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U.S. Fish & Wildlife Service

Fish & Wildlife News

April/May/June 2001

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Proposal Would Reintroduce Migratory Whooping Cranes to Eastern United States

The world's most endangered crane would take to the skies over the eastern United States under a Service proposal to reintroduce a wild population of whooping cranes that would migrate annually between Wisconsin and Florida.

Working in partnership with a variety of state wildlife agencies, conservation groups and other private organizations, the Service will use ultralight aircraft to teach young whoopers the migration route this fall.

The reintroduction is being proposed as part of an ongoing recovery effort for the highly imperiled species, which was on the verge of extinction in the 1940s and even today numbers only about 250 birds in the wild. The Service published a proposed rule in the March 9 *Federal Register* and announced the availability of a draft environmental assessment evaluating three alternatives for establishing a new migratory population of whooping cranes. The reintroduction project has been approved by each state partner.

"The proposed reintroduction is a perfect example of how the federal government can work in partnership with the private sector, states and local landowners to recover endangered species," said Interior Secretary Gale Norton. "The Service's collaborative approach has brought people together and built a high level of trust and cooperation in this effort."

The continent's only migratory population of whooping cranes winters at Aransas National Wildlife Refuge on the Texas Gulf Coast and is vulnerable to a catastrophic event such as a major hurricane. This reintroduction would not only restore the whooper to part of its historic range but also provide a geographically distinct migratory population.

A second non-migratory flock lives year round in central Florida, as part of a separate and ongoing reintroduction effort.

Do a little dance. *Yearling whooping cranes pose at Patuxent Wildlife Research Center. FWS photo.*

To evaluate the potential for using an ultralight aircraft to lead cranes for the reintroduction, biologists successfully reared 11 sandhill cranes and led them on the 1,250-mile migration between Wisconsin and Florida last November.

If the Service and its state partners approve the proposed rule and draft environmental assessment, an experimental flock of young whooping cranes could be reared and trained using methods developed and refined during the sandhill migration experiment. The birds would fly from Necedah NWR in Wisconsin to Chassahowitzka NWR in central Florida, following the route of the sandhill crane migration. The International Whooping Crane Recovery Team, which includes a wide range of government and private organizations including the Fish and Wildlife Service and the Canadian Wildlife Service, voted in January to recommend that ultralight aircraft be used to train and lead an experimental flock of young whoopers.

The Service's preferred alternative designates the reintroduced population of whooping cranes as a nonessential experimental population under the Endangered Species Act. This designation would provide certainty that the project will not adversely affect ongoing human activities, such as outdoor recreation, agriculture and other land management practices.

The designation would also mean that federal, state, tribal or private actions that could result in the death of or injury to a whooping crane in the course of otherwise lawful activities would not be affected by the proposed reintroduction. The intentional killing or harm of any nonessential experimental designated whooping crane would still be a violation of federal law punishable under the Endangered Species Act and the Migratory Bird Treaty Act.

Public hearings were held on the proposal in four different locations along the proposed migration corridor, including Wisconsin, Indiana, Tennessee and Florida.

The whooping crane, named for its loud and penetrating mating call, is one of America's best known and rarest endangered species. This wetland-dwelling species lives and breeds in extensive wetlands, where it feeds upon crabs, clams, frogs, and other aquatic organisms. Whooping cranes stand 5 feet tall and are pure white in color with black wing tips and a red crown.

Never very numerous, whooping cranes were thought to number historically between 700 and 1,400 in North America, before unregulated hunting and habitat destruction caused the population to plummet to a low of about 21 birds in 1941.

Joan Guilfoyle, External Affairs, Minneapolis, Minnesota

Chuck Underwood, Ecological Services, Jacksonville, Florida

Chris Tollefson, Public Affairs, Washington, D.C.

On the cover:
Learning to fly. *Sandhill cranes learning migration routes by following an ultralight. They are paving the way for a possible reintroduction of migratory whooping cranes in the United States. Operation Migration photo.*

OMB Orders Federal Workforce Study

The Service and all other federal agencies with more than 100 employees are participating in a workforce analysis as part of the President's initiative to streamline organizations and make government more citizen-centered. The analysis was directed by the Office of Management and Budget in a May 8 bulletin to agency heads.

