

**CONSERVING
GEORGIA'S NONGAME WILDLIFE**
2004-2007 REPORT

GEORGIA DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION
NONGAME CONSERVATION SECTION

OUR MISSION



(photos by Georgia DNR)
The Nongame Conservation Section's work varies widely, from aquatic sampling (above) to wildlife education (right) and prescribed burns (below) to sea turtle studies (bottom right).

The Nongame Conservation Section manages Georgia's native diversity of wild animals and plants and their habitats through education, research and management, while also working to increase the public's enjoyment of these natural resources.

Activities of the Nongame Conservation Section include conducting research and surveys, identifying critical habitats, implementing species restoration programs, encouraging appreciation of watchable wildlife, and providing landowners with information on managing their lands for nongame wildlife. The section also catalogs and distributes information on the occurrences of rare plants, animals and natural communities throughout the state. These data are used by state and local governments, developers, researchers, and other individuals who need information about important natural resources in Georgia.



The Nongame Conservation Section depends on contributions from corporations, civic and environmental organizations, foundations, and individuals for funding. Primary funding for the section is received through the State Income Tax Checkoff and the sale of nongame wildlife license plates.

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Front cover: River Creek, the Rolf and Alexandra Kauka Wildlife Management Area
(photo by John M. Hall)

Back cover: Mountain bog
(photo by Marc Del Santro)



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From cascading mountain streams to placid blackwater rivers, oak-shaded coastal hammocks to windswept mountain ridges, weathered granite outcrops to quiet cypress swamps, Georgia's varied landscape provides habitats for a vast array of wildlife species. As a result, Georgia ranks among the top states in wildlife diversity. The Georgia Department of Natural Resources' Wildlife Resources Division (WRD) strives to protect this valuable part of our state's natural history.

The WRD Nongame Conservation Section is charged with the task of conserving nongame species – those that are not legally hunted or fished.

The section fulfills this mission through wildlife conservation projects and programs, public education and outreach, land acquisition and management, and watchable wildlife opportunities. Another important component is fund raising, because the projects and programs for nongame wildlife conservation depends solely on funding from direct donations, fund-raising initiatives and grants. Unlike other state programs, the Nongame Conservation Section receives no money through state appropriations.

A key roadmap for conservation – Georgia's State Wildlife Action Plan – was approved in 2005 and will provide guidance for wildlife conservation efforts in the coming years. The plan outlines critical areas of need, with a focus on keeping Georgia's native species from declining to the point of requiring federal protection as threatened or endangered species.

This report gives an overview of the Nongame Conservation Section's accomplishments for fiscal years 2004 through 2007. During the past four years, the state has acquired thousands of acres of valuable wildlife habitat that will be managed as natural areas or wildlife management areas. As a result of management efforts, species like the bald eagle and red-cockaded woodpecker are making strong recoveries in the state. The section has produced many posters, brochures, field guides and fact sheets to help inform the public about important species and habitats. Funding for regional education centers helped roughly 200,000 Georgia students learn about wildlife through hands-on experiences.

While the Nongame Conservation Section has made great strides in recent years, much more work remains. More than 1,000 of the state's plant and animal species have been classified as species of conservation concern, with 318 of these listed as rare, unusual, threatened or endangered and protected by federal or state law. With continued support from Georgia residents, the section will work to protect and conserve these species.

I urge you to read the information provided here and learn more about how much we have been able to accomplish, thanks to the support of those who bought a nongame license plate for their car, donated through the State Income Tax Checkoff or attended Weekend for Wildlife. Please contact the Nongame Conservation office if you would like to learn more about any of Georgia's nongame conservation projects. Thank you for your interest in Georgia's nongame wildlife and natural heritage.

Sincerely,
Mike Harris, Chief
Nongame Conservation Section

Top left: Red knots and other shorebirds at St. Catherines Sound
(photo by Georgia DNR)

Coosa Valley prairie
(photo by Marc Del Santro)



CONSERVATION

LOGGERHEAD NEST MONITORING AND PROTECTION

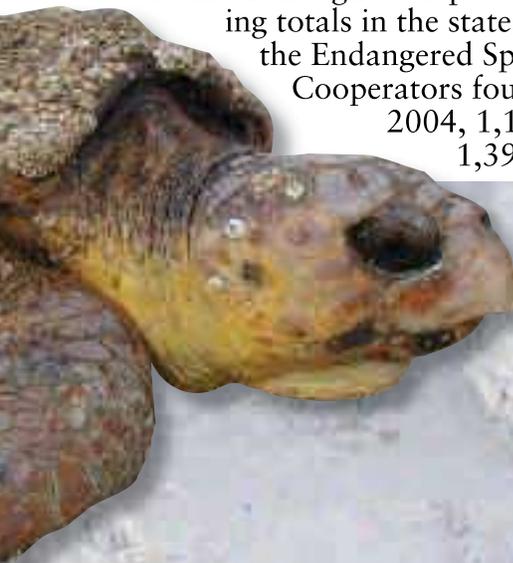
The loggerhead sea turtle is found in Georgia's coastal waters year-round and nests on barrier island beaches during spring and summer. In accordance with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration Marine Fisheries Service recovery plan for loggerhead sea turtles, the Nongame Conservation Section focuses management efforts on survey and protection of loggerhead nests and management of nesting beach habitat. NCS coordinates a group of volunteers, researchers and government employees who conduct nest protection and management activities on Georgia beaches, an effort known collectively as the Georgia Sea Turtle Cooperative. Nest management strategies such as nest relocation, installation of protective screens and removal of predators are implemented to ensure high nesting success. Since comprehensive surveys began in 1989, loggerhead nesting has been highly variable with an average of approximately 1,000 nests per year.

In 2007, 688 loggerhead nests were documented on Georgia beaches, 312 nests below the 18-year statewide average. The 2007 nest total is also below the federal recovery goal of 2,000 nests a year, a number thought to represent loggerhead nesting totals in the state prior to listing under the Endangered Species Act in 1978.

Cooperators found 368 nests in 2004, 1,199 nests in 2005 and 1,399 in 2006.

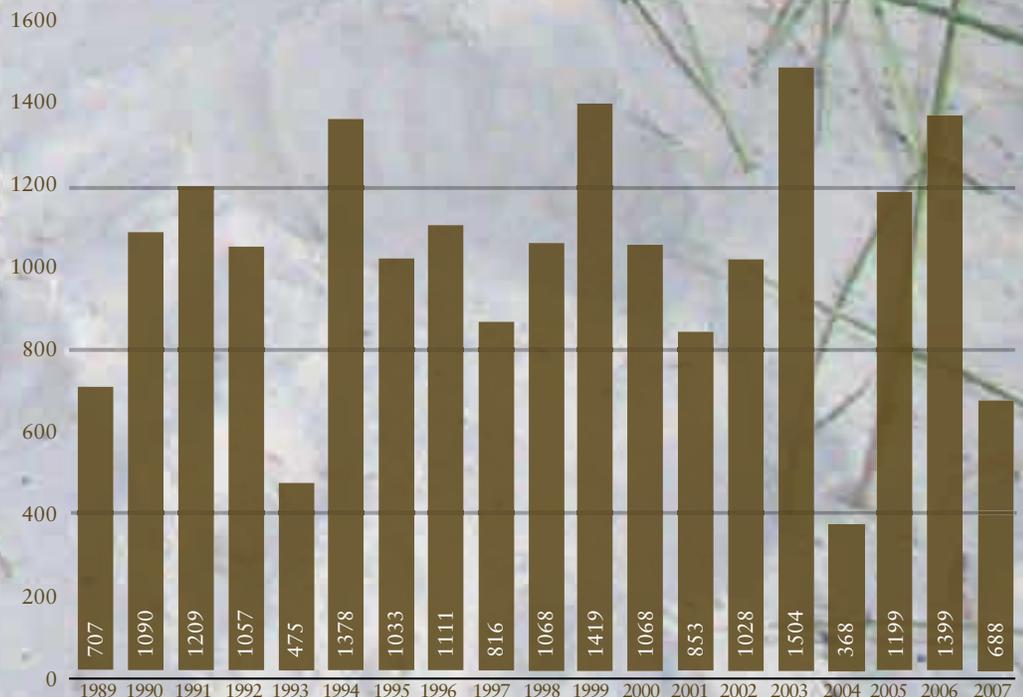


Sea turtle nest inventory
(photo by Georgia DNR)



Inset: Loggerhead sea turtle
(photo by Georgia DNR)

LOGGERHEAD SEA TURTLE NESTS



MARINE TURTLE STRANDING NETWORK AND AT-SEA RECOVERY

In addition to the loggerhead sea turtle, four other marine turtles can be found in Georgia's coastal waters: the green, Kemp's ridley, leatherback and hawksbill. All are listed as federally endangered or threatened. With support from NOAA, the Nongame section monitors marine turtle mortality through the Sea Turtle Stranding and Salvage Network. Systematic patrols of barrier island beaches provide information on the number and species of dead turtles that wash up on Georgia beaches. When possible, necropsies of stranded turtles are conducted to evaluate causes of mortality. Periodic aerial surveys are flown to determine distribution and abundance of marine turtles in Georgia's coastal waters during migration. Sea turtle strandings are the primary index for threats to sea turtles in coastal waters.

In 2006, 135 stranded sea turtles were found on Georgia beaches. The 2006 total is the lowest recorded since the section established comprehensive surveys in 1989. Stranding numbers were 240 in 2004 and 207 in 2005. (2007 totals were not available in time for this report.)

One possible explanation for the low 2006 total is increased Turtle Excluder Device (TED) enforcement efforts by Wildlife Resources. WRD Law Enforcement personnel have conducted numerous shrimp trawler boardings to inspect TEDs, placing particular emphasis on dockside TED compliance checks prior to the opening of the shrimp season in June. Illegal or improperly installed TEDs may capture and drown sea turtles during fishing operations.

