

### ***Collaboration Aids Red-Cockaded Woodpeckers Left Homeless by Spring Storms***

On the evening of March 15, 2008, severe weather struck across the state of South Carolina spawning multiple tornados. In addition to the devastating human toll, red-cockaded woodpeckers (RCWs) suffered some great losses. RCW habitat was destroyed on three separate properties in Williamsburg County, two of which are currently enrolled in the South Carolina RCW Safe Harbor program. One RCW cluster on each property was completely destroyed. Representatives from the Charleston Field Office worked diligently with the landowners in the storm's aftermath to assess the damage and ensure that salvage timber harvest operations did not disturb the remaining RCWs that were already entering their nesting season.

As damage assessments began, the toll was becoming evident. At one location, five RCW cavity trees were lost. On another property, damage was severe enough that biologists believed one group of RCWs was a total loss. During a follow-up site visit, Charleston Field Office biologist, Jason Ayers, observed three RCWs actively foraging amongst the damage. Despite the amount of devastation, it appeared as if enough foraging habitat remained to support an RCW group. With little time to waste, Milliken Forestry Company was contacted.

Milliken Forestry Company has worked closely with the Service for a number of years on RCW conservation in South Carolina. The company also has the distinction of having the greatest number of properties, RCWs, and acreages enrolled in the South Carolina RCW Safe Harbor program. And in keeping with their commitment to RCW conservation, Milliken Forestry was ready to make responding to this devastation their priority. With funding provided by the Service, artificial cavity installation work began on the damaged properties. Five artificial cavity inserts were placed on one property and four inserts were placed on the other property.

Proving their resilience, the RCWs responded. In less than a month, both Safe Harbor properties again had active clusters. Thanks in large part to Milliken Forestry and their willingness to assist the Service in responding to this natural disaster. Biologists will continue to closely monitor this once homeless group of endangered species.



*(Above) Snapped RCW cavity trees, Williamsburg County. Photo credit: Jason Ayers, U.S. Fish & Wildlife Service*



*(Above) Newly installed artificial cavity, Williamsburg County. Photo credit: Jason Ayers, U.S. Fish & Wildlife Service*

### ***Conservation Banking Tool for the Endangered Carolina Heelsplitter—UPDATE***

Lancaster County Council voted earlier this year to pass a resolution creating the Carolina heelsplitter conservation overlay district. As a result of this conservation plan, any master planned development in the Sixmile Creek watershed will be required to adhere to minimum buffer widths on intermittent and perennial streams and offset impacts due to impervious surfaces through purchase of credits in the Carolina heelsplitter Conservation Bank. The decision was made to create the conservation district through resolution rather than ordinance so that projects in the Sixmile Creek watershed can proceed without delay. The Conservation Banking Instrument is currently being reviewed for technical merit and policy consistency by the Solicitor for the Department of the Interior. Review is expected to be completed by Fall 2008.

### *Saving the Savannah River Shad*

As predictable as the sun rise each morning, Spring brings a return of the American shad to the Savannah River System. After spending nearly four years in the open ocean and traveling thousands of miles, American shad will return to the very river systems from where they were spawned. This year's spawning shad, however, made the return trip to the Savannah River System only to meet a virtual dead end at New Savannah Bluff Lock and Dam.

At River Mile 187, New Savannah Bluff Lock and Dam near Augusta, Georgia is the first in a series of dams on the Savannah River. Operated by the City of Augusta, the dam's lock gates are opened several times during the Spring to allow for passage of fish to spawning grounds in the shoal habitat above the dam. Unfortunately, this year's run of shad was not going to be afforded the opportunity

to access those spawning grounds. The lock gates at New Savannah Bluff Lock and Dam were rendered non-functional earlier this Spring, placing the Savannah River shad at an impasse. Access to historic spawning grounds was not to happen this year.

That was until two separate shad "trap and transport" efforts were organized by biologists from Bears Bluff National Fish Hatchery, Charleston and Asheville Field Offices, the U.S. Army Corps of Engineers, National Marine Fisheries Service, South Carolina Department of Natural Resources, Georgia Department of Natural Resources, and The Nature Conservancy. Positioned at the base of the dam, electroshock boats filled with biologists shocked and trapped nearly 900 American shad. Fish were collected and moved to waiting transport trucks and then carefully released above the dam so the journey to spawning

grounds could continue. Nearby anglers watched in amazement as the boat loads of shad were "assisted" with their migration. Reporters, carefully positioned in nearby media boats, also witnessed firsthand this well-orchestrated "assisted" migration.

