

CHAPTER 2: SOUTH CAROLINA'S PRIORITY SPECIES (SPECIES OF GREATEST CONSERVATION NEED)

In setting priorities for the SWAP, two separate but equally important prioritization processes were conducted. It was necessary to determine which species in the State should be placed on the list of South Carolina's priority species—"species of greatest conservation need" (SGCN)—and those species would need to be ranked based on existing data and expertise associated with those species. Additionally, the priority for implementing conservation actions to address challenges to SGCN needed to be determined. The following identifies how the South Carolina Department of Natural Resources (SCDNR) conducted the prioritization process of both species and conservation actions to address the needs of those species.

Species Prioritization

The State Wildlife Grants (SWG) program established funding for species not traditionally covered under federal funding programs. To qualify for these funds, each state was mandated to develop a strategy/plan with a focus on "species of greatest conservation concern;" guidance was provided to the states to begin identifying these species. For the first iteration of the Plan, completed in 2005, SCDNR recognized the importance of including species that are currently rare or designated as at-risk, those for which we have knowledge deficiencies, and those that have not received adequate conservation attention in the past. Additionally, SCDNR included species for which South Carolina is "responsible," that is, species that may be common in our state, but are declining or rare elsewhere. SCDNR also included species that could be used as indicators of detrimental conditions. These indicator species may be common in South Carolina; however, changes in their population status would likely indicate stress to other species that occur in the same habitat.

The diversity of animals in South Carolina is vast (Fig. 2-1). Habitats in this state range from the mountains to the ocean and include many different taxonomic animal groups. SCDNR wanted to address as many of those groups as possible for inclusion in the list of priority species (also referenced as SGCN) for the SWAP. Therefore, 15 taxonomic groups are included in the Strategy: mammals, birds, reptiles, amphibians, freshwater fish, diadromous fish, marine fish, marine invertebrates, crayfish, freshwater shrimp, freshwater mussels, freshwater snails, leeches (freshwater, marine, and terrestrial), insects (freshwater and terrestrial), and plants. Both leeches and plants are new additions to the 2015 SWAP. Though not a requirement of the SWG program, the inclusion of plants is a proactive response to the need for landscape-level management, wherein plants are an integral component. Plants are not eligible for funding under the SWG Program but are of concern nonetheless. Other taxonomic groups that are excluded from this version of the SWAP may be included in future revisions of the Action Plan as additional information and experts specific to those groups are identified.