LOGGERHEAD TURTLE SATELLITE TELEMETRY STUDY

During the summers of 2004 and 2005, the Nongame Conservation Section conducted a collaborative study with the University of Georgia to document interesting habitat use, migratory pathways and post-nesting movements of Georgia's nesting loggerhead turtles using satellite and conventional telemetry. Biologists attached 24 satellite transmitters on nesting loggerhead females on Cumberland, Jekyll, Sapelo and Blackbeard islands, and followed movement patterns through the nesting season. Weekly aerial surveys documented the distribution of commercial fishing and dredging activity. The results were used to make management recommendations to protect adult loggerhead sea turtles and their habitats.

Overall, loggerheads were found to have high site fidelity, with most females using less than three kilometers of beach for nesting. The distribution of loggerheads during the nesting season was similar to the distribution of shrimp trawlers, indicating that area closures would not be effective in reducing turtle/trawler interactions. The improved use of conservation gear such as Turtle Excluder Devices proved to be one of the best approaches to reducing interactions between trawlers and loggerhead turtles.

Following the nesting season, the majority of Georgia's nesting loggerhead turtles made long-distance migrations to foraging grounds in the mid-Atlantic and northeastern states.



Loggerhead with satellite transmitter
(photo by Georgia DNR)

BALD EAGLE NEST SURVEYS

The bald eagle, once fairly common in Georgia, was no longer nesting in the state by the early 1970s. A ban on the use of DDT in 1972, habitat improvements following enactment of the Clean Water Act and the Clean Air Act, protection through the Endangered Species Act, increased public awareness, and

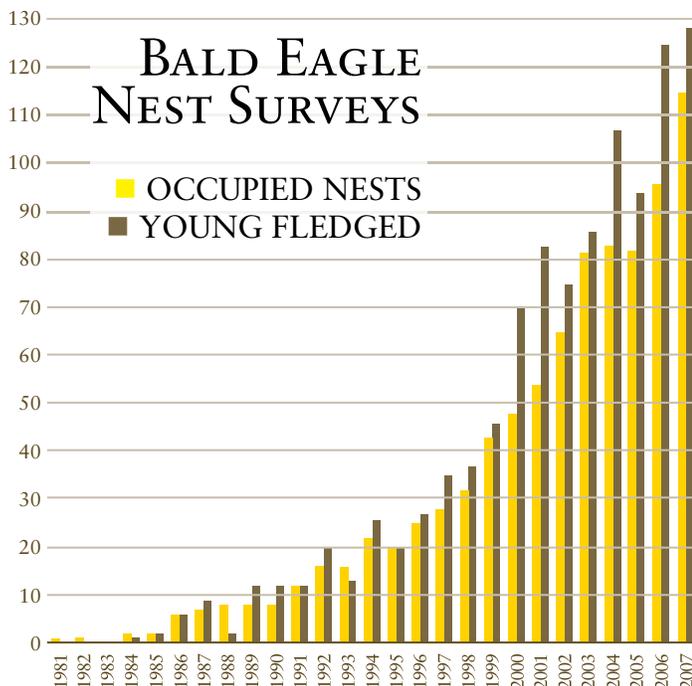


Bald eagle
(photo by Phillip Jordan)

the restoration of local populations through release programs helped bald eagle populations rebound in this state and others. Georgia's ongoing conservation efforts include monitoring all known eagle nests and working with landowners to protect nest sites from disturbance. During the 2004 and 2005 nesting seasons, the section documented 83 and 82

occupied nesting territories, respectively, reflecting essentially no change from the 81 counted in 2003. However, any concerns that the population had reached capacity dissolved when the total jumped to 96 in 2006 and to 114 in 2007.

Following federal de-listing in 2007, primary legal protection for nesting eagles comes under the Bald and Golden Eagle Protection Act. NCS will continue to monitor nesting activity and work with landowners to manage nest sites.



WOOD STORK NEST SURVEYS

The wood stork population is showing signs of recovery. Wood storks were listed as endangered in 1984 following dramatic declines in breeding colonies in southern Florida. Wood stork nests were first documented in Georgia in 1965.



Wood storks
(photo by Georgia DNR)

By the 1980s, wood storks began nesting in increasing numbers in the state. Georgia now supports about 20 percent of the species' U.S. nesting population, which is about 10,000 breeding pairs. The recovery plan for the wood stork in Georgia includes monitoring reproductive success of nesting colonies and identifying potential threats.

The Nongame Conservation Section conducts aerial surveys each spring to identify and monitor nesting colonies. Stork nesting effort, the number of pairs that attempt to reproduce, fluctuates annually. In 2007, the drought that still plagues the state restricted favorable conditions for nesting and feeding by drying up the freshwater wetlands on which wood storks depend. Just over 1,000 nests were counted in the state at the height of nesting. Many of those nesting attempts appeared to have failed to produce any young storks. However, in 2006, with favorable water levels, a record 1,933 nests were counted in 21 colonies.

Overall, the Georgia population is believed to be slightly increasing. Wood storks are highly selective in choosing nesting sites and prefer seasonally flooded, wooded wetlands. With more than 75 percent of all stork rookeries located on private land, the success of conservation efforts for this species will depend on landowners willing to ensure that viable freshwater wetland nesting sites persist into the future.

RED-COCKADED WOODPECKER RECOVERY

The red-cockaded woodpecker (RCW) is the only woodpecker in the United States that excavates cavities in living pines. The drastic loss of mature pine forests over the past 200 years has been the primary cause of this species' decline. Habitat for the RCW now occurs primarily on military bases, national forests and other public lands, although populations remain on certain private lands. The recovery plan for the RCW focuses on the protection and restoration of suitable habitat and populations on private and public lands.

In 1999, the Georgia Department of Natural Resources developed the nation's first statewide RCW Habitat Conservation Plan to provide management options for private landowners. The plan includes options for mitigated take and Safe Harbor. Safe Harbor is targeted at landowners in southwest Georgia, where plantations managed for the northern bobwhite also support a significant population of RCWs.

Safe Harbor involves establishing a baseline number of RCW family groups on a property and limiting the legal obligation to maintain habitat to that baseline condition. This allows the landowner to manage the property without fear of increasing his legal obligation to provide further RCW habitat.

In Georgia, 144,441 acres are enrolled in Safe Harbor management agreements. Most of these properties are in the ecologically important Red Hills region near Thomasville, an area that supports the largest population of RCWs on private lands in the world. An incentive program funded by the U.S. Fish and Wildlife Service has proved effective in working with landowners to encourage installation of artificial cavities, prescribed burning and hardwood control.

Since the inception of Safe Harbor in 2000, the Red Hills population has grown from 175 family groups to more than 190. In cooperation with the Joseph W. Jones Ecological Research Center, a successful effort is underway to restore the RCW population at Ichauway Plantation in Baker County. This 29,000-acre property supported a single male RCW in 1999. Through the translocation of 40 young birds, the property supported a population of 23 family groups by 2007.



Red-cockaded woodpecker
(photo by Phillip Jordan)



Nongame section biologist finishes installing woodpecker nest cavity
(photo by Georgia DNR)

CONSERVATION

NORTH ATLANTIC RIGHT WHALE CONSERVATION

The North Atlantic right whale is one of the most endangered marine mammals in the world, with a total population of approximately 400 whales. Right whales were decimated by commercial whaling in the late 1800s. Collisions with ships and entanglement in commercial fishing gear have prevented the population from recovering since whaling was banned. Each winter, right whales migrate from waters off the northeastern U.S. and Canada to calving grounds along the coast of Georgia and northeast Florida.

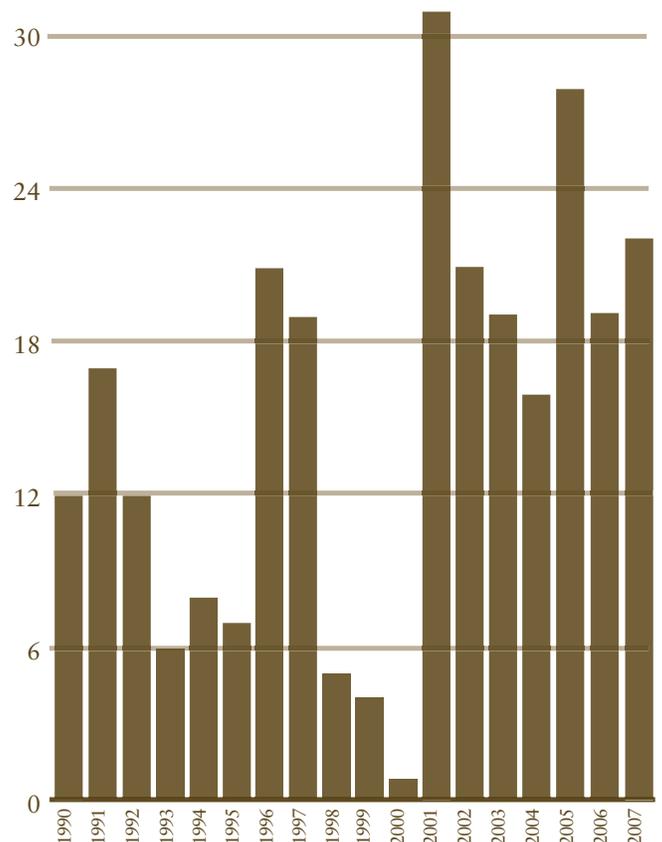
For more than two decades, the Nongame section has collaborated with various federal, state and private organizations to protect right whales and their southeastern habitat. Each December through March, staff from the Nongame Conservation Section, NOAA Fisheries and Wildlife Trust conduct extensive aerial surveys to document calf production and warn ships about whale locations.

An average of 22 calves has been documented each year since 2001, compared with 10 calves per year from 1990-2000. Despite this apparent increase, human-caused mortality from ship strikes and fishing gear entanglements remains high. The Nongame Conservation Section participates in various on-the-water management and research efforts, including whale disentanglement, genetics sampling, whale tagging studies and injury/mortality investigations. Since 2004, Nongame staff have helped disentangle three right whales and participated in five injury/mortality investigations. The Nongame Conservation Section receives considerable support from the Georgia DNR Coastal Resources Division and WRD Law Enforcement Section for right whale education and outreach efforts, policy efforts, and enforcement of federal right whale protections.



Right whale with calf
(photo by Georgia DNR / Wildlife Trust)

RIGHT WHALE CALVES



AQUATIC CONSERVATION INITIATIVE

Georgia is one of the richest states in aquatic biodiversity, ranking among the top five in the number of native species of snails, mussels, fishes and crayfishes.

