priority Species** chapter, along with the methods for prioritizing those species and the challenges they face. The condition and location of habitats and challenges to management of those habitats is presented in **South Carolina's Landscape**. The conservation strategies that will be implemented to address the challenges identified in the two previous chapters is discussed in detail in **Statewide Conservation Strategies**; the eight conservation action areas around which strategies will be constructed are also presented in that chapter. After listing conservation actions to address species and habitat challenges, the manner in which they will be monitored is contained in the **Comprehensive Monitoring Program** chapter. Strategies for monitoring the effectiveness of conservation actions are also discussed. SCDNR has formed extensive partnerships during development of the CWCS; these partnerships are discussed in the **Partnership Development** chapter. The manner in which SCDNR prioritized conservation actions, will implement the conservation actions in the CWCS and adapt the Strategy as new information becomes available is presented in the **Prioritization, Implementation and Adaptive Management** chapter. Finally, we include a list of references in the **Literature Cited**, a **Glossary** and **Appendices** associated with the CWCS.

As stated above, a **Supplemental Volume: Species and Habitat Accounts** is submitted with this Strategy. The Supplemental Volume contains reports for the species included on South Carolina's Priority Species List as well as reports for the habitats of each of the ecoregions in this state. Each of these reports includes a description of the distribution and abundance of the species/habitat, the challenges that the species/habitats face 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.

The Supplemental Volume to South Carolina's CWCS provides a unique look into challenges and conservation actions that pertain to each of the species on this state's Priority Species List. By providing species-specific actions, the SC DNR can use the CWCS 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 approach in the Supplemental Volume allowed for development of very concise conservation actions for each species, which are expected to permit SC DNR or its partners to easily convert those actions to project proposals/plans.

Authority and Capability of the SCDNR to Prepare and Implement the CWCS

Article III, Section 34, South Carolina Constitution, 1895, as revised, 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, 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 insure the continued ability of nongame wildlife to perpetuate themselves successfully.”

Subsequent sections of the Act set forth administrative procedures for developing regulations, penalties for taking and possession of nongame wildlife considered by SCDNR under this Act to be endangered. The Act also provides that the agency will maintain lists of endangered species and amend them periodically. The Act further authorizes SCDNR to establish programs, including “acquisition of land or aquatic habitat, as are deemed necessary for management and endangered wildlife.” Further, SCDNR is authorized to enter into cooperative agreements for purposes of carrying out its responsibilities under the Act.

Criteria for listing species as endangered under the state statute closely follow those for the federal Endangered Species Act. A second category, “Species in Need of Management,” is also provided for recognizing and providing less stringent protection for species whose status does not warrant listing as endangered. Under the “species in need of management” category, SCDNR is charged with conducting ongoing investigations of nongame wildlife in order to determine which species are in need of management and for developing programs for their management in order to “sustain themselves successfully.” This section of the statute roughly parallels that of the federal statute dealing with threatened species; however, the intent of the state statute is not only to provide listing authority, but also to establish authority for SCDNR to engage in conservation activities in addition to or in lieu of, formal listing and regulatory actions.

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 a number of 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 are 34 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 is well equipped to lead the development and execution of the CWCS.