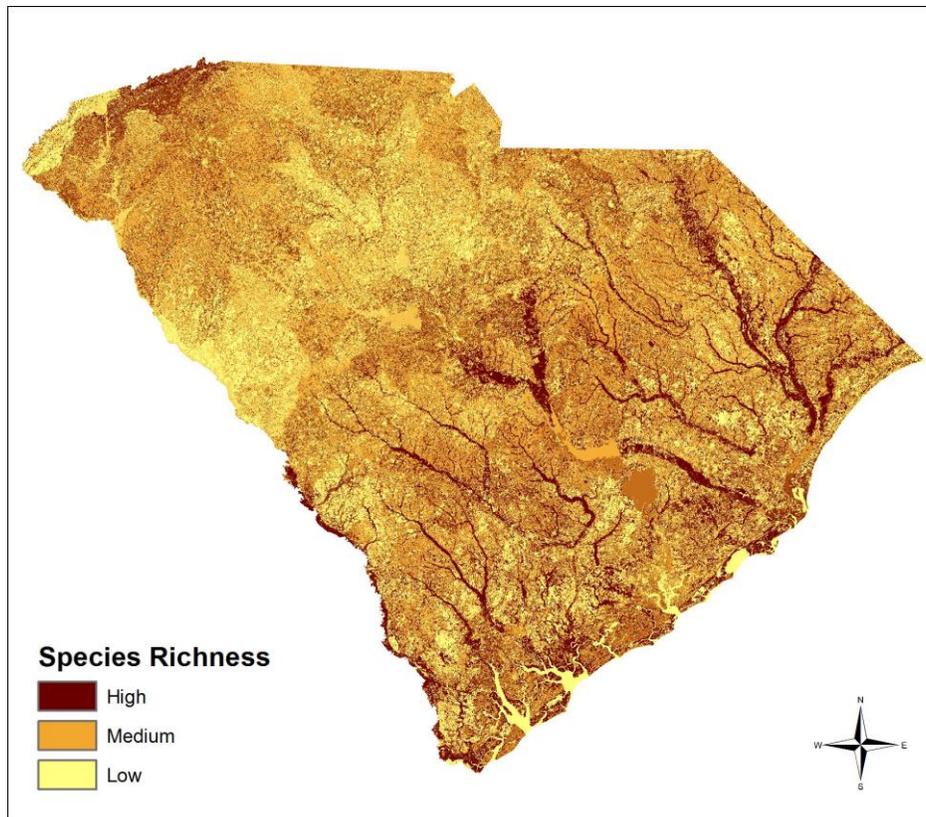


FIGURE 2-1: Total species richness in South Carolina

After the 15 taxonomic groups were identified, a taxa leader was appointed that managed the process for identifying priority species for conservation within that group. This leader formed a committee of experts for the particular taxa. First, the committee reviewed a list of all known species within that group that are found in South Carolina. The SCDNR maintains lists of rare, threatened and endangered plants and animals as part of the Heritage Trust and Endangered Species programs. One list comprises species that are officially designated as endangered or in need of management (threatened). This list was created under the SC Nongame and Endangered Species Act, and applies only to animals; it can only be modified through the regulatory process. The second list comprises species, both plants and animals, thought to be rare, declining, or their population status is unknown. These are termed “Species of Concern,” and correspond to the “Watch List” species in other states. The Species of Concern list does not carry the weight of law and is used only as a conservation tool to assist in protection planning and to direct research and survey efforts.

There are various other definitions assigned to species indicating rarity, extinction risk, or trends that may be discussed within the various species or guild accounts in the SWAP's Supplemental Volume and may cause some confusion for the reader. Within the federal government, there are Threatened and Endangered species which are protected under the Endangered Species Act (ESA). In addition, other designations exist. "At-Risk Species" are those species (plants and animals) that have either been proposed for listing, are candidates for listing, or have been petitioned for listing under the ESA. Candidate species are those species (plants and animals) for which the Service has sufficient information on their biological status and threats to propose

them as Threatened or Endangered under the ESA but for which the development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species receive no statutory protection under the ESA, but the Service encourages their consideration in environmental planning. Although not required by law, it is the Service's policy to monitor candidate species. Organizations also have their own priority designations such as Partners In Flight's (PIF) Watch List species, the International Union for Conservation of Nature's (IUCN) Red List Species, and NatureServe's state and global rankings (S and G ranks). Various reports also include their own scoring systems with associated tiers of species.

After the species lists were assembled, SCDNR developed a list of 9 criteria for consideration in the determination of priority species and are presented in Box 2-1. It should be noted that some taxa groups had more data available than others to utilize when listing and ranking their species of concern so more than these 9 factors could be considered by the various taxa groups when making their decisions.

BOX 2-1: NINE CRITERIA USED FOR DETERMINATION OF SGCN

- State and federal protection status: endangered, threatened, rare or special concern
- South Carolina Natural Heritage Program state rank: S1 through S5
- Degree of exploitation/harvest: high, medium or low
- Availability of past or current funding to address species challenges
- Feasibility measure: the likelihood that conservation activities in South Carolina can make a difference for this species
- Knowledge of the species' population status: status mostly known, slightly known or unknown
- Knowledge of species' distribution in the state: distribution mostly known, slightly known or unknown
- Knowledge of limiting factors affecting the species: limiting factors mostly known, slightly known or unknown
- Population status (trend): population decreasing, stable or increasing

The process for determining priority species by each taxa committee is identified herein for each taxa group and was utilized in 2005 and in the 2015 revision. South Carolina's Priority Species List is presented in its entirety in Appendix 1 A-D which also details each species' priority habitat associations as determined by the taxa committees and consulting the texts of Hamel (1992), Trani et al. (2007), and Wilson (1995). Appendix 1 is broken into terrestrial ecosystems (1-A), freshwater ecobasins (1-B), marine habitats (1-C), and plant ecoregion associations (1-D).

After determining which species would be included on South Carolina's Priority Species List, taxa committees categorized species into three groups: Highest, High and Moderate Priority. Once the lists were complete, species or guild/group accounts were prepared for each animal on South Carolina's Priority Species List, with the exception of plants. Specific accounts were not prepared for plants due to the large number of species and the limited knowledge for those species.

For those species that received an account in the Supplemental Volume, each followed the following format: authors described the species, their status, population size and distribution, habitat requirements, challenges faced, conservation accomplishments and conservation recommendations. This approach allowed for identification of both general conservation strategies for wildlife and habitats in South Carolina, as well as development of species-based conservation strategies. The latter allows for management of particular species within a given habitat. The separate volume, **Supplemental Volume: Priority Species and Habitat Accounts**, contains these reports in their entirety. Authors were often taxa team members, but not necessarily; they may have been consultants.