The analysis is being conducted in two parts. The first is a report due to OMB in late June, which will provide basic workforce information such as skills, training needs, retirement eligibility and supervisor-to-staff ratios. The second phase is a "restructuring plan" based on the workforce analysis, designed to place as many positions as appropriate into direct interaction with citizens and improve government efficiency by reducing management layers and the time it takes to make decisions.

The restructuring plans are to be included in agency FY 2003 budget submissions and annual performance plans. The analysis will take into account actions already taken by agencies to implement other management reform initiatives.

Denise Sheehan, assistant director for Budget, Planning and Human Resources, is the Service's representative to a team that is compiling the Interior Department's report. In the Service, a Workforce Analysis Team also has been formed to pull together the Service's report. The Service's team includes the deputies group (deputy regional directors and deputy assistant directors) and representatives from the National Conservation Training Center, Personnel, Budget, Diversity and Civil Rights, the Government Performance and Results Act office, External Affairs, and the California-Nevada Operations Office. Rowan Gould, deputy regional director in Region 1, is chairing the Service's team.

The Fish and Wildlife Service was significantly affected by earlier restructuring efforts and has already made a great deal of progress toward fulfilling the President's goals for improved government efficiency. Among Interior bureaus, according to Sheehan, Service employees are the youngest, have the least years of service, and anticipate the least retirement by 2005.

Because the Service is heavily field-based, many employees are already in direct contact with the public. In addition, through NCTC, the Service has already analyzed the skills its workforce needs and is actively providing training to provide employees with new or improved skills.

National Fishing and Boating Week Celebrates Family

Imagine the inquisitive, animated faces of a boy and girl as their mother shows them how to bait a hook. Imagine a father wrapping his arms around his excited child as they steer their boat across a lake. Now imagine scenes like these, multiplied by the thousands, happening all across America as families boat and fish together during one special week.

National Fishing and Boating Week, June 1–10, not only recognized two of America's favorite activities, but also celebrated families and encouraged appreciation of the nation's precious resources.

The Recreational Boating and Fishing Foundation organized National Fishing and Boating Week 2001 as part of its mission to promote participation in boating, fishing and aquatic resource stewardship.

In 1998, fishing license sales were declining and boat sales were stagnant. Then Congress passed the Sportfishing and Boating Safety Act requiring the Interior Secretary to implement a five-year national outreach and communication plan encouraging participation in sportfishing and recreational boating to ensure public support for aquatic resource conservation.

The act requires that the outreach and communication plan:

- improve communication with anglers, boaters and the public regarding fishing and boating opportunities;
- reduce barriers to participation in these activities;
- advance adoption of sound fishing and boating practices;
- promote conservation and responsible use of the nation's aquatic resources; and
- further safety in fishing and boating.

The act also amended the Sport Fish Restoration Act by dedicating $36 million to implement the plan. This money was derived from raising the amount of federal gas tax

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National Fishing and Boating Week Celebrates Family (continued)

credited to the Aquatic Resources Trust Fund. It also established a permanent appropriation for the Boating Safety Account. The act did not decrease states' funding for aquatic resource restoration and protection programs. Instead, it increased their current funding levels and added even more funds for boat safety programs.

With the assistance of key stakeholders from the fishing, boating and conservation communities, state and federal natural resource agencies, the tourism industry and from many other interested organizations, the Sport Fishing and Boating Partnership Council developed the "Strategic Plan for National Outreach and Communication." This plan was approved by the Interior Secretary in February 1999.

Soon after, the Recreational Boating and Fishing Foundation was created to assist the Service in implementing the strategic plan through a cooperative agreement.

In keeping with the intent of Congress, the foundation has embarked on a number of projects, including National Fishing and Boating Week, all aimed directly at increasing participation in angling and boating.

With the guidance of the National Fishing and Boating Week Steering Committee—composed of state and federal agencies, boating and fishing industry representatives and conservation groups—organizers anticipated a significantly expanded program.

To encourage stakeholders to host their own local boating and fishing events this year, the Recreational Boating and Fishing Foundation produced National Fishing and Boating Week event planning kits containing suggested activities, tips on how to obtain sponsorships, customizable promotional materials such as posters and flyers, public service announcements, a guide to working with local news media and more. The foundation mailed a number of the kits directly to Service field stations identified by a cross-program group of Service employees.