Unfortunately, Georgia is also ranked among the top states in aquatic fauna at risk. More than two-thirds of Georgia's freshwater mussels are extinct, endangered, threatened or considered species of special concern. Approximately 30 percent of the state's crayfish and 20 percent of freshwater fishes fall into the same categories. While no comprehensive assessment exists for the state's freshwater snails, many species have already disappeared from Georgia waters.

The Nongame Conservation Section launched the Aquatic Conservation Initiative in 1998 to determine the status of Georgia's aquatic fauna and to develop conservation plans for declining species. Primary objectives were to identify important populations of rare aquatic species through surveys and research, incorporate this information into the WRD database, and help with conservation planning for rare aquatic species.

Following the priorities identified in the State Wildlife Action Plan, several high-priority surveys have been completed since 2004. The Nongame Conservation Section funded and collaborated on the first comprehensive survey of freshwater mussels in the Broad River system of northeast Georgia. The section also funded a survey of high-priority crayfishes in the Chattahoochee River system. Based on the results, several of these species were added to the state protected list. Biologists surveyed for the bluenose shiner in southwest Georgia, discovering several new populations of this rare minnow species.

The section completed or funded hundreds of additional surveys around the state, documenting important populations of high-priority



Biologists seining on the Conasauga River
(photo by Georgia DNR)

species such as the Altamaha spiny-mussel, Savannah lilliput, Edmund's snaketail, the spotted bullhead, the sicklefin redhorse and the southern cavefish. Data partnerships were initiated with the Georgia Museum of Natural History and the Stream Survey Team of the WRD Fisheries Section, greatly expanding the amount of data

available for environmental review and conservation planning. The database now contains more than 2,500 distribution records representing important populations of 184 rare aquatic species. Many species were mapped in the database for the first time, including 15 state-protected crayfish species and several dragonflies.



Cherokee clubtail dragonfly
(photo by Giff Beaton)



Piedmont blue burrower crayfish
(photo by Chris Lukhaup)



Red knots (photo by Georgia DNR)

WATERBIRD CONSERVATION INITIATIVE

Georgia's barrier island beaches, coastal salt marshes and freshwater wetlands support 86 species of seabirds, shorebirds and wading birds, collectively known as waterbirds. Recent growth in the population of coastal Georgia has placed the habitats under increasing threats from development. The Waterbird Conservation Initiative was started in 1998 to address conservation needs for these species. The focus of these efforts has been protection of important colonial waterbird nesting habitats; surveys to determine status of other resident, migratory and wintering waterbirds; and identification of habitats important for these species.

Conservation efforts include protection and management of five sand island locations specifically for beach-nesting birds. This work has primarily been valuable for seabirds, but resident and migratory shorebirds also benefit from disturbance-free protection of critical nesting areas on these islands. One of the areas, Egg Island Bar, supports the largest concentration of nesting seabirds on the South Atlantic coast.

Surveys of migrant and wintering shorebirds have documented important staging areas for red knots in the late summer and fall, a spring staging of whimbrels that may include 20 percent of the Atlantic flyway population, the single largest concentration of wintering semipalmated plovers in the U.S., and an important Atlantic coast concentration of wintering piping plovers from all three breeding populations. Coastal surveys for American oystercatchers and Wilson's plovers provided the first comprehensive information on breeding populations of these species in Georgia. A contract research project with the University of Georgia provided information on the causes of disturbance for beach-nesting birds on Cumberland Island.

BREEDING BIRD ATLAS

The goal of the Breeding Bird Atlas is to determine the range of each breeding species in Georgia, providing a baseline to gauge any future changes in distribution. The Breeding Bird Atlas is critical to conservation planning because it provides a starting point to monitor such changes. During the eight years of monitoring, more than 200 people collected more than 150,000 records that documented 182 species of breeding birds. The Breeding Bird Atlas book, slated for publication in 2009, will feature species accounts, photographs and range maps for each breeding species found during the project.

Summer tanager
(photo by Georgia DNR)



SWALLOW-TAILED KITE INITIATIVE



Swallow-tailed kite
(photo by Georgia DNR)

The swallow-tailed kite once nested in 21 states but suffered an abrupt decline around the turn of the 20th century. The swallow-tailed kite now nests in only seven southeastern states, including Georgia, and has an estimated U.S. breeding population of 800 to 1,200 pairs. This species is included in the Partners in Flight Continental Watch list as a species of immediate management concern.

The Nongame Conservation Section introduced the Swallow-Tailed Kite Initiative in 1997 to determine the distribution and abundance of kites in Georgia; identify critical nesting, roosting and foraging areas; monitor nests; and develop management recommendations to conserve the species and its habitat. From 1999 to 2006, 203 active nests were located and monitored to determine nesting success. Those success rates ranged between 30 percent and 70 percent, with nests in the Altamaha River floodplain appearing to be more successful than those in smaller river systems such as the Satilla. Radio transmitters were placed on 48 juveniles and four adults, and satellite transmitters were placed on six adults. Juveniles and adults were tracked by radio and satellite telemetry during migrations through Florida, across the Gulf of Mexico and Cuba, and through Mexico, Belize, Panama and Nicaragua to wintering areas in Brazil.

Nests were most commonly located in tall loblolly pines in or next to bottomland forests along major river floodplains. Because almost 90 percent of nests were on private lands, conservation efforts have focused on working with private landowners to conserve the habitats kites need for breeding, foraging and roosting. Corporate timber companies routinely identify swallow-tailed kite nesting areas as sites of special interest and set aside nest areas with buffers.

In 2006, the section expanded nest-searching efforts to obtain a more accurate picture of swallow-tailed kite breeding distribution throughout the state. Aluminum flashing was placed on nest trees as a pilot study of an anti-predator device. The 2006 nesting season yielded 41 confirmed nests and 11 nest structures located, with the high-

est nest success to date of roughly 71 percent. New nesting areas were found near the Withlacoochee, Alapaha, Oconee and Ocmulgee rivers. Fourteen kites were tagged with four-year VHF radios.



Southern hognose snake
(photo by Georgia DNR)



Barbour's map turtle
(photo by Georgia DNR)

LAW ENFORCEMENT FOR NONGAME SPECIES

WRD Law Enforcement personnel investigated and documented 87 violations of regulations pertaining to nongame species from 2004-2007. These included violations of ginseng harvest, sale or registration regulations; cases of illegal take or possession of nongame species; cases of take or possession of protected species; and cases of holding wildlife for exhibition without permits.

Nongame species listed in these cases included alligator snapping turtle, gopher tortoise, eastern indigo snake, southern hognose snake, northern pine snake, swallow-tailed kite, red-cockaded woodpecker, black vulture, turkey vulture, Cooper's hawk, American ginseng and several species of map turtle.

RARE PLANT SURVEYS ON PUBLIC LAND

Although public lands protect the habitat of many populations of rare species, numerous sites have not received adequate surveys. Inventories are important to find new populations so their habitats can be protected. Surveys also are needed to ensure that proposed development projects such as roads, trails or buildings on public lands do not inadvertently harm rare species.

Staff botanists in the Nongame Conservation Section continue to explore state lands, with a focus on newly acquired properties. Surveys are conducted throughout the state to identify and inventory locations of rare plants and provide guidance on appropriate management activities. Highlights from 2004-2007 include observations for plants of conservation concern in the mountains, Piedmont and Coastal Plain regions of Georgia.

In the mountains, the shadow-witch orchid was found in a seepy limestone woodland on Crockford-Pigeon Mountain Wildlife Management Area (WMA), and new sites for rosy twisted-stalk, starflower, lily-of-the-valley and turkeybeard were located on national forest lands. The state's largest population of federally listed pond spicebush was verified within the Fall Line Sandhills Natural Area in Taylor County. A rare milkweed known as savanna milkweed reappeared on Sapelo Island WMA and at Hofwyl-Broadfield Plantation Historic Site, due to prescribed burning in longleaf pine/wiregrass habitat. Surveys at River Creek, the Rolf and Alexandra Kauka WMA pinpointed populations of pitcherplants and hummingbird flower.



Pond spicebush
(photo by Georgia DNR)

In the Piedmont, relict trillium was documented in the Oconee National Forest and monkey-face orchid was observed on Pine Log WMA in Bartow County. In middle Georgia's inner Coastal Plain, a detailed floristic study of a relatively unknown blackland prairie and associated hardwood forest ecosystem is underway at Oaky Woods WMA. Unusual discoveries include at least five prairie wildflowers previously unrecorded in Georgia, a rare hawthorn and woodlands with scattered Durand oak.



Relict trillium
(photo by Georgia DNR)

NONGAME CONSERVATION SECTION BIOTICS DATABASE

The Nongame Conservation Section manages the NatureServe Biotics Database, the state's most comprehensive database of occurrences of rare species and natural communities. Data in biotics are used for many purposes: environmental site reviews, conservation planning, scientific research, habitat restoration and management plan development. The database contains more than 10,000 occurrence records for rare species and provides Web access to information on occurrences of special concern species and significant natural communities. Lists of rare and protected plants and animals, a digital version of the book "Protected Plants of Georgia," and a downloadable archive of ArcView GIS extensions useful for conservation are now available online at www.georgiawildlife.com.

MOUNTAIN BOG RESTORATION

Mountain bogs are one of the most critically endangered habitats of the Southern Appalachians. Mountain bogs are typically quite small, from a half-acre to five acres, and are usually associated with seeps, springs and small creeks. These are early successional habitats that support a variety of unique and imperiled flora and fauna. Among these are the federally threatened bog turtle and swamp pink, perhaps the state's rarest reptile and plant species, respectively. Other exceptionally rare (and state-protected) mountain bog plants include the montane purple pitcherplant, Carolina bog laurel and Cuthbert's turtlehead. Unfortunately, the types of natural disturbance needed to maintain mountain bog habitats are now largely missing from the landscape, and the few remaining bog habitats must be maintained by artificially mimicking the effects of natural disturbance, using techniques such as manual clearing and prescribed fire.