Deeply rooted in the history and culture of both South Carolina and Georgia, shad fishing on the Savannah River is a fishery that has been in a steady decline since the late 1800's. Shad landings on the Savannah have fallen from nearly 500,000 thousand pounds in the late 1800's to currently around 30,000 pounds. Faced with the possibility of a failed shad run this Spring, the Service, in cooperation with its partners, decided that the assisted migration was a necessary step. Going the extra mile to help secure the future of the Savannah River shad fishery—an "assisted migration" that was well worth the effort.



*(Left) Biologists with the U.S. Army Corps of Engineers and the Service retrieving shad at the base of New Savannah Bluff Lock & Dam (Below) American shad Photo credits: Jennifer Koches, U.S. Fish & Wildlife Service.*



### *What a Croc!*

American crocodile, that is. This past May, the Charleston Field Office received reports of an American crocodile residing in a Mt. Pleasant neighborhood pond. Special Agents with the Service's Charleston Law Enforcement Division contacted the South Carolina Department of Natural Resources and a plan was devised to capture this Federally protected species and send him back to his native grounds in southwest Florida. Gator Getter Consultants, LLC was enlisted to help capture the crocodile. After weeks of eluding capture, the crocodile disappeared from the Mt. Pleasant pond, only to subsequently be found a few miles away in the surf at the Isle of Palms.

The crew from Gator Getters was dispatched to the site and after a brief struggle, the crocodile was captured and held until transport to a captive breeding facility in Palmdale, Florida could be arranged. As eager reporters, photographers, and television camera crews watched, the crocodile was loaded up into his transport truck for the long ride back to Florida. No one knows for sure how this wayward crocodile came to call Mt. Pleasant his home but the prevailing theory is that he was illegally transported into the state of South Carolina by a previous owner. Captive bred crocodiles can be legally bought and sold in the state of Florida but cannot be transported



*(Above) Captured croc readied for transport to Florida. Photo credit: Jennifer Koches, U.S. Fish & Wildlife Service.*

across state lines. Having likely outgrown his "accommodations" in South Carolina, chances are he was released carelessly into the wild by the former owner.

### ***Invasive Species Spotlight: Laurel Wilt Disease***



*(Above) Dying redbay trees, Georgia. Photo credit: James Johnson, Georgia Forestry Commission*

First detected in 2002 at Port Wentworth, Georgia, the Asian Ambrosia Beetle was nothing more than a barely visible hitchhiker. Having likely arrived at the port from Asia via packing materials, the discovery of this obscure little beetle has marked a devastating time for the redbay trees of the coastal plain. As redbays began dying, first at Hilton Head, South Carolina and then in other coastal areas of South Carolina and Georgia, a multi-agency team was dispatched to investigate the die-offs. Sure enough, the wayward Asian Ambrosia Beetle was at fault—a vector for what has become known as Laurel Wilt Disease (a.k.a. Redbay Disease). Laurel Wilt has made a progressive march across the coastal plain of South Carolina, Georgia, and Florida. It now reaches as far north as Charleston

County, South Carolina and as far south as Indian River County, Florida. And redbays are not the only target. Sassafras kills in Georgia have been documented. Avocadoes are at risk—a potential economic nightmare for Florida. And, in South Carolina, a Federally endangered plant, Pondberry (*Lindera melissifolia*) is at great risk, as is Pondspice (*Litsea aestivalis*), a Federal Species of Concern. Staff from the Charleston Field Office will continue to monitor populations of these two plants as the disease makes its' progression through the state. At this time, no eradication methods have been developed. However, seed banking (collection and storage) efforts have been initiated which will assist in repopulating areas once the disease has run its' course.

### ***Savannah Harbor Deepening Project***

The U.S. Army Corps of Engineers and the Georgia Ports Authority are pursuing deepwater navigation expansion to support container shipping through Savannah Harbor, Jasper County, South Carolina and Chatham County, Georgia. The Charleston Field Office has been actively involved in the National Environmental Policy Act (NEPA) review for this project, addressing issues of significance to the Service and partners (U.S. Army Corps of Engineers, Georgia Ports Authority, U.S. Geological Survey, Georgia Department of Natural Resources, South Carolina Department of Natural Resources and several non-governmental organizations). The Service has