"We're very excited to be organizing this brand-new effort with such a wide range of partners, who are all working tirelessly to raise awareness of fishing, boating and aquatic resource stewardship," said Bruce Matthews, president of the Recreational Boating and Fishing Foundation. "We developed the event planning kits to give our stakeholders the tools they need to contribute to that goal by hosting a successful National Fishing and Boating Week event in their communities."

Recreational boating and fishing are among the nation's favorite pastimes. More than 50 million Americans enjoy both activities and the aquatic resources that support them. Both also support major industries that generate jobs and are significant sources of state and local revenue, as well as excise and motorboat and fuel taxes that support the Sport Fish Restoration Program.

Kirk Gillis, Recreational Boating and Fishing Foundation, Alexandria, Virginia

(Editor's note: For comprehensive coverage on National Fishing and Boating Week, read the next issue of Fish & Wildlife News.*)*

One of several public service announcements created for National Fishing and Boating Week.

Calling All Photographers: Calendar Will Help Mark Refuge System Centennial

The beginning of it all. *Tiny Pelican Island was the first national wildlife refuge, established in 1903. Now photographers have hundreds of refuges to choose from to capture beautiful habitat and wild creatures on film. FWS photo: Rob Shallenberger.*

For the National Wildlife Refuge System the year 2003 marks not only the end of the first century of this unique network of lands and waters, but the beginning of a new century full of potential. A special edition National Wildlife Refuge System calendar is just one of the many ways the Service will mark the Centennial. The calendar will be devoted to sharing with the American public glimpses of the beauty and diversity of refuges and the wildlife and people who enjoy them.

In cooperation with the North American Nature Photography Association, the Service is sponsoring a call for photographs to gather potential images for the calendar. The call is open to all—amateur and professional photographers—and photos must have been taken on a national wildlife refuge. Photographers whose images are used in the calendar will receive a small monetary award.

Service and Interior Department employees may submit entries, but they may not be photos taken in their official capacity, using government time or equipment. They also may not submit photos taken in areas that are off-limits to the general public.

Photographs will be collected by Karen Hollingsworth, owner of Three Black Ducks photography who, with her late husband John, photographed hundreds of national wildlife refuges.

Guidelines for anyone submitting photos are:

■ Submissions must be postmarked no later than October 1, 2001.

■ The image must have been taken at a national wildlife refuge or a wetland management district. Check the refuge system Website at <http://refuges.fws.gov> for a list of refuges and wetland management districts, or obtain a refuge system visitor's guide by calling 1-800 344-WILD.

■ The image must fit one or more of the following categories:

Wildlife/plantlife: mammals, birds, fish, insects, reptiles, closeup of a wildflower, trees, etc.

Habitat: a wide shot with or without wildlife

People: volunteering, hunting, fishing, birdwatching

■ Do not submit original transparencies. Images accepted in the following formats only:

High quality duplicate color transparencies (35mm or 70mm)

Digital images on CD-ROMs or Zip disks at no more than 72dpi to enable quick viewing on a computer

■ Do not submit via email.

■ Do not send color prints or negatives.

■ Limit photo submissions to 20 images or fewer. Carefully package all submissions; place transparencies in individual sleeves and put all in a pocketed, plastic sheet sandwiched between cardboard stiffeners.

■ Copyright and name must be on each slide and/or digital image.

■ Each image must have an individual number or letter that corresponds to a separate itemized list indicating images by number or letter with a description including:

Name & location of national wildlife refuge

Month image was taken

Description of subject/behavior

■ Include return packaging and postage or completed shipping form and envelope from preferred carrier. If not included, images will not be returned. Three Black Ducks disclaims any liability regarding materials lost, damaged, or destroyed in the U.S. mail, overnight delivery company or by any other means of delivery.

Three Black Ducks does not automatically accept or agree to terms printed on delivery memos and related correspondences. Due to the special "one-time" nature of this project and the corresponding high cost of insurance, the coverage obtained will cover a maximum of $100 per duplicate image lost or damaged. If any original image is sent the maximum coverage is limited to only $100. Therefore only duplicates are being requested for consideration. By submitting images for this project the photographer is accepting this limitation.

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Calling All Photographers (continued)

Send submissions to:
Karen R. Hollingsworth
Three Black Ducks
P.O. Box 341
Pembroke, ME 04666

For FedEx, UPS use:
Ox Cove Road, Box 26100
Pembroke, ME 04666

Address questions to:
<karen@threeblackducks.com>
207/726 3931

■ Payment for one-time use in calendar:

$150 per large full-page monthly image

$100 per small image

$350 for the cover image

■ No holding fees paid. Payment made as calendar goes to print in the spring of 2002.