The total number of species included in South Carolina's 2015 SWAP is 493 members of the animal kingdom and 332 plants for a grand total of 825. Table 2-1 identifies the number of species included in each taxa group. Additionally, Table 2-2 presents the list of species that were prioritized by taxa committees. As with first drafts, mistakes were made in the 2005 version of the Plan in the form of typographical errors, incorrect nomenclature, or inaccurate guild placement. These were corrected for the 2015 revision of the SWAP. Within the Supplemental Volume's species/guild accounts, changes have been made. Species S and G ranks have been updated along with the newest available data to report. New threats were identified in some cases (i.e. see bats and Eastern woodrat). Some of the conservation recommendations have been accomplished and were thus moved to/discussed in the species/guild's conservation accomplishments section. In addition, any ongoing or new recommendations were kept or added.

TABLE 2-1: NUMBER OF SOUTH CAROLINA SPECIES OF GREATEST CONSERVATION NEED BY TAXA

Taxa	No. of Species
Mammals (Terrestrial and Marine)	32
Birds	161
Reptiles and Amphibians	53
Freshwater Fish	57
Diadromous Fish	6
Crayfish (Freshwater and Terrestrial)	24
Freshwater Shrimp	1
Freshwater Mussels	28
Freshwater Snails	3
Leeches	4
Marine Fish	37
Marine Invertebrates	55
Insects	32
<i>Plants (not eligible for funding under SWG)</i>	<i>332</i>
Total Number of Animals Species	493
Grand Total of All Species (including plants)	825

TABLE 2-2: CATEGORIZED PRIORITY SPECIES (SGCN)

Taxa	Highest Priority	High Priority	Moderate Priority
Mammals (32)	Big Brown Bat Florida Manatee Eastern Small-footed Myotis Hoary Bat Little Brown Bat Northern Long-eared Bat Northern Yellow Bat Rafinesque's Big-eared Bat Red Bat Seminole Bat Silver-haired Bat Southeastern Bat Tri-colored Bat	Appalachian Cottontail Bottlenose Dolphin Carolina Red-backed Vole Dwarf Sperm Whale Hairy-tailed Mole Humpback Whale Masked Shrew Meadow Vole Mink North Atlantic Right Whale Pygmy Sperm Whale Star-nosed Mole Swamp Rabbit	Black Bear Eastern Spotted Skunk Eastern Woodrat Pygmy Shrew (Southern) Southern Fox Squirrel Woodland Jumping Mouse
Birds (162)	American Bittern American Black Duck American Golden Plover American Kestrel American Oystercatcher Bachman's Sparrow Black-crowned Night Heron Black Rail Black Scoter Black Skimmer Black-throated Green Warbler Buff-breasted Sandpiper Cerulean Warbler Clapper Rail Common Ground-dove Common Tern Golden-winged Warbler Grasshopper Sparrow Green Heron Gull-billed Tern Henslow's Sparrow Horned Grebe King Rail Least Bittern Least Tern Lesser Scaup Little Blue Heron Loggerhead Shrike Long-billed Curlew Marbled Godwit Northern Bobwhite Northern Pintail Painted Bunting (Eastern) Pied-billed Grebe Piping Plover Purple Gallinule Red-cockaded Woodpecker Red Crossbill Red Knot Reddish Egret Royal Tern Ruddy Turnstone Ruffed Grouse Rusty Blackbird Sanderling	Acadian Flycatcher American Avocet Bald Eagle Baltimore Oriole Belted Kingfisher Black-and-white Warbler Black-bellied Plover Black-billed Cuckoo Brown Pelican Canvasback Chimney Swift Chuck-will's-widow Dunlin Eastern Kingbird Eastern Meadowlark Eastern Towhee Eastern Wood-pewee Field Sparrow Forster's Tern Great Egret Greater Scaup Greater Yellowlegs Kentucky Warbler Least Sandpiper Lesser Yellowlegs Louisiana Waterthrush Mallard Prairie Warbler Purple Martin Purple Sandpiper Redhead Royal Tern Semipalmated Sandpiper Sora Stilt Sandpiper Tricolored Heron Virginia Rail Whip-poor-will (Eastern) White-winged Scoter Willet Wood Duck Wood Thrush Yellow-billed Cuckoo Yellow-breasted Chat Wilson's Snipe	American Coot American Woodcock Anhinga Baird's Sandpiper Barn Owl Bewick's Wren Black-throated Blue Warbler Blue Grosbeak Blue-winged Teal Blue-winged Warbler Broad-winged Hawk Brown-headed Nuthatch Brown Thrasher Carolina Chickadee Carolina Wren Chestnut-sided Warbler Common Gallinule Common Loon Common Raven Dark-eyed Junco Dickcissel Downy Woodpecker Glossy Ibis Golden-crowned Kinglet Gray Kingbird Great Blue Heron Hooded Warbler Indigo Bunting Long-billed Dowitcher Macgillivray's Seaside Sparrow Mottled Duck Northern Parula Orchard Oriole Pectoral Sandpiper Peregrine Falcon Pileated Woodpecker Pine Warbler Prothonotary Warbler Red-bellied Woodpecker Red-breasted Nuthatch Red-headed Woodpecker Red-shouldered Hawk Ring-necked Duck Roseate Spoonbill