For 15 years, the Nongame section, working both independently and as a member of the Georgia Plant Conservation Alliance, has engaged in mountain bog restoration that includes: locating and inventorying quality mountain bogs and those with restoration potential; developing restoration techniques/protocols suitable for this habitat; actively restoring eight bog sites (including stewardship and monitoring); collecting seeds and rearing safeguarding collections of rare mountain bog plants at botanical gardens; planting rare bog plants into restored habitats; and most recently, creating a "Bog Turtle Headstart" and population establishment program that employs two rearing cooperators, the Chattahoochee Nature Center and the Tennessee Aquarium. To date, 17 captive-reared bog turtles have been released in an effort to establish a population on public land in Georgia.



AmeriCorps crew working at a mountain bog
(photo by Georgia DNR)

GEORGIA PLANT CONSERVATION ALLIANCE

The Georgia Plant Conservation Alliance (GPCA) is an innovative network of 20 public gardens, government agencies and environmental organizations committed to preserving Georgia's endangered flora. Formed in 1995 with WRD as a charter member, GPCA initiates and coordinates efforts to protect natural habitats and endangered species through biodiversity management and public education. From rigorous scientific research, habitat restoration and management to hands-on stewardship projects with elementary schools, the combined resources, expertise and outreach strategies of GPCA members provide powerful tools for plant conservation.

One of the most important initiatives of the GPCA is the rare plant Safeguarding Program. Safeguarding is conservation at the species level emphasizing the propagation of rare plants for the purpose of preserving them in botanical gardens and arboreta, and for planting them in the wild. Using the State Wildlife Action Plan, GPCA members identified 40 plant species most urgently in need of conservation efforts for "enrollment" in the Safeguarding Program. Currently, more than 20 of these species are in cultivation at botanical gardens. Propagated stock from member gardens is used to support GPCA habitat restoration projects and NCS projects such as the restoration of mountain bogs and oak/woodland savannas.



Bog turtle *(photo by Georgia DNR)*



Bird watching at
Charlie Elliott Wildlife Center
(photo by Georgia DNR)



Red-bellied woodpecker
(photo by Georgia DNR)

PARTNERS IN FLIGHT

Georgia became fully involved in Partners in Flight (PIF) with the development of the Model Management Plan for Neotropical Migratory Birds and subsequent hiring of a PIF coordinator in 1995. PIF in Georgia has focused on five areas: management, outreach and education, monitoring, research, and international conservation. Efforts in Georgia include Birding Boot Camps, a series of three annual training workshops that teach bird identification, habitat relationships and survey methodology to land managers, foresters and educators who play a vital role in bird monitoring efforts. PIF also coordinates Breeding Bird Surveys with a goal of doubling the number of survey routes each year in Georgia. Other initiatives include International Migratory Bird Day celebrations.

PIF also conducts targeted surveys for species of conservation concern, such as Bachman's sparrow, golden-winged warbler and Swainson's warbler. Research plays a prominent role in conservation efforts. Work includes surveys and habitat analysis for loggerhead shrikes, monitoring of habitat managed for cerulean warblers, urban greenspace bird surveys, assessment of bird strikes at buildings in Atlanta, bird use of native warm-season grass restoration areas, bird use of pine savanna restoration areas, and research on the effects of various fire intensities on bird habitats in the Appalachian Mountains.

COMMUNITY WILDLIFE PROJECTS

Urban and suburban environments represent two of the fastest-growing land uses in Georgia. Although development results in the loss of wildlife habitat, remaining habitat fragments can support wildlife, provide outdoor recreation and contribute to quality of life for urban and suburban residents. The Nongame Conservation Section and the Garden Club of Georgia launched the Community Wildlife Project to enhance native nongame animal and plant populations and their habitats in Georgia's urban, suburban and rural communities; foster wildlife conservation stewardship and education in communities; promote respect and appreciation of wildlife in combination with community beautification; and better the quality of life for Georgians in these communities.

Participation is tailored to each community. Since the program's start, more than 700 communities have been awarded full certification, with more than 600 in various stages of completing certification standards. Since 2005, the new Backyard Wildlife Certification survey has added more than 1,400 certified backyards, and 195 of those have been certified with two or more adjoining neighbors' backyards to attain a Neighborhood Backyard Certification.

MARINE MAMMAL STRANDING NETWORK

The Georgia Marine Mammal Stranding Network was created in 1989 to coordinate marine mammal stranding response in Georgia. The Nongame Conservation Section coordinates the network with help from NOAA Fisheries and numerous federal, state and private organizations along the Georgia coast. Network goals are to improve the understanding of marine mammal biology, investigate human impacts on marine mammals, monitor population health, provide rapid and humane response to live stranded marine mammals, and educate the public about marine mammal issues.

Since 2002, the stranding network has investigated 163 marine mammal stranding events. Bottlenose dolphins are the most common species stranded in Georgia, followed by pygmy and dwarf sperm whales. Other species documented include Stenella dolphins, Risso's dolphins, pygmy killer whales, false killer whales, short-finned pilot whales, humpbacks, North Atlantic right whales, and Cuvier's, Gervais' and Sowerby's beaked whales.



Helping a rough-toothed dolphin during a mass stranding (photo by Georgia DNR)



Ocmulgee River (photo by Georgia DNR)

ROBUST REDHORSE CONSERVATION

The robust redhorse is a rare sucker species occurring in limited reaches of the Ocmulgee, Oconee and Savannah rivers in Georgia and the Pee Dee River in North and South Carolina. Prior to its identification in 1991 by WRD fisheries biologists sampling below Lake Sinclair, this species had not been collected for nearly 100 years. Listed as endangered in Georgia, the species has been the target of intensive recovery efforts led by a team of state, federal and industry biologists, the Robust Redhorse Conservation Committee, since the early 1990s.

A major component of this work is capturing and spawning wild fish from the Oconee River and producing young in hatcheries for restoring stocks in rivers within the former range. In partnership with the U.S. Fish and Wildlife Service, Georgia Power Co. and the University of Georgia, WRD helped develop a hatchery program in 1993 that still continues. About 115,000 hatchery-reared robust redhorse have been stocked in the Broad, Ocmulgee, Oconee and Ogeechee rivers in Georgia.

Biologists have documented healthy growth and survival rates in all stocked rivers in the state, and have observed spawning behavior in fish stocked in the Ocmulgee River. Efforts in the coming years will focus on attempts to document successful reproduction and recruitment in stocked populations. Establishment of additional self-sustaining populations will represent a major step toward recovery.

DIADROMOUS FISH CONSERVATION

Diadromous fish species such as sturgeon migrate between salt and fresh water during different stages in their life cycle. In 2004, the Nongame Conservation Section created a position for a diadromous fish coordinator to plan and coordinate management efforts. The coordinator collaborates with other resource agencies and universities to develop management plans and proposals for diadromous fish populations, delineates important diadromous fish habitats throughout Georgia's coastal rivers, assists in ongoing WRD diadromous fish restoration efforts, and works with other resource agencies to increase public outreach and awareness concerning diadromous fish stocks in the state.

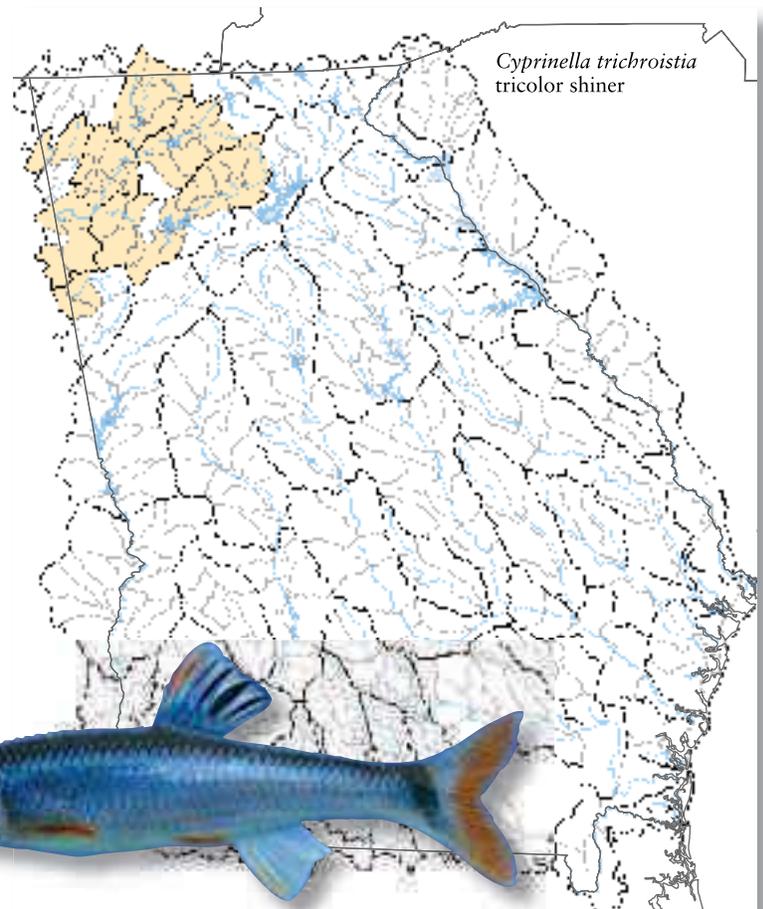
In cooperation with the South Carolina Department of Natural Resources, the coordinator completed a Striped Bass Management Plan for the Savannah River and is collaborating with other state and federal agencies to develop an Altamaha River Diadromous Fish Plan and an Alabama Shad Restoration Plan. Research is being done with American shad to determine the feasibility of large-scale hatchery production. Work also has begun on sturgeon research projects on the Ogeechee and Altamaha rivers that will provide information needed to protect Atlantic and short-nose sturgeon populations and provide a basis for habitat protection.



Atlantic sturgeon
(photo by Georgia DNR)

FISHES OF GEORGIA ATLAS

Although Georgia is ranked among the top five states in number of native freshwater fishes, no comprehensive distributional atlas is available to document this fauna. Detailed distributional data are necessary for environmental review and conservation assessments. The purpose of this project is to develop an online database of distribution for all of Georgia's freshwater fishes. Databases maintained by the Nongame Conservation Section, the WRD Stream Survey Team and the Georgia Museum of Natural History have all been incorporated into the Fishes of Georgia Atlas database. The database is scheduled to go online in 2008.