Images will be reviewed within a short time of receipt and outtakes returned. A final selection will be made in late 2001 and further outtakes returned. Original transparencies of the selected images will then be requested for printing.

Debbie McCrensky, National Wildlife Refuge System, Arlington, Virginia

Landmark Fine Assessed in Caviar Trade, Fraud Case

A Service wildlife inspector's sharp eyes noted something irregular about the labels on caviar shipments coming into Baltimore-Washington International Airport. The result: a $10.4 million fine against U.S. Caviar & Caviar, Ltd., the most ever in a wildlife trafficking case.

U.S. Caviar & Caviar, Ltd. is a major American supplier of that high-priced culinary delicacy. The company's former owner and president was sentenced to serve 41 months in prison in federal court in Greenbelt, Maryland, in February in connection with a Service investigation of illegal caviar trade.

Last July, U.S. Caviar pleaded guilty to 22 federal charges and the former owner, Hossein Lolavar, to 12, including multiple felony counts of conspiracy, smuggling, making false statements, submitting false wildlife records, and mail fraud, as well as violations of the Endangered Species Act and the Lacey Act—a federal wildlife protection law that prohibits the false labeling of fish and wildlife imported, exported or transported in interstate and foreign commerce.

Also sentenced were U.S. Caviar's sales manager, who ran a caviar label-making business at the company's Rockville, Maryland, headquarters, and the president of a caviar export firm operating out of the United Arab Emirates.

They will serve prison time for their participation in a five-year smuggling operation that involved caviar with a retail value of more than $7.5 million, one of the largest value wildlife trafficking schemes ever uncovered by the Service.

"Three years ago, nations around the world took steps to protect sturgeon and paddlefish because overharvest for the caviar trade was depleting fish populations," said Acting Service Director Marshall Jones. "This case shows that some segments of the caviar industry not only ignored those protections, but deliberately defrauded the public in the process."

U.S. Caviar admitted importing tons of black market caviar from the United Arab Emirates using forged Russian caviar labels. The labels made it look as if the roe had been produced and exported by a large, legitimate Russian caviar supplier. However, it had actually been smuggled out of Russia or other countries bordering the Caspian Sea.

At least 5,000 forged labels were produced at U.S. Caviar's Rockville headquarters and sent to the United Arab Emirates for use on shipments destined for the United States.

The company and its co-defendants forged wildlife documents, including Russian health certificates, to further authenticate their shipments. The shipments were also accompanied by false permits, customs documents, invoices and packing lists. In 1998 alone, U.S. Caviar imported some 9 tons of caviar from the United Arab Emirates with false labels and documents.

U.S. Caviar smuggled real beluga caviar—a Caspian Sea variety that ranks as the world's most expensive—into the United States by labeling the tins as less valuable caviar, filing false declarations, and using false invoices understating the value of the caviar to avoid paying the higher customs duty required. The company also operated a domestic mail fraud scheme that sold eggs from domestic paddlefish and shovelnose sturgeon (commonly called hackleback) to U.S. customers as authentic Russian sevruga caviar, also a highly prized Caspian Sea roe.

DNA tests conducted by the Service's National Fish and Wildlife Forensics Laboratory in Ashland, Oregon, showed that the purported "Russian" caviar sold by the Maryland company did not contain eggs from Caspian Sea sturgeon species as claimed but instead originated from paddlefish and hackleback fish, native only to North America.

Sandy Cleva, Division of Law Enforcement, Arlington, Virginia

Patricia Fisher, Public Affairs, Washington, D.C.

Re-Carpeting Galveston Bay

Gliding through thick fog on an early morning in February, a small pontoon boat drifts over the shallow waters of the Galveston Island State Park, along the Texas Gulf Coast. In spite of the challenges posed by the dense fog, the passengers—biologists from state and federal conservation agencies—are looking for signs of seagrass beneath the water's surface.

To illustrate how dramatically the island has been sinking over the last century, Fish and Wildlife Service biologist John Huffman steers the craft alongside a 16-foot wide wheel-shaped concrete structure that is entirely submerged beneath the water.

"This was once a watering tank for cattle that used to graze here," Huffman explains.