Taxa	Highest Priority	High Priority	Moderate Priority
Birds (continued)	Sandwich Tern Sedge Wren Short-billed Dowitcher Solitary Sandpiper Swainson's Warbler Swallow-tailed Kite Upland Sandpiper Wayne's Black-throated Green Warbler Western Sandpiper Whimbrel White Ibis Wilson's Plover Wood Stork Wood Thrush Yellow-crowned Night Heron Yellow Rail		Scarlet Tanager Semipalmated Plover Snowy Egret Spotted Sandpiper Summer Tanager Tundra Swan White-eyed Vireo White-rumped Sandpiper Worm-eating Warbler Yellow-throated Vireo Yellow-throated Warbler
Reptiles and Amphibians (53)	Bog Turtle Broad-striped Dwarf Siren Chamberlain's Dwarf Salamander Coal Skink Coral Snake (Harlequin) Flatwoods Salamander (Frosted) Florida Green Watersnake Gopher Frog (Carolina) Green Salamander Green Sea Turtle Gopher Tortoise Hawksbill Sea Turtle Island Glass Lizard Kemp's Ridley Sea Turtle Leatherback Sea Turtle Loggerhead Sea Turtle Milk Snake (Eastern) Mimic Glass Lizard Patch-nosed Salamander Pine Barrens Treefrog Pine Snake (Northern) Pine Snake (Florida) Shovel-nosed Salamander Southern Hognose Snake Tiger Salamander Webster's Salamander	Black Swamp Snake Diamondback Terrapin Dwarf Black-bellied Salamander Eastern Diamondback Rattlesnake Florida Softshell Turtle Four-toed Salamander Mud Salamander (Gulf Coast) Pickerel Frog Pine Woods Snake Seepage Salamander Spotted Turtle Timber Rattlesnake Wood Frog Yellow-bellied Slider	American Alligator Bird-voiced Treefrog Chicken Turtle Eastern Box Turtle Northern Cricket Frog Painted Turtle (Eastern) River Cooter Florida Cooter Slender Glass Lizard Snapping Turtle (Common) Spiny Softshell Turtle Striped Mud Turtle Upland Chorus Frog
Freshwater Fishes (57)	"Bartram's" Redeye Bass Bluebarred Pygmy Sunfish Bridle Shiner "Broadtail" Madtom Carolina Pygmy Sunfish Christmas Darter Highfin Carpsucker Robust Redhorse Sandhills Chub Savannah Darter "Thinlip" Chub	Bannerfin Shiner Blackbanded Sunfish Carolina Darter Carolina Fantail Darter "Carolina" Redhorse Piedmont Darter Pinewoods Darter Quillback Santee Chub Seagreen Darter "Smoky" Sculpin Turquoise Darter	Banded Killifish Banded Sunfish Blacknose Dace Central Stoneroller Comely Shiner Eastern Brook Trout Everglades Pygmy Sunfish Fieryblack Shiner Flat Bullhead Florida Gar Greenfin Shiner Highback Chub Highfin Shiner Ironcolor Shiner Lowland Shiner