Tricolor shiner
(photo by Georgia DNR)

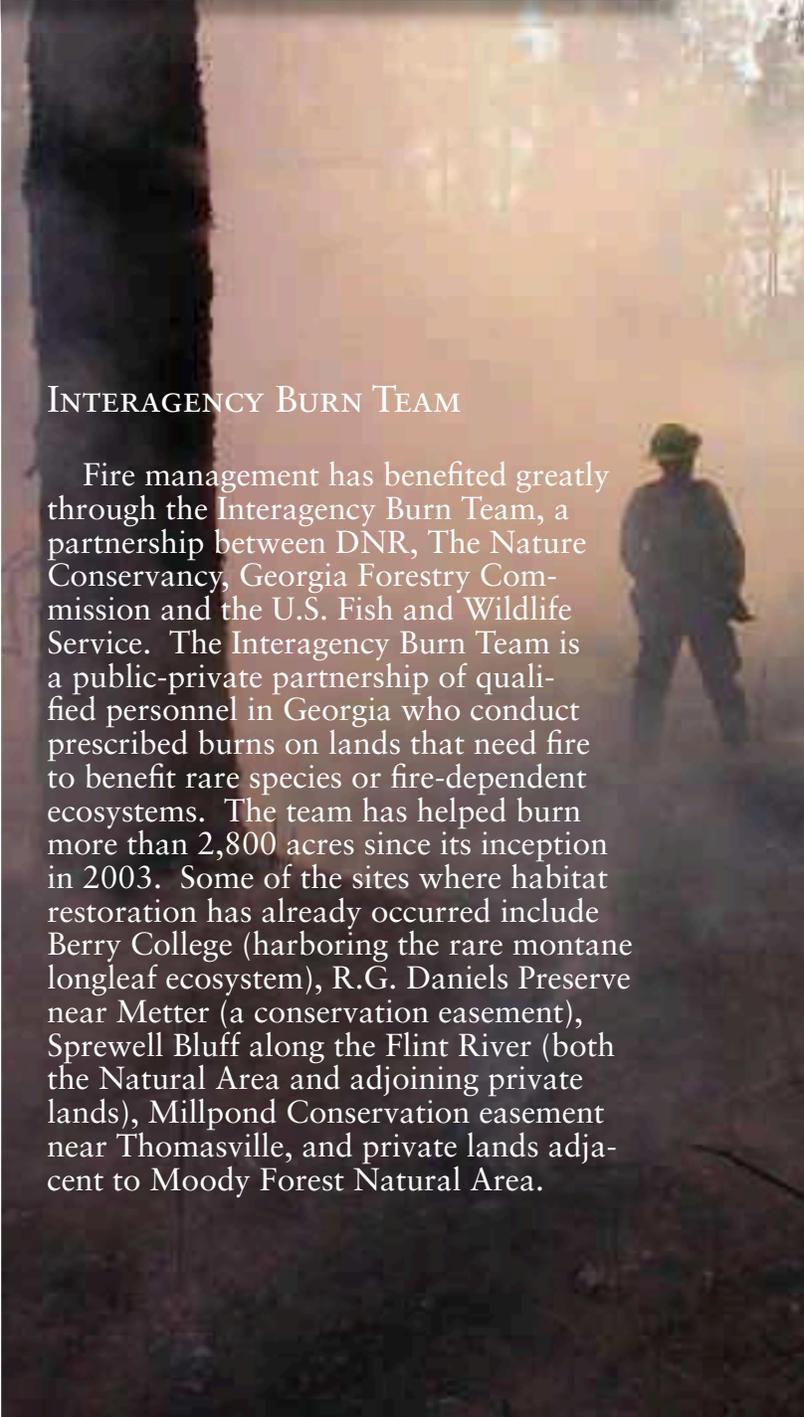
HABITAT IMPROVEMENTS ON STATE LANDS

State Wildlife Grant funding for improving rare species habitat significantly increased the Nongame Conservation Section’s prescribed burning program for 2004-2007. This practice has resulted in habitat improvements across the state, benefiting numerous game and nongame species. In the past four years, the Nongame Conservation Section has burned more than 22,775 acres in need of fire.

Nongame biologists helped improve rare species habitat through thinning timber, prescribed burning, planting longleaf pine and restoring native groundcover. Biologists carried out these projects on state parks, natural areas and wildlife management areas. The work was funded through State Wildlife Grant funds and a grant from the National Fish and Wildlife Foundation for longleaf and understory restoration. Monitoring projects are documenting habitat changes and helping drive the adaptive management process.

Other highlights include: initiation of 50-year management plans for Big Dukes Pond Natural Area and Doerun Pitcherplant Bog Natural Area; growing-season burns at a number of sites to promote biodiversity; ecological reforestation at Mayhaw Wildlife Management Area, Big Dukes Natural Area and Moody Forest Natural Area; and monitoring of fire effects on ecology at Dawson Forest Wildlife Management Area, Grand Bay Wildlife Management Area and Sprewell Bluff Natural Area.

Nongame section staff members have trained approximately 325 wildland firefighters in DNR, The Nature Conservancy and the AmeriCorps – National Civilian Community Corps. Training involved basic wildland firefighting, annual safety training, wildland power saws and a fire engine operations academy. Trainees have used these skills in applying prescribed fire to manage and improve wildlife habitat, and in fighting wildfires.



INTERAGENCY BURN TEAM

Fire management has benefited greatly through the Interagency Burn Team, a partnership between DNR, The Nature Conservancy, Georgia Forestry Commission and the U.S. Fish and Wildlife Service. The Interagency Burn Team is a public-private partnership of qualified personnel in Georgia who conduct prescribed burns on lands that need fire to benefit rare species or fire-dependent ecosystems. The team has helped burn more than 2,800 acres since its inception in 2003. Some of the sites where habitat restoration has already occurred include Berry College (harboring the rare montane longleaf ecosystem), R.G. Daniels Preserve near Metter (a conservation easement), Sprewell Bluff along the Flint River (both the Natural Area and adjoining private lands), Millpond Conservation easement near Thomasville, and private lands adjacent to Moody Forest Natural Area.

Interagency burn team (photo by Georgia DNR)

Inset: Prescribed fire (photo by Georgia DNR)

SANDHILLS INVENTORY

In 2005, the Nongame Conservation Section initiated a project to inventory the state's sandhill habitats. These habitats include long-leaf pine-turkey ecosystems along the fall line and along larger streams in southern Georgia, as well as similar habitats associated with former barrier islands in inland coastal Georgia. Other habitats associated with sandhills include natural ponds, Atlantic white cedar forests, shrub bogs and seeps. These habitats harbor a number of rare species including the southeastern pocket gopher, gopher tortoise, indigo snake, gopher frog, Bachman's sparrow and striped newt. Many of the habitats have been degraded and very few are represented in Georgia's network of conservation lands.

The Sandhills Inventory has several objectives. The first is a map of sandhills and sandhills-associated habitats throughout the state. The second is a field-based assessment of as many sites as possible, including ecological condition, rare (and other) species present and restoration potential. The third objective is to obtain an estimate of gopher tortoise populations.

The mapping phase was completed in November 2006 through a contract with the University of Georgia's Institute of Ecology. The ecological assessment and the assessment of gopher tortoise populations are ongoing.

GINSENG MANAGEMENT PROGRAM

American ginseng is regulated under The Convention on International Trade in Endangered Species, which is administered by the U.S. Fish and Wildlife Service. States in which this perennial herb is harvested must have a program for regulating its harvest and sale. The Georgia Ginseng Management Program is administered by the Nongame Conservation Section and serves the purpose of estimating the status of ginseng populations in the state and monitoring the size of the ginseng economy. The program staff works with ginseng dealers, growers and WRD Law Enforcement to make ginseng regulation a transparent and simple process.

Ginseng is most often used in Chinese and American Indian cultures. Many people believe ginseng provides medicinal benefits. Over the 26 years the Georgia Ginseng Program has been in place, there has been an overall decline in ginseng harvest and trade. This is likely due to development of lands where ginseng grows, increases in deer populations that consume ginseng, possibly an overall decrease in ginseng populations, and other factors. However, the ginseng trade in Georgia remains strong enough to merit continued regulation.



Ginseng
(photo by Georgia DNR)



Sandhills habitat (photo by Georgia DNR)



Gopher tortoise (photo by Georgia DNR)

EDUCATION

REGIONAL EDUCATION CENTERS

WRD is charged with promoting the conservation and wise use of Georgia's natural resources. Through its history, the division has educated the state's youth and adults about wildlife, habitat, management, stewardship and natural resources in a variety of ways. As growth and development increasingly threaten Georgia's wildlife and habitats, the need for wildlife education is paramount.

WRD operates six regional education centers to provide wildlife educational opportunities for students of local school systems: Charlie Elliott, Smithgall Woods, McDuffie, Arrowhead, Grand Bay and Sapelo Island. These centers leverage partnerships with local school systems, Regional Educational Service Agencies and other state and federal agencies to deliver wildlife-based education to students. Roughly 50,000 Georgia students visit these educational centers each year, acquiring valuable knowledge about the state's natural resources through hands-on learning experiences.

From 2004 through 2007, the Nongame Conservation Section provided more than \$360,000 to Smithgall Woods, McDuffie, Arrowhead and Grand Bay to fund staff salaries. Local cooperators also provided financial assistance for the positions. The support from the Nongame Wildlife Fund has increased the regional education centers' ability to reach more students through onsite and outreach programs by either maintaining or expanding staff.

CONTRACTED EDUCATIONAL PROJECTS

Because WRD facilities cannot meet all of the wildlife education needs in Georgia, one initiative funded by the Nongame Conservation Section is an annual competitive contract project for local governments and conservation organizations conducting non-game educational projects. Since 1999, more than \$440,000 has been awarded, funding 128 watchable wildlife and education projects for dozens of organizations throughout Georgia.