Subsidence—the natural sinking of land—and erosion have been steadily eating away at Galveston Island. In recent decades, accelerated erosion and subsidence have been causing significant habitat loss that threatens the entire Galveston Bay ecosystem. Productive coastal wetlands and marshes continue to slip away to the detriment of fish and wildlife and the largely fishing-dependent local economy.

Seagrass is one vital element of the ecosystem—a carpet that protects the bay floor—that has disappeared without anyone noticing.

Without healthy seagrass beds, the odds for wildlife survival in the bay are dangerously stacked in favor of the forces of erosion and subsidence. The fragile underwater vegetation is fundamental in holding the soil together with its roots, and locking in nutrient-rich sediment with a canopy that inhibits the resuspension of fine particles.

Seagrass beds also provide a nursery ground for shrimp, fish and crabs, as well as food for microscopic organisms at the base of a complex food web. Green turtles, manatees, and migratory waterfowl such as redhead ducks rely on seagrasses as regular components of their diet. And, with tidal marshes, seagrasses help remove pollutants and buffer nutrient levels in bay and coastal waters. That's why seagrass restoration is of such concern to the crew of biologists in the pontoon.

Happy to see signs of a healthy bay. *Service biologist Marty Underwood of the Clear Lake, Texas, Ecological Services field office holds a sample of a seagrass from Galveston Bay. FWS photo: Ben Ikenson.*

"Submerged aquatic vegetation beds have all but vanished from the Galveston Bay ecosystem," said Huffman. "In the 1950s, estimates of their aerial coverage range from 2,500 to 5,000 acres. In contrast, 1993 studies reveal they were down to less than 700 acres."

Biologists knew something had to be done before it was too late, so they began to investigate the possibility of replanting seagrasses. Where to plant the grasses became a key issue facing the project biologists, who took their cue from the appearance of wigeongrass.

"Selecting appropriate sites for replanting is critical for successful seagrass reestablishment," said Bryan Pridgeon, a Service biologist who helped initiate reestablishment efforts in Galveston in 1995. "Around 1994 and 1995, wigeongrass began to show up in West Bay, a segment of Galveston Bay that historically supported seagrasses."

Rather than studying numerous sites in the bay for suitable aquatic growing conditions, Service biologists decided to follow nature's course and plant perennial seagrasses adjacent to the wigeongrass, which is often ephemeral.

However, biologists still needed a source of planting material, so Pridgeon went to the Central Power and Light Plant in Corpus Christi to see if he could use the plants in the company's cooling pond to replant Galveston Bay.

"While I was looking at their pond, it dawned on me that the pond was created in an upland site, and all of the seagrass growing in it had been delivered through their cooling water canal," Pridgeon said. "If that material could vegetate an upland site, why couldn't it vegetate a bay?"

In the power plant's cooling pond, large amounts of seagrass species drift in the water column and collect on screens protecting a massive water intake structure. Normally, the screens are cleaned regularly by mechanical rakes that eventually deposit the material—mostly dead leaf litter—into trucks bound for the local landfill. In October 1996, thanks to Pridgeon and a multi-agency coalition of biologists, the first truckload of material was brought to Galveston Bay, instead of the landfill.

To protect and monitor this initial stock of recycled grasses, biologists built two enclosures in the waters of the state park, near an area where wigeongrass had previously flourished. Initial monitoring after placement of the material yielded minimal growth. But in 1998, monitoring teams discovered several small patches of star grass, and by December 2000, more than 40 acres of star grass and shoalgrass—two of the species collected in the power plant racks—were flourishing.

Through an agreement with Galveston Bay Foundation, the Service plans this summer to collect more seagrass material from the

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Recarpeting (continued)

power plant. This cooperative recycling may eventually prove to be the most inexpensive and simple method to restore Galveston Island's seagrass beds.

In fact, the expansion of these initial seagrass beds has spawned increased restoration efforts throughout West Galveston Bay. With support from the Fish and Wildlife Service's Texas Coastal Program, the National Marine Fisheries Service is testing several planting techniques including the use of seagrass racks, peat pot plugs and mechanical injection methods. Using this last method, in cooperation with the Texas Parks and Wildlife Department, the Coastal Program has planted an additional two acres of seagrass. Coastal biologists are also evaluating proposals to expand a seagrass nursery which will provide new planting stock, as well as proposed genetic research projects.

Along with extensive marsh growth stimulation techniques and erosion prevention strategies, these