completed a Plan Formulation Planning Aid Report for the Savannah Harbor Expansion Study. The report, authored by Ed EuDaly of the Charleston Field Office, was provided to the Savannah District Corps of Engineers on June 18, 2008. The current Savannah Harbor depth is 42 feet. Impacts of alternative project depths of 44, 45, 46, and 48 feet were evaluated using hydrodynamic and biological models. A number of mitigation measures have been proposed by the Corps. Most of these measures are based on channel and flow modifications in the estuary. The 44 and 45 foot plans (with mitigation) avoid or minimize impacts to tidal freshwater marsh and the Sa-

vannah National Wildlife Refuge's freshwater supply system. The 45 foot depth minimizes impacts to striped bass habitat and the 44 foot depth minimizes impacts to shortnose sturgeon, a Federally protected species. Based on the available information, it is clear that the 44 and 45 foot alternatives would have much lower impacts on fish and wildlife resources. Impacts of the project increase substantially at the 46 and 48 foot depths. For any project implemented, the Service supports a comprehensive monitoring program to document actual impacts. To view and download the entire report, go to: [http://www.fws.gov/charleston/docs/federal\\_projects.html](http://www.fws.gov/charleston/docs/federal_projects.html).

### ***Planning for Roadways***

Transportation funding concerns have slowed the planning and construction of new roads in South Carolina. Increasingly, the Council of Governments (COGs) and Municipal Planning Organizations (MPOs) throughout South Carolina are taking up the torch to fund and build roadways through sales tax programs similar to Charleston County's. The Charleston Field Office has initiated an effort to contact these local bodies, as well as the South

Carolina Department of Transportation's (SCDOT) maintenance crews to relate the importance of resource management, particularly the Service's trust resources (threatened and endangered species, migratory birds, wetlands, and National Wildlife Refuges). Mark Caldwell of the Charleston Field Office is currently in the process of arranging visits with each of the COGs, MPOs and SCDOT maintenance districts to present information

about the Service's mission and address specific issues for their respective regions. It is hoped that providing early coordination with these groups will aid in the avoidance of future road impacts to trust resources. COGs and MPOs can utilize information provided by the Service to develop Context Sensitive Designs for their desired roadways with only slight alterations to maintenance operations.

### Strategic Habitat Conservation

Whether a newcomer or lifelong resident of South Carolina, there is no doubt that you have noticed the rapid-fire pace of development across the state. And, much to the credit of the conservation community, there is much that has been protected. But there is plenty that remains to be protected. Our state hosts a wealth of natural resources—hence the draw to folks from “off” who want to experience what we have to offer. It is that lure and appeal that have agencies like the Service facing tough times.

With budgets leaner and natural resources more at risk than ever before, the Service, in conjunction with the U.S. Geological Survey, took a hard look at the way we do business. Out of this study came the development of a new and improved business model for the Service called *Strategic Habitat Conservation* or SHC. Utilizing the many technological advances now at our fingertips—Geographic Information Systems (GIS), remote sensing, database management—conservation can be carried out in a more strategic and focused manner. SHC offers better prioritization of conservation actions, increasing efficiency and more effectively relaying the purpose and need for certain conservation actions.

In addition to the technological advances that assist our conservation efforts, other functional changes are taking place. The Service is challenging itself to integrate their planning efforts more effectively with other Federal, State, and non-governmental partners in order to address conservation at the landscape level. Not a “watered-down” approach to conservation efforts—SHC is simply a specific form of adaptive resource management where habitat management is the primary form of intervention, integrating planning efforts and recommendations of South Carolina’s State Wildlife Action Plan. Making efficient management decisions, developing and refining conservation strategies, and using research and monitoring to inform future decisions are all the basic tenants of the SHC design. (Figure 1).

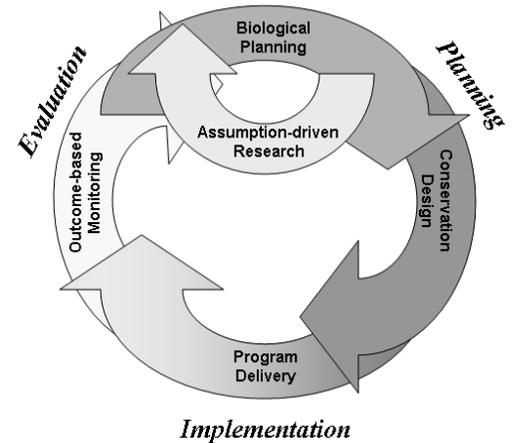


Figure 1. The basic Strategic Habitat Conservation (SHC) cycle.