Some examples of funded projects from 2004-2007 include: Savannah Ogeechee Canal Museum and Nature Center (observation tower), Georgia Wildlife Federation (online guide to host plants for butterflies and moths), The Ida Cason Callaway Foundation (interpretive kiosk for birding at Callaway Gardens), Atlanta Audubon Society (Junior Birding Program and International Migratory Bird Day), Birdsong Nature Center (watchable wildlife trail guide), Georgia Plant Conservation Alliance (mountain plant

field guide), Pebble Hill Plantation (Pinewoods Bird Festival), Tidelands Nature Center (shrimp trawl and West Indian manatee educational exhibits), Armuchee Elementary School (nature trail observation stations), Tybee Island Marine Science Center (Tybee Island Sea Turtle Project), Chattahoochee Nature Center (wildlife viewing stations) and The Nature Conservancy (habitat fact sheets).



(photo by Georgia DNR)

PUBLICATIONS

Publications produced during the past four years include:

- Urban Forest and Isolated Wetlands resource guides highlighting communities of high conservation concern in Georgia
 - Revision of “Landowner’s Guide to Conservation Incentives”
 - “Salamanders of the Chattahoochee and Oconee National Forests” book
 - “Field Guide to Fishes of the Conasauga River System”
 - Southern Rivers Birding Trail brochures
 - “Snakes of Georgia and South Carolina” booklet (reprint)
 - “Is It a Water Moccasin?” brochure (reprint)
 - Comprehensive Wildlife Conservation Strategy brochure
 - The following fact sheets: Alligator Snapping Turtle, Loggerhead Sea Turtle, Gopher Tortoise, Hummingbirds of Georgia, Swallow-tailed Kite, Nesting Boxes for Brown-headed Nuthatches, Bald Eagles, Bluebird Nest Box Plans, Gilwood Bluebird Nest Box Plans, Bat Box Plans, Georgia’s Screech Owls, Attracting Amphibians to Your Backyard and Backyard Butterflies
 - Bluebird management tip sheet (reprint)
 - Citizen Scientist annual newsletter
 - Youth Birding Competition brochure
 - Project WILD Teacher Resource Guides:
- 2004: aquatic guide books, K-12 curriculum guide, WILD posters;

2005: aquatic guide books, K-12 curriculum guide, Sustaining Wildlife curriculum guides, Wildlife is Everywhere posters, Wild About Reading posters, No Child Left Behind booklets;

2006: aquatic guide books, K-12 curriculum guide, Sustaining Wildlife guides, Wild School Sites guides, Wildlife is Everywhere posters, Flying Wild guides, No Child Left Behind booklets, Flying Wild Brochures;

2007: aquatic guide books, K-12 curriculum guide, WILD posters, Sustaining Wildlife guides, Flying Wild guides;

“The Project WILD Teacher Resource Guide: Introduction to Georgia’s Natural History” was also developed to correlate Project WILD activities with the Georgia curriculum

- Posters produced or reprinted: Snakes of Georgia, Frogs of Georgia, Turtles of Georgia, Salamanders of Georgia, Crayfish of Georgia, Birds at Risk, Grow Native, Dragonflies of Georgia, Georgia’s Protected Plants, Backyard Butterflies of Georgia, Lizards of Georgia, Bald Eagle License Plate Poster, Hummingbird License Plate Poster and Give Wildlife A Chance Poster Contest.

The posters were distributed to schools and environmental education centers across Georgia. Several of the posters were produced or reprinted with financial help from Georgia Power Co. and The Environmental Resources Network, the friends group of the Nongame Conservation Section.



(photo by Georgia DNR)



Birding along the Georgia coast
(photo by Georgia DNR)

COLONIAL COAST BIRDING TRAIL

The Colonial Coast Birding Trail was the Nongame Conservation Section's first major watchable wildlife project. Consisting of 18 sites near Interstate 95, the trail was developed to provide Georgians and visitors to the state easily accessible watchable wildlife sites. This cooperative project combined the expertise of the private sector and local governments as well as state and federal agencies. Designed primarily for the beginning and casual birder, the trail offers wildlife watchers the opportunity to visit a wide range of coastal habitats including shorelines, salt marshes, old rice fields, maritime forests, tidal rivers and freshwater wetlands. More than 300 species of birds have been documented on the trail, representing more than 75 percent of the species known to occur in Georgia.

SOUTHERN RIVERS BIRDING TRAIL

The popularity of the Colonial Coast Birding Trail spawned interest in similar trails in east-central, southwest and northwest Georgia. After carefully evaluating the three regions, southwest Georgia was selected for the second trail. Named the Southern Rivers Birding Trail, this route comprises 30 sites extending from Callaway Gardens on the north to Birdsong Nature Center in the south and from Stephen C. Foster State Park on the east to West Point Dam on the west.

WILDLIFE VIEWING AREA IMPROVEMENTS

In addition to funding other educational projects, the Nongame Conservation Section also funds nongame watchable wildlife and education projects on public fishing areas and wildlife management areas. The WRD Game Management and Fisheries Management sections were awarded \$26,600 in 2004, \$39,770 in 2005, \$24,621 in 2006 and \$22,514 in 2007 for these projects: marsh pond observation site, ash pond platform, backyard wildlife education program supplies and materials, raptor cages, transmitter, interpretive trail signs, nongame wildlife interpretive trail construction materials and supplies, a forest blind, pitcherplant exhibit, wildlife driving trail, kiosks, interpretive pamphlets and materials, wildlife education teaching resources, gopher tortoise display, herbicide and berm work, habitat restoration, and wading bird impoundment improvements.

STATE PARKS & HISTORIC SITES INTERPRETIVE PROJECTS

The State Parks & Historic Sites Interpretive Projects contracts program was created to enhance wildlife viewing opportunities and habitats on Georgia's state parks and historic sites. The funding is provided to increase wildlife viewing opportunities with observation towers, boardwalks, signage, and habitat management of existing native plants and wildlife on the areas.

Georgia's state parks and historic sites were awarded \$12,540 in 2004, \$9,508 in 2005, \$8,500 in 2006 and \$9,081 in 2007 for these interpretive projects: reptile viewing facility, wildlife viewing boardwalks, native plant restoration, wildlife viewing platforms, deer exclusion area, kiosk, interpretive trail materials, native plant landscaping, spotting scopes, bird feeders, reusable interpretive guide, interpretive trail signs, salt marsh observation platform, bird taxidermy, brochures, wildlife viewing blind and habitat restoration.



Green salamander
(photo by Georgia DNR)

GEORGIA'S WILDLIFE ACTION PLAN

In December 2002, WRD began developing the Georgia Wildlife Action Plan, also known as the Comprehensive Wildlife Conservation Strategy. This planning effort coordinated by the Nongame Conservation Section involved partnerships with private and public conservation organizations and landowners throughout Georgia. The U.S. Fish and Wildlife Service approved the plan in October 2005. The goal of the Wildlife Action Plan is to conserve Georgia's animals, plants and natural habitats through proactive measures emphasizing voluntary and incentive-based programs on private lands; habitat restoration and management by public agencies and private conservation organizations; rare species survey and recovery efforts; and environmental education and public outreach activities. This plan will guide conservation efforts for WRD for the next decade.

An advisory committee composed of representatives of conservation organizations and land-managing entities was formed in 2005 to help implement the plan. High-priority action items include: expanding technical and financial assistance programs to improve wildlife habitat management on private lands; implementing prescribed fire programs to restore and maintain fire-adapted communities; developing a statewide strategy for assessment and control of invasive exotic species; establishing partnerships to conserve high-priority aquatic and wetland habitats; and implementing statewide programs for permanent land protection.

STATE PROTECTED SPECIES LIST REVISION

One of the highest priority conservation actions identified in the State Wildlife Action Plan was a review and update of the state protected species list. In 2006, Nongame staff developed an updated list for presentation to the DNR Board. The board approved the new list in October 2006. Much of the information used to support the revision was derived from species assessments conducted by Nongame section biologists and others during development of the Wildlife Action Plan. The updated state-protected species list includes 163 animals and 155 plants. The DNR Board also approved an exception to the protected species rules that allows collection of state-protected crayfish species for fishing bait. With the exception, WRD can highlight these species for conservation efforts without restricting fishing.



Smooth purple coneflower
(photo by Georgia DNR)

OTHER CONSERVATION PLANNING EFFORTS

In addition to the development of the State Wildlife Action Plan, the Nongame Conservation Section has undertaken several regional or species-specific conservation planning efforts. The section participated in the development of a habitat conservation plan for imperiled fish species in the Etowah River basin. A cooperative effort of local governments, the University of Georgia, the U.S. Fish and Wildlife Service and WRD staff produced a plan that will allow development within the upper Etowah basin while maintaining habitat for federally listed species, such as the Etowah darter, Cherokee darter and amber darter. The plan is scheduled for completion in 2008.

Staff also contributed to conservation planning efforts for rare reptile and amphibian species through a State Wildlife Grant project focused on flatwoods salamanders, gopher frogs and bog turtles. This project included field surveys for flatwoods salamanders and gopher frogs, development of a management plan for gopher frogs in Taylor County, and development of habitat management strategies for bog turtles in the Blue Ridge Mountains.

The Nongame Conservation Section also supported a study of water flow requirements for fish communities in the lower Flint River basin, an important watershed for imperiled aquatic species. This study assessed the impacts of various water-use scenarios on fish

communities in the watershed and found that water withdrawals are affecting the distribution of sensitive fish species in the basin. The study results can be used to make informed decisions regarding the use of surface and groundwater in the lower Flint basin.

Another conservation planning effort focused on the Altamaha River basin. This project provided the foundation for a conservation agreement to protect rare aquatic species. Biologists documented the distribution of endemic mussels and fish, surveyed rare mussels, assessed threats to imperiled aquatic species in the basin, investigated potential host fish for Altamaha spiny-mussel and Altamaha arc-mussel, and provided public education and outreach regarding conservation of aquatic species. This project resulted from collaborative efforts of WRD, The Nature Conservancy, the Tennessee Aquarium Research Institute and private consultants. Representatives from many other groups (U.S. Fish and Wildlife Service, International Paper, Rayonier, Georgia Power Co., Plum Creek, Georgia College & State University and Coastal Georgia Community College) also helped with mussel surveys and outreach events.