			Mirror Shiner Notchlip Redhorse Redlip Shiner Rosyface Chub Rosyside Dace Sandbar Shiner Satinfin Shiner Sawcheek Darter Snail Bullhead Striped Bass Swallowtail Shiner Swampfish Tennessee Shiner Thicklip Chub V-lip Redhorse Warpaint Shiner White Catfish Whitemouth Shiner Whitetail Shiner
Diadromous Fishes (6)	American Eel American Shad Atlantic Sturgeon Blueback Herring Hickory Shad Shortnose Sturgeon		
Crayfish (24)	"A Crayfish" (<i>Cambarus</i> sp. nov. "B") Chauga Crayfish Edisto Crayfish Mimic Crayfish Newberry Burrowing Crayfish Pine Savannah Crayfish Red Burrowing Crayfish Saluda Burrowing Crayfish	Broad River Spiny Crayfish Piedmont Prairie Burrowing Crayfish Waccamaw Crayfish	Black Mottled Crayfish Brushnose Crayfish Carolina Needlenose Crayfish Carolina Sandhills Crayfish Cedar Creek Crayfish Coastal Plain Crayfish Ditch Fencing Crayfish Hummock Crayfish Pee Dee Lotic Crayfish Rocky River Crayfish Santee Crayfish Shaggy Crayfish Wandering Crayfish
Freshwater Shrimp (1)			Ohio River Shrimp
Freshwater Mussels (28)	Atlantic Pigtoe Barrel Floater Brook Floater Brother Spike Carolina Creekshell Carolina Heelsplitter Creeper Eastern Rainbow Notched Rainbow Savannah Lilliput Triangle Floater Waccamaw Spike Yellow Lampmussel	Alewife Floater Altamaha Archmussel Atlantic Spike Eastern Lampmussel Eastern Pondmussel Northern Lance Pod Lance Rayed Pink Fatmucket Roanoke Slabshell Tidewater Mucket	Carolina Elephantear Carolina Lance Eastern Creekshell Eastern Elliptio Variable Spike
Freshwater Snails (3)		Buffalo Pebblesnail Panhandle Pebblesnail Ridged Lioplax	
Freshwater, Marine, and Terrestrial Leeches (4)		"A terrestrial leech" (<i>Haemopsis septagon</i>) New England Medicinal Leech	Biannulate Leech "A marine leech" (<i>Branchellion ravenelii</i>)

<p>Marine Fish (37)</p>	<p>Carolina Hammerhead Gafftopsail Catfish Hardhead Catfish Scalloped Hammerhead Southern Flounder</p>	<p>Bonnethead Cobia Mummichog Tarpon Weakfish</p>	<p>Atlantic Bumper Atlantic Croaker Atlantic Menhaden Atlantic Spadefish Black Drum Blackcheek Tonguefish Blacktip Shark Bluefish Bull Shark Cownose Ray Fringed Flounder Gag Hogchoker King Mackerel Lemon Shark Off-shore Tonguefish Red Snapper Sheepshead Silver Perch Smooth Dogfish Southern Kingfish Spanish Mackerel Spinner Shark Spot Striped Mullet Tiger Shark Tomtate</p>
<p>Marine Invertebrates (55)</p>	<p>Atlantic Blue Crab Atlantic Horseshoe Crab</p>	<p>Crested Oyster</p>	<p>“A polychaete” (<i>Aphelochaeta</i> sp.) “A polychaete” (<i>Arabella mutans</i>) “A polychaete” (<i>Capitella capitata</i>) “A polychaete” (<i>Caulleriella</i> sp.) “A polychaete” (<i>Drilonereis longra</i>) “A polychaete” (<i>Glycera americana</i>) “A polychaete” (<i>Glycera dibranchiata</i>) “A polychaete” (<i>Laonereis culveri</i>) “A polychaete” (<i>Mediomastus</i> sp.) “A polychaete” (<i>Monticellina</i> sp.) “A polychaete” (<i>Paraonis fulgens</i>) “A polychaete” (<i>Scolecopsis</i> sp.) “A polychaete” (<i>Streblospio benedicti</i>) “A polychaete” (<i>Tharyx acutus</i>) “An amphipod” (<i>Acanthohaustorius millsi</i>) “An amphipod” (<i>Ampelisca abdita</i>) “An amphipod” (<i>Neohaustorius schmitzi</i>) “An amphipod”</p>