### Swallow-tailed Kite and Strategic Habitat Conservation



(Above) Swallow-tailed kite. Photo credit: Jeff Mollenhauer, Audubon South Carolina

A glamorous species of raptor, by all accounts, the Swallow-tailed kite has experienced alarming population declines over the decades. Swallow-tailed kites once spanned most of the southeastern United States, occupying at least 17 states, and quite possibly up to 21 states. By the 1940’s, the bird’s breed-

ing range was severely restricted to mostly the riverine systems and coastal plain regions of Georgia, South Carolina, Louisiana, Alabama, Mississippi and Florida. Although the exact cause of the kite’s decline remains unknown, researchers suspect that loss of bottomland hardwood nesting habitat, increased amount of ditched and drained farmland, and the loss of prairie habitat are the main contributing factors.

The northern subspecies of swallow-tailed kite currently occupies areas of the southeastern United States during the breeding season (mid-March-August) and winters in South America. Throughout its’ range, it occupies a variety of habitats, ranging from floodplain forests near mosaics of open habitat, to swamplands, lowland marshes, and prairies. Nesting studies in South Carolina have found that swallow-tailed kites use tall pine and cypress trees averaging 90-100 feet in height. Historically, a variety

of other tree species have been used for nesting including cottonwood, pecan, birch, sycamore, and other hardwoods. It is estimated that the U.S. has 800-1150 breeding pairs of swallow-tailed kites. South Carolina supports about 15% of that breeding population. A 7-year swallow-tailed kite research and survey study, jointly conducted by the Center for Birds of Prey and the South Carolina Department of Natural Resources in coastal South Carolina from 1998 to 2004, found an estimated 120 -170 breeding pairs of birds. However, additional non-breeding birds (second year and third year birds) may increase population numbers to as high as 450 individuals in South Carolina at the beginning of nesting season.

Using the swallow-tailed kite as a focal species for Strategic Habitat Conservation, the Service is developing a plan to implement landscape-level protection efforts in the Pee

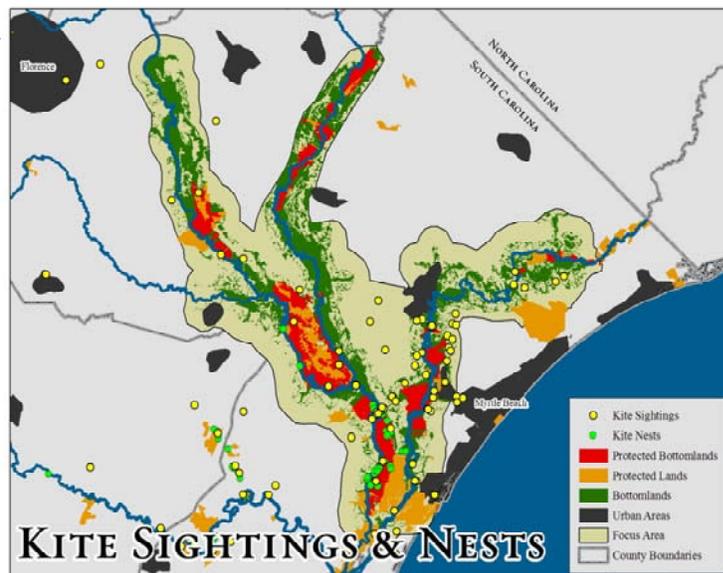
### ***Swallow-tailed Kite and Strategic Habitat Conservation (cont'd)***

Dee and Waccamaw watersheds. Joining forces with a host of conservation partners, the Service is now part of the South Carolina Working Group for Swallow-tailed Kites. This group has created Spatially Explicit Model (SEM) maps for the swallow-tailed kite in South Carolina, generated with information relating to habitat requirements, population goals, and limiting factors for the species as noted in the biological planning process. Utilizing the best available technology, these maps are working models and will assist in the designation of priority areas for swallow-tailed kites. (Figure 2.) The South Carolina Working Group for Swallow-tailed Kites has also initiated a Citizen Science for Swallow-tailed Kites Program to assist biologists with monitoring and data collection, creating an on-line reporting form for swallow-tailed kite sightings, as well as education and outreach plans for the program.

Focal species, such as the swallow-tailed kite, are used to broadly represent similar management or habitat needs of larger guilds of species. Since swallow-tailed kites require a matrix of bottomland hardwoods for nesting and open habitat, swampland, lowland marsh, and prairie for foraging, other species such as black bear, king rails, black-throated green warblers, prothonotary warblers, Swainson's warblers, and short-nose sturgeon may benefit from complementary protection efforts. The Southeast Partners in Flight Working Group (SEPIF), a consortium of State and Federal agencies, conservation organizations, and industrial and non-industrial landowners, has worked to establish habitat objectives and population goals for the swallow-tailed kite in the southeastern United States. Within the Pee Dee and Waccamaw watersheds, SEPIF has identified population goals of 80-100 pairs of swallow-tailed kites to assist in meeting overall regional population targets.