Altamaha arc-mussel
(photo by Georgia DNR)



Longleaf pine-wiregrass habitat
(photo by Marc Del Santro)

Land acquisition is one of the most important conservation tools for maintaining critical habitat for nongame wildlife. This is especially true for species that require unusual or rare habitats. From 2004-2007, more than 22,000 acres were added to the state's natural areas and wildlife management areas, with a focus on tracts containing important wildlife habitat. Some key purchases across the state included habitat for endangered red-cockaded woodpeckers in Thomas County, sandhill habitat for gopher tortoises in Taylor County, Penholoway Swamp in Wayne County, the Glass Mountain Tract in Dawson County and expansion of Moody Forest Natural Area on the scenic Altamaha River.

RIVER CREEK WMA

In 2005, Georgia DNR purchased 2,431 acres in the state's Red Hills region in Thomas County. River Creek, the Rolf and Alexandra Kauka Wildlife Management Area (WMA) includes 4.2 miles of frontage along the scenic Ochlockonee River, with bottomland pine-hardwood forests and upland longleaf pine forest. The property also borders four miles of Barnett's Creek. Acquisition of the tract was made possible through project partners including The Conservation Fund, U.S. Fish and Wildlife Service, Doris Duke Charitable Foundation, and Weekend for Wildlife donors including Georgia Power Co., the Williams Family Foundation, William H. Flowers Jr. Foundation, Balfour Land Co. and Kauka Farms Inc.

River Creek contains the finest fire-maintained longleaf pine forest on state land and provides habitat for numerous species such as the gopher tortoise, northern bobwhite quail, Bachman's sparrow and the red-cockaded woodpecker. The mature floodplain forest along the Ochlockonee River harbors numerous species of neotropical migrant songbirds and many game species such as white-tailed deer and wild turkey. State management of this tract, which lies adjacent to Greenwood Plantation, will facilitate recovery efforts for the red-cockaded woodpecker and other rare species associated with longleaf pine communities. Conserving the land will also protect water quality in the Ochlockonee, a high-priority stream for conservation.

PATTERSON TRACT

In partnership with DNR and the U.S. Fish and Wildlife Service, The Nature Conservancy acquired the 270-acre Patterson Tract in Murray County to help protect water quality on Holly Creek, a tributary of the Conasauga River. The Conasauga has long been recognized for its richness in aquatic species and is considered globally significant to the conservation of freshwater biodiversity. Holly Creek is designated as a high-priority stream in the Georgia Wildlife Action Plan because it contains the best known populations of the Alabama moccasinshell, Coosa Moccasinshell and five other imperiled aquatic species. The stream is a stronghold for fishes and is among the few tributary streams that still contain populations of freshwater mussels. Twenty-five fish species occur within Holly Creek and neighboring Dill Creek, including the federally threatened blue shiner.

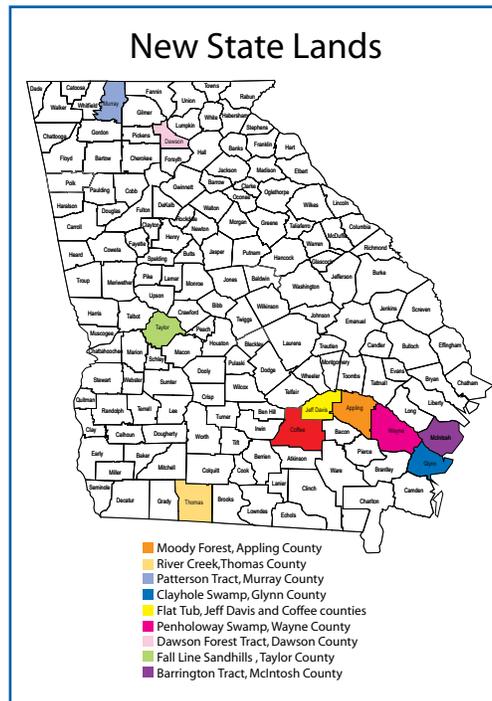
CLAYHOLE SWAMP TRACT

The Clayhole Swamp Tract, covering approximately 5,243 acres, was purchased for \$5.3 million from The Nature Conservancy in 2006. In addition, Blue Sky Timberlands donated 254 acres adjacent to this tract. The property contains high-quality natural habitats and rare species such as

the swallow-tailed kite, gopher tortoise, eastern indigo snake, gopher frog and a number of rare plants. The acquisition protected 5.8 miles of frontage along the scenic Altamaha River. This site is operated as a wildlife management area for public recreational uses including bird watching, hiking, hunting, fishing and environmental education. Funding was provided by the U.S. Fish and Wildlife Service through a Coastal Wetlands grant and a North American Wetlands Conservation Act grant. Private donors also contributed to the purchase.

MOODY FOREST NATURAL AREA

In 2004, the state completed acquisition of a 479-acre addition to Moody Forest Natural Area in Appling County. This property was acquired with a red-cockaded woodpecker land-acquisition grant from the Fish and Wildlife Service. The Nature Conservancy dedicated a 330-acre conservation easement donation as part of the nonfederal funding match.



FLAT TUB LANDING

In 2006, DNR purchased the 2,058-acre Flat Tub Landing tract from The Nature Conservancy for \$2.2 million. This property is in Jeff Davis and Coffee counties and borders the Ocmulgee River. The site contains a variety of important natural habitats, including Altamaha Grit outcrops and longleaf pine forest. The threatened eastern indigo snake and gopher tortoise also inhabit the area. Rare or uncommon plants found here include the Georgia plume and green-fly orchid.

DNR partnered with The Nature Conservancy, Plum Creek Timberlands LLC and the Georgia Forestry Commission, and used a federal Forest Legacy Grant to fund much of the project. This unique habitat will be operated as a wildlife management area for public recreational uses including bird watching, hiking, hunting, fishing and environmental education. An additional 1,591 acres will be donated by Plum Creek Timber Co. following completion of a stream and wetland mitigation bank.

PENHOLLOWAY SWAMP TRACT

The Penholoway Swamp Tract, covering approximately 4,270 acres in Wayne County, was purchased from The Nature Conservancy for \$4.3 million in 2005. Blue Sky Timberlands LLC also donated an adjacent 313 acres on which the state holds a conservation easement. These transactions protect 8.5 miles of land along the Altamaha River. The Penholoway Swamp Tract contains high-quality natural habitats and rare species such as the swallow-tailed kite, gopher tortoise, eastern indigo snake, gopher frog and a variety of rare plants.

This tract will be operated as Penholoway Swamp Wildlife Management Area for public uses including bird watching, hiking, hunting, fishing and environmental education. Funding sources included a State Wildlife Grant, a North American Wetlands Conservation Act grant and private donations from members of Ducks Unlimited and the National Wild Turkey Federation.

GLASS MOUNTAIN TRACT / DAWSON FOREST WMA

In 2006, DNR completed acquisition of 1,073 acres in Dawson County from The Nature Conservancy. This property became part of Dawson Forest Wildlife Management Area. Funds for the purchase included general obligation bonds, a U.S. Fish and Wildlife Service grant and private

foundation funds. The diverse habitat on the Glass Mountain Tract makes it a desirable addition to Dawson Forest. The property is in the headwaters of the Amicalola sub-watershed of the Etowah basin, where forests surround and protect this important water resource. The Etowah River includes some of the most species-rich aquatic habitat in the eastern U.S. Three fish species in this basin (the Etowah darter, Cherokee darter and amber darter) are federally listed as threatened or endangered. Protecting this high-priority habitat was identified as a critical conservation strategy for the species' recovery.

FALL LINE SANDHILLS NATURAL AREA

In 2006, DNR approved the purchase of 884 acres in Taylor County. The tract was bought from AmSouth Timber Fund LLC for \$1.33 million. The Nongame Conservation Section will manage the property as Fall Line Sandhills Natural Area. The tract provides critical habitat for a number of state and globally imperiled plant and animal species. Rare animals known from the site include gopher tortoise, gopher frog, Bachman's sparrow, southeastern kestrel and striped newt. Imperiled plants include Pickering's morning-glory, pondberry, sandhill golden-aster and lax water-milfoil.

The acquisition allows WRD to restore and manage the upland and wetland habitats essential for these species, including land management practices such as prescribed burning that will reduce encroachment of undesirable woody plants. The tract may be used as a recipient site for gopher tortoises displaced by land conversion elsewhere. Additionally, gopher frog eggs collected here will be used to restore gopher frog populations on other protected sites in the state. Funding sources included a State Wildlife Grant and private donations.

BARRINGTON TRACT

This site along the lower Altamaha River contains a variety of high-quality natural habitats including bottomland hardwood forest, freshwater tidal swamp and remnants of longleaf pine forest. In 2007, DNR completed acquisition of the Barrington Tract, providing permanent protection for 4,528 acres, approximately 1,598 of which are wetlands. Long-term management of this tract will support conservation of a variety of high-priority species, including the indigo snake, gopher tortoise, swallow-tailed kite, gopher frog, Radford's mint and pond spice.

FUNDING/ ADMINISTRATION

The Nongame Conservation Section is funded entirely through donations, with no state general funds provided for the conservation of endangered species and other nongame wildlife. As a result, fund raising is a continued priority for the section. Three primary fund-raising vehicles are used: Weekend for Wildlife, the State Income Tax Checkoff and Nongame wildlife automobile license plates.

WEEKEND FOR WILDLIFE

In 1989, a small group of wildlife enthusiasts and the DNR held the first Weekend for Wildlife at the Cloister at Sea Island, a five-star resort. This prestigious annual fund-raiser



offers unique outings to some of Georgia's remote barrier islands and other natural wonders along the coast, while benefiting the Nongame Wildlife Conservation Fund through donations and auctions. Thousands have taken part since 1989. Participants included three Georgia governors, helping make Weekend for

Wildlife a success. The event grossed \$449,000 in 2004, \$603,000 in 2005, \$725,000 in 2006 and \$850,000 in 2007.