			<p>(<i>Parahaustorius longimerus</i>) "An amphipod" (<i>Protohaustorius wigleyi</i>) "An amphipod" (<i>Rhepoxynius hudsoni</i>) "An isopod" (<i>Cyathura</i> sp.) "An oligochaete/sludge worm" (<i>Tubificoides</i> sp.) "An oligochaete/sludge worm" (<i>Tubificoides wasselli</i>) "An amphipod" (<i>Lepidactylus dytiscus</i>) Atlantic Brief Squid Atlantic Ghost Crab Atlantic Mud Crab Atlantic Sand Fiddler Crab Brackish Grass Shrimp Brown Shrimp Cannonball Jellyfish Channeled Whelk Colorful Sea Whip Common Southern Clamworm Coquina Clam Daggerblade Grass Shrimp Dwarf Surf Clam Eastern Oyster Florida Stone Crab Knobbed Whelk Lightning Whelk Marsh Grass Shrimp Marsh Periwinkle Mud Fiddler Crab Northern Pink Shrimp Northern Quahog Northern White Shrimp Red-jointed Fiddler Crab Ribbed Mussel Southern Quahog Tellin Clam species (<i>Tellina</i> sp.)</p>
<p>Plants of Concern (332) (<i>do not qualify for funding under the SWG Program</i>)</p>	<p>Black-spored Quillwort Bog Asphodel Bunched Arrowhead Canby's Dropwort Chaffseed Dwarf-flowered Heartleaf Georgia Aster Harperella Miccosukee Gooseberry Michaux's Sumac Mountain Sweet Pitcher-plant Persistent Trillium Pondberry Pool Sprite Reflexed Blue-eyed Grass Relict Trillium Rocky Gnome Lichen</p>	<p>Alexander's Rock Aster American Ginseng Appalachian Lophocolea Awned Meadowbeauty Bay Starvine Beak Rush Biltmore Sedge Blue Ridge St. John's-wort Blue-Ridge Bittercress Bog Spicebush Boykin's Lobelia Broad-leaved Tickseed Brown Beaked-rush Bryocrumia Moss Carey Saxifrage Carolina Bird-in-a-nest Carolina Bugleweed</p>	<p>Acid-swamp Yellow-eyed Grass Aethusa-like Trepocarpus Alabama Black Cherry Algae-like Pondweed American Bog Violet American Golden-saxifrage American Lily-of-the-valley American Water-pennywort Appalachian Peltia Appalachian Sedge Ashy-hydrangea Bartram's Rose-gentian Beakrush Bearded Milk-vetch Biennial Gaura Bigleaf Magnolia</p>

	<p>Rough-leaved Loosestrife Schweinitz's Sunflower Seabeach Amaranth Small Whorled Pogonia Smooth Coneflower Swamp-pink White Fringeless Orchid</p>	<p>Carolina Campylopus Moss Carolina Dropseed Carolina Goldenrod Carolina Grass-of-parnassus Chapman's Redtop Chapman's Sedge Chapman's Yellow-eyed Grass Ciliate-leaf Tickseed Climbing Fetter-bush Clingman's Hedge-nettle Creeping St. John's-wort Crestless Plume Orchid Cypress-knee Sedge Dune Bluecurls Earleaf Foxglove Elliott's Croton Evan's Cheilolejeunea False Dandelion Florida Dropseed Florida Thorough-wort Fort Mountain Sedge Fraser Loosestrife Georgia Oak Georgia Plume Giant Spiral Ladies'-tresses Godfrey's Privet Godfrey's Stitchwort Gorge Leafy Liverwort Granite Dome Goldenrod Granite Rock Stonecrop Harper's Fimbry Harper's Yellow-eyed Grass Hooker's Milkwort Incised Groovebur Lance-leaf Seedbox Large-leaved Grass-of-parnassus <i>Lejeunea blomquistii</i> ("A Liverwort") <i>Lobelia sp. 1</i> Long Beach Seedbox Many-flower Grass-pink May White Mountain Wavy-leaf Moss Mountain Witch-alder Narrow-fruited Beaksedge Narrow-leaved Trillium Oconee-bells Oglethorpe's Oak Open-ground Whitlow-grass Ovate Catchfly Pale Beakrush Panhandle Lily Piedmont Azalea Piedmont Cowbane Piedmont Quillwort Piedmont Ragwort Piedmont Strawberry Piedmont Water-milfoil Pine Barren Gentian Pine Barrens Boneset</p>	<p>Black Huckleberry Black-stem Spleenwort Blue-grass Bluff Oak Bog Oat-grass Bottom-land Post Oak Bradley's Spleenwort Bristle-fern Bulblet Fern Canada Burnet Canada Lily Carolina Dog-hobble Carolina Fluff Grass Carolina Larkspur Carolina Lilaeopsis Carolina St. John's-wort Carolina Whitlow-grass Catawba Rhododendron Cayaponia Cliff-brake Fern Coastal Plain False-foxglove Coastal-plain Thorough-wort Coastal-plain Water-hyssop Corymb Fiddleleaf Crinkled Hairgrass Culver's-root Deep-root Clubmoss Deer-haired Bulrush Dutchman's Breeches Dwarf Juniper Dwarf Milkwort Eared Goldenrod Early Buttercup Eastern Wahoo Eel-grass Eggert's Sunflower Elliott's Bluestem Elliott's Milkpea Elliott's Sedge Engelmann's Quillwort False Rue-anemone Featherfoil Fernleaf Phacelia Florida Adder's-mouth Florida Bladderwort Georgia Beargrass Georgia Leadplant Glade Fern Golden-heather Goldie's Woodfern Gopher-apple Granite-loving Flatsedge Grassleaf Arrowhead Gray-head Prairie Coneflower Great Indian Plantain Greater Bladderwort Gum Bully Gum Bumelia Hairy Fever-tree Harper Beakrush Harper's St. John's-wort James' Sedge</p>
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		Pineland Dropseed Pineland Plantain <i>Plagiochila sharpii</i> ("A Liverwort") <i>Plagiochila sullivanii</i> ("A Liverwort") Pringle's Moss Plymouth Gentian Pondspice Purple Balduina Radford's Sedge Rain Lily Reclined Meadow-rue Rose Coreopsis Sandhills Heartleaf Sandhills Milkvetch Sharp's Leptohyemium Moss Shiny Spikegrass Shoals Spider-lily Small-flowered Buckeye Small's Purslane Southern Nodding Trillium Spatulate Seedbox Spring-flowering Goldenrod Sun-facing Coneflower Sweet Pinesap Sweet White Trillium Taylor's Fern Venus' Fly-trap Wateree Trillium White-wicky Winter Quillwort Wire-leaved Dropseed	Kidneyleaf Mud-plantain Kidney-leaf Twayblade Lace-lip Ladies'-tresses Lance-leaf Loosestrife Large Twayblade Large-flower Milkweed Large-flower Trillium Large-fruited Sanicle Large-stem Morning-glory Leafless Swallow-wort Least Trillium Leconte Flatsedge Limestone Petunia Lobed Spleenwort Long Sedge Long-beaked Baldrush Long-horn Orchid Longleaf Cupgrass Long-spike Fluff Grass Longstalk Sedge Longstem Adder's-tongue Fern Manhart Sedge Marshland Flatsedge Missouri Rock-cress Mohr's Three-awn Grass Mullein Foxglove Myrtle-leaf Oak Narrow-leaved Vervain Needle Palm Nodding Pogonia Nuttall Warea Ogeechee Tupelo Ovate Marsh Fern Pale Jewel-weed Pale Manna Grass Piedmont Cucumber Tree Pine-barrens Reed-grass Pineland Yellow-eyed Grass Pinelands Mountain Mint Pocosin Beaksedge <i>Porella japonica</i> ssp. <i>appalachiana</i> ("A Liverwort") Prairie Goldenrod Prairie Rosinweed Pretty Sedge Purple-stem Cliff-brake Pyramid Magnolia Ravenel's Eryngo Rayner's Blueberry Reticulated Nutrush Rock Clubmoss Rose Balm Rough Thoroughwort Running Pine Rusty Lyonia Salt-marsh False-foxglove Sampson Snakeroot Sandhills Rosemary Sandhills Wild Petunia Savannah Yellow-eyed Grass
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			Schwerin Indigobush Shooting-star Short-bristle Baldrush Shortleaf Sneezeweed Short-leaved Yellow-eyed Grass Short-spike Bluestem Single-haired Mountain-mint Single-sorus Spleenwort Slender Gayfeather Slender Naiad Slender Sedge Small Sundrops Small-head Gayfeather Small's Bog Button Smooth Hedge-nettle Smooth Three-parted Violet Social Sedge Soft Groovebur Soft-hair Coneflower Soft-haired Thermopsis Southern Horse-balm Southern Privet Southern Thimble-weed Spike-rush Spinulose Shield Fern Spoon-flower Stiff Dogwood Swamp White Oak Sweet Fern Tall Bellflower Texas Pipewort Thread-leaf Sundrops Tuberous Gromwell Tunbridge Fern Tussock Sedge Twig Rush Twisted Yellow-eyed-grass Two-leaf Bishop's-cap Two-wing Silverbell Vahl Fimbry Virginia Spiderwort Virginia Stickseed Viviparous Spike-rush Wagner's Spleenwort Walter's Iris Well's Pixie-moss West Indian Meadow-beauty Whisk Fern White Beakrush White Colicroot White False-asphodel White-leaved Sunflower Whorled Horse-balm Wild Bleeding-heart Wing-podded Purslane Winter Grape-fern Woods-rush Woody Goldenrod Woolly Dutchman's-pipe Woolly Huckleberry Yellow Birch
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			Yellow Fringeless Orchid Yellow Sunnysbell Yellowwood
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Table 2-3 contains those priority insect species that are unable to be ranked at this time but for which species accounts are available in the Supplemental Volume.