Partner land protection organizations like The Nature Conservancy and the Pee Dee Land Trust have included protection of swallow-tailed kite habitat as a conservation value in conservation easements on coastal mature bottomland hardwood tracts. Land acquisition incentives and protection efforts using swallow-tailed kites as an umbrella species extend to federally protected lands as well, such as the Waccamaw National Wildlife Refuge and the lower Santee region of the Francis Marion National Forest. Waccamaw National Wildlife Refuge, established by the Service in 1997, supports a high density of nesting swallow-tailed kites. The refuge's acquisition boundary spans 54,000 acres and contains portions of the Great and Little Pee Dee Rivers and the Waccamaw River.

Ultimately, the goal of Strategic Habitat Conservation planning in the Pee Dee and Waccamaw watersheds is to protect higher quality habitat that will not only assist with meeting the population goals set for the swallow-tailed kite but will also benefit a suite of species that utilizes the same types of habitats. And with focused and well guided habitat protection efforts, continual research and monitoring of the swallow-tailed kites will be essential for tracking progress towards their population goals.



**Figure 2.** Swallow-tailed kite Spatially Explicit Model (SEM) map for the Waccamaw and Pee Dee watersheds. Map created by Neil Jordan of The Nature Conservancy, South Carolina and the SC Working Group for Swallow-tailed Kites.

South Carolina Working Group for Swallow-tailed Kites:

Arcadia Wildlife Preserve, Inc.

Audubon South Carolina

Clemson University, Department of Forest Resources

Coastal Aviation

College of Charleston, Masters of Environmental Studies Program

South Carolina Department of Natural Resources

Center for Birds of Prey

Pee Dee Land Trust

The Nature Conservancy, South Carolina Field Office

U.S. Fish and Wildlife Service

U.S. Fish and Wildlife Service, Atlantic Coast Joint Venture

U.S. Forest Service

To report swallow-tailed kite sightings for the Citizen Science for Swallow-tailed Kites Project, visit:

<http://www.thecenterforbirdsofprey.org/swallowtail/swallowtail.html>

## Field Perspectives

## Volume 1, Issue 1—Summer 2008

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### ***Reclaiming the Lowcountry—Inspiring the Educators***

Who said teachers take a break from school in the summer? Give them a reason to learn, and they will come. A teacher workshop on invasive species, held in June at the Sewee Visitor and Environmental Education Center in Awendaw, was funded in part by a grant through the Savannah-Santee-Pee Dee Ecosystem Restoration Fund and the Service's Coastal Program. The course, accredited by the College of Charleston, provided participating teachers with 3 hours of continuing education credits.

The weeklong course on invasive species entitled *Reclaiming the Lowcountry: Investigating Local Ecosystems from the Forest to the Sea* was designed by the Sewee Association, a non-profit corporation organized to promote understanding and appreciation of the natural environments of the Southeast. The Association partners with governmental agencies and other interested parties in support of their research, biological, historical, educational, and interpretive activities. Partners include Cape Romain National Wildlife Refuge, Ernest F. Hollings ACE Basin National Wildlife Refuge, Waccamaw National Wildlife Refuge, and the Francis Marion National Forest.

Thirteen middle and high school teachers from across the state participated in the course which featured lectures and presentations by natural resource professionals from several



*(Above) Julie Binz introduces the teachers to Laurie Reid with the South Carolina Forestry Commission. Photo credit: Jennifer Koches, U.S. Fish & Wildlife Service*



*(Above) Teachers with Reclaiming the Lowcountry course listen as John Brubaker with the South Carolina Native Plant Society describes native coastal plants. Photo credit: Jennifer Koches, U.S. Fish & Wildlife Service*

different state and Federal agencies and non-profit organizations: U.S. Fish & Wildlife Service, U.S. Forest Service, U.S. Geological Survey, South Carolina Department of Natural Resources, South Carolina Forestry Commission, Clemson Department of Plant Industry, The Nature Conservancy, and the South Carolina Native Plant Society. Each teacher was provided with a set of reference books and field guides for use in their classrooms. In addition to class lectures and presentations, teachers were afforded the opportunity to explore the local ecosystems of Cape Romain National Wildlife Refuge and the Francis Marion National Forest on field trips where they learned to identify the invasive species that are threatening and impacting these ecosystems.