INCOME TAX CHECKOFF

The "Give Wildlife A Chance" State Income Tax Checkoff began in 1989 and provides an easy way for Georgia taxpayers to contribute to the Nongame Wildlife Conservation Fund. By filling in a dollar amount on line 26 of the long form (Form 500) or line 10 of the short form (Form 500EZ), citizens can make a direct donation to support non-



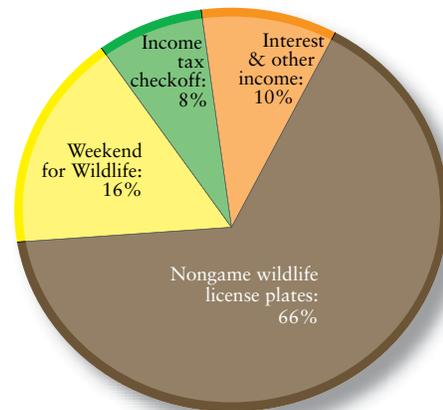
game species management and conservation in Georgia. Donations can be deducted from refunds or added to tax payments. This fund-raising mechanism netted \$1.3 million from 2004-2007.



WILDLIFE LICENSE PLATES

The Nongame wildlife automobile license plate has been the largest funding source for the Nongame Wildlife Conservation Fund since its inception in 1997. In December 2003, the tag featuring a bald eagle with an American flag went on sale. In December 2005, a second plate featuring a ruby-throated hummingbird was introduced. The two license plates, each now available for a one-time \$25 fee, have raised more than \$10.5 million in the past four years.

NONGAME WILDLIFE FUND REVENUES



FISCAL YEARS 2004 - 2007

THE ENVIRONMENTAL RESOURCES NETWORK

The Environmental Resources Network (TERN), the friends group of the Nongame Conservation Section, continues to provide critical support. TERN raised money primarily through membership fees, designated donations, and the sale of raffle tickets and gift, silent and verbal auction items at Weekend for Wildlife.

The group funded section projects totaling \$25,026 in calendar year 2004, \$43,397 in 2005, \$54,288 in 2006 and more than \$84,000 in 2007. Projects included informative publications, posters and kiosks; research and surveys; demonstration areas; the annual Youth Birding Competition, Fire on the Mountain and poster contest events; Sanctuary on Sapelo; and purchase of some important field equipment.



Wildlife Resources Conservation Center
(photo by Georgia DNR)

COMPLETION OF WILDLIFE RESOURCES CONSERVATION CENTER

In 2006, WRD completed construction of a new office building at 2065 U.S. Highway 278 S.E. in Social Circle. The building houses personnel from WRD’s Nongame Conservation, Game Management, Fisheries Management and Law Enforcement sections, as well as the License and Boat Registration Unit. The 16,800-square-foot, LEED-certified center was built through a partnership with the U.S. Coast Guard Boating Safety Program, the U.S. Fish and Wildlife Service, State Wildlife Grants Program, Wildlife Restoration Program, Sportfish Restoration Program and the Nongame Wildlife Conservation Fund.

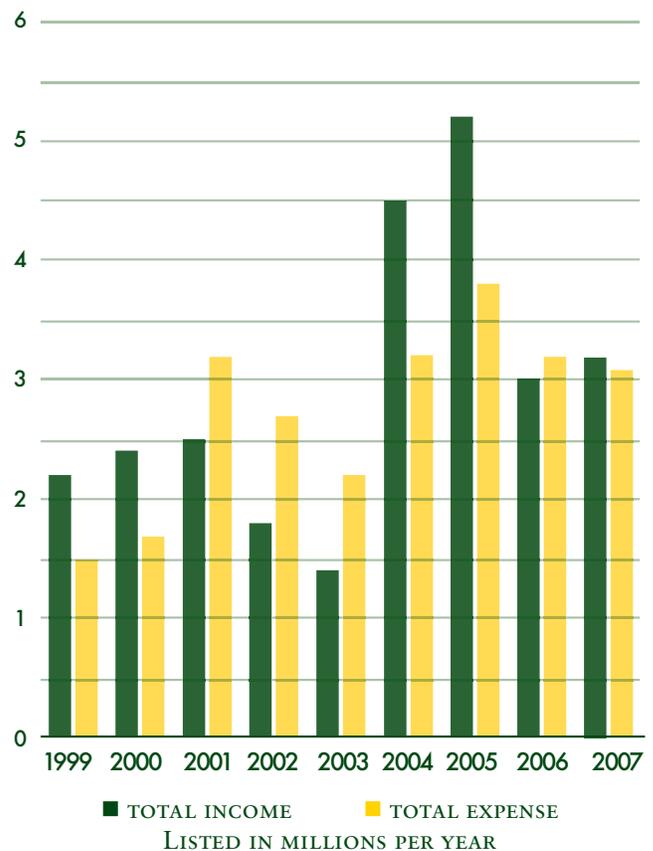
FEDERAL AND OTHER FUNDING

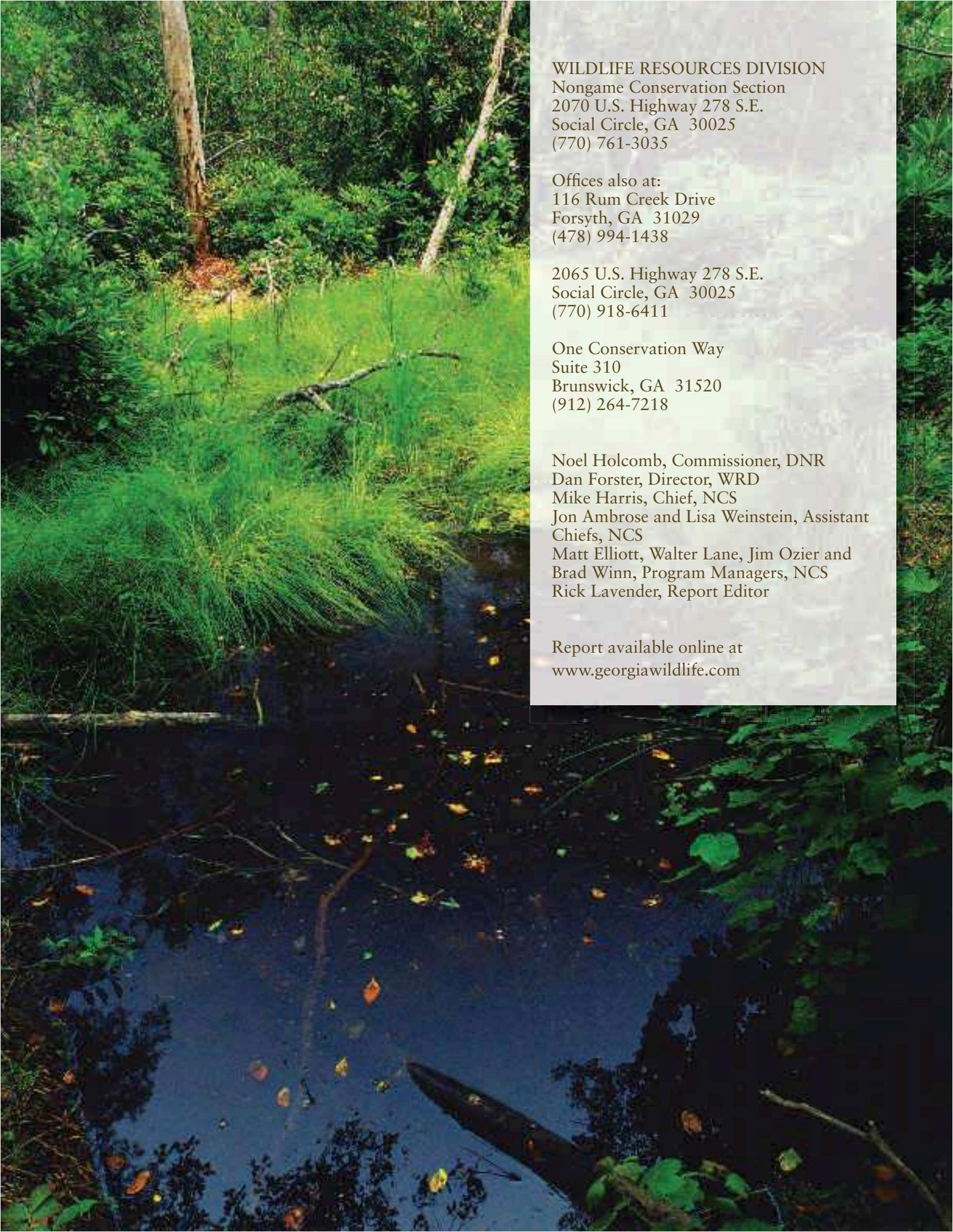
The Nongame Conservation Section received more than \$16.8 million from federal funding sources for fiscal years 2004-2007. This total includes more than \$6 million awarded through the State Wildlife Grants Program, which is disbursed by Congress through the U.S. Department of the Interior. The four-year total also includes more than \$748,000 from the nonprofit National Fish and Wildlife Foundation and \$59,500 from the U.S. Department of the Navy. The section also received \$2.5 million from the Woodruff Foundation during this period.

SECTION ADMINISTRATION

From 2004-2007, the Nongame Conservation Section made several administrative changes to meet the challenges of an increasingly complex array of conservation projects and initiatives. These included the creation of an assistant chief position, the promotion of three employees from wildlife biologist to senior wildlife biologist, the promotion of a senior wildlife biologist to program manager, the conversion of a wildlife technician II position to wildlife biologist, and the upgrade of all full-time non-seasonal hourly positions to salaried positions with full benefits. In addition, the Brunswick Nongame office became a full program equivalent to the Social Circle and Forsyth offices, and a new field office opened at River Creek, the Rolf and Alexandra Kauka Wildlife Management Area.

NONGAME WILDLIFE FUND REVENUE & EXPENSES





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Nongame Conservation Section
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Social Circle, GA 30025
(770) 761-3035

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2065 U.S. Highway 278 S.E.
Social Circle, GA 30025
(770) 918-6411

One Conservation Way
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Noel Holcomb, Commissioner, DNR
Dan Forster, Director, WRD
Mike Harris, Chief, NCS
Jon Ambrose and Lisa Weinstein, Assistant
Chiefs, NCS
Matt Elliott, Walter Lane, Jim Ozier and
Brad Winn, Program Managers, NCS
Rick Lavender, Report Editor

Report available online at
www.georgiawildlife.com