TABLE 2-3: UNRANKED PRIORITY INSECT SPECIES* (32)

“A Mayfly” (<i>Acanthametropus Pecatonica</i>) “A Mayfly” (<i>Arthroplea bipunctata</i>) “A Mayfly” (<i>Barbaetis benfieldi</i>) “A Mayfly” (<i>Heterocloeon beneri</i>) “A Mayfly” (<i>Homoeoneuria dolani</i>) “A Mayfly” (<i>Maccaffertium lenati</i>) “A Mayfly” (<i>Tsalia beneri</i>) “A Moth” (<i>Agnorisma bolli</i>) “A Mayfly” (<i>Siphonurus decorus</i>) American Sand Burrowing Mayfly Arogos Skipper Black Fly Blackwater Sallfly Calvert’s Emerald Coyle’s Purseweb Spider Diana Fritillary Elephant (Tree Hole Mosquito) (<i>Toxorhynchites rutilus rutilus</i>)	Elephant (Tree Hole Mosquito) (<i>Toxorhynchites rutilus septentionalis</i>) Forestiera Lace Bug (<i>Leptoypa elliptica</i>) Forestiera Lace Bug (<i>Leptoypa ilicis</i>) Hairy Springfly Moretti’s Protoptila Caddisfly Pointy-Lobed Firefly Pyramid Ant (<i>Dorymyrmex bureni</i>) Pyramid Ant (<i>Dorymyrmex medeis</i>) Sandhills Earth Boring Scarab Beetle Savannah Willowfly Smokies Needlefly Smokies Stripetail Two-Spotted Skipper White Beach Tiger Beetle Zigadenus Sawfly
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* Due to a lack of data, these species cannot be ranked at this time. However, species/guild accounts are provided in the Supplemental Volume.

During the public comment period for the draft 2015 SWAP, concern was raised about the inclusion of game animals on the list of species in greatest need of management. Many of South Carolina’s species hold a significant place in our hunting heritage. However, sound science should prevail over culture. Therefore, the SCDNR closely monitors the impact of hunting on both common and priority species. While other states have placed a moratorium on Bobwhite quail hunting, documented harvest rates on quail in SC, based on fall covey count data and harvest data, has ranged from <1% to nearly 30%. It is unclear if hunting has a marked influence on quail numbers. Habitat restoration is thus preferred. Ruffed grouse, another priority species, is rarely hunted in SC and is thus assumed to not be under immediate threat. Waterfowl trend graphs, similarly, show no hunting impact on populations in SC. Black bear, despite increases in hunting pressure, are in fact increasing in number and have become a nuisance in some parts of the State. Public alligator hunts have been allowed since 2008 (private land hunts since 1995) now that the population appears recovered and stable, but a management plan for the species is in progress (Clemson University graduate work) which will help to analyze and guide the long-term effects and direction of the hunting program.

Conservation Action Prioritization

Once species were prioritized, it was necessary to determine the priority of conservation actions that need to be implemented to conserve those species. The vast number of species in the SWAP and conservation actions necessary for each of those species is staggering. It is apparent that all of the species in the Plan are important to the natural diversity of South Carolina and should be conserved. However, it is also apparent that it would be impossible to immediately implement all the conservation actions developed for inclusion in the SWAP. Therefore, conservation actions were consolidated because it was necessary to use a realistic approach to determine which conservation actions would be implemented first; that is, which actions would receive the highest priority in South Carolina. SCDNR's goal was to identify conservation actions that could realistically be executed and benefit the most priority species. A steering committee was thus formed in 2005 in order to accomplish conservation action prioritization. This committee consisted of senior personnel within the SCDNR. The members of this committee were asked to consider the 6 criteria when ranking conservation actions, which are presented in Box 2-3. For this current iteration of the Action Plan, no new steering committees were formed as the previously set objectives and goals are still in place. Each of the priority conservation actions identified were then attempted over the years and the measures of success documented in Chapter 5: Statewide Conservation Strategies.

BOX 2-3: SIX CRITERIA USED FOR DETERMINATION OF PRIORITY CONSERVATION ACTIONS

- **Feasibility:** Challenges can be mitigated, solutions are apparent. SCDNR can feasibly staff and implement the action and the results will be beneficial.
- **Opportunity:** SCDNR is able to implement the conservation action (i.e., opportunities exist; SCDNR has the authority to carry out the action).
- **Benefit:** Implementation of the action will result in benefits to the natural diversity of South Carolina. Benefits are considered in terms of unit of effort to achieve those benefits; that is, implementation results in multiple benefits to a given species or multiple species are benefited by a single action.
- **Proactive:** Implementation will result in proactive changes to address challenges; actions are more than a reactive response to ongoing challenges.
- **Partnerships:** Partnership opportunities exist for implementation, which provides the ability to leverage other resources.
- **Funding:** Implementation is eligible for SWG funding and/or matching funds exist.