At the end of the week, each teacher presented lesson plans (designed to fulfill South Carolina's Educational Standards) that incorporated the information they had learned throughout the week. Judging by the amount of enthusiasm each teacher expressed in their presentations, many students will be receiving exceptional instruction on preserving and protecting our natural resources from the threats posed by invasive species. An evaluation date is scheduled for the Fall where teachers will return to the Sewee Center and report on progress with their students.

### ***Catawba-Wateree Hydropower License—UPDATE***

Many of the license terms for dams in South Carolina have already or are about to expire and are in the process of applying to the Federal Energy Regulatory Commission (FERC) for new licenses. Under the Federal Power Act, FERC is the governmental agency responsible for licensing non-federal hydropower projects. Hydropower projects are generally licensed for 30 to 50 years and with the Federal Power Act, the Service has special authorities that enable us to recommend mitigative measures for the continuing adverse impacts of hydropower projects. Some of

those mitigative measures call for the placement of fishways at dams. Fishways are facilities that can be built at dams to safely pass fish upstream of the dam. Staff from Charleston and Asheville Field Offices have recently co-written a prescription for fishways at the Catawba-Wateree Hydroelectric project, owned and operated by Duke Power. The Catawba-Wateree project spans over 220 miles, with 11 reservoirs in North Carolina and South Carolina. Both Ecological Services Field Offices have coordinated closely on the prescription with Department of Interior Solicitors. The

fishway prescription will implement key measures identified in the *Santee-Cooper Basin Diadromous Fish Passage Restoration Plan (2001)*, providing access to significant spawning and maturation habitat for American shad, Blueback herring, and American eels. The prescription is a required measure to address diadromous fish protection, restoration, and enhancement in the Santee River Basin. To view and download a copy of the prescription, go to: <http://www.fws.gov/charleston/docs/ferc.html>

### *What Does Ecological Services Do?*

#### **Endangered and Threatened Species Listing/Recovery/Delisting**

The Ecological Services Division of the U.S. Fish & Wildlife Service is responsible for administering significant parts of the Endangered Species Act. We have programs that work to conserve rare species before they need legal protection, and we determine whether to add a species to the *Federal List of Endangered and Threatened Wildlife and Plants*.

Once a plant or animal is listed as threatened or endangered, we work to coordinate efforts to recover that species. These efforts include providing funding to state agencies to protect these species and working with other government agencies, private companies and individuals to help them protect these plants and animals on their land.

Ultimately, the goal of the Endangered Species Act is to recover species to the point where they no longer need Federal protection and Ecological Services determines which plants and animals have recovered to the point they can be delisted.

#### **Project Review**

There are a number of Federal laws that instruct the U.S. Fish & Wildlife Service, as the nations' wildlife agency, to review various projects that are funded and/or authorized by the Federal government.

The Service's role is typically to identify impacts to fish, wildlife, and plants and their habitats from these projects and work to minimize or eliminate those impacts. The laws under which the Service review projects include: The Endangered Species Act, Fish and Wildlife Coordination Act, Clean Water Act, Federal Power Act, the Migratory Bird Treaty Act, and the National Environmental Policy Act.

#### **Partners for Fish and Wildlife**

The Partners for Fish and Wildlife Program provides funding and technical assistance to private landowners to help them restore, improve, and protect fish and wildlife habitat while leaving the land in private ownership.

#### **Environmental Contaminants**

This program involves working with partners to prevent environmental contamination and to maintain the health of ecosystem; identifying contamination that adversely affects the health of fish, wildlife, and their ecosystems; serving as the Federal trustee for fish and wildlife injured by contamination; and negotiating settlements from polluters to restore lost resources and their benefits to local citizens.

#### **Coastal Program**

This program focuses on restoring ecosystem health to bays, estuaries, and watersheds along the coastlines of the United

States. Working with partners, the Coastal Program provides funding and technical assistance for projects to restore wetlands, control invasive species, acquire rare or exceptionally important habitats, remove dams to allow fish passage to spawning areas, and provide community outreach regarding coastal fish and wildlife resources.

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*The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. We are both a leader and trusted partner in fish and wildlife conservation, known for our scientific excellence, stewardship of lands and natural resources, dedicated professionals and commitment to public service. For more information on our work and the people who make it happen, visit [www.fws.gov](http://www.fws.gov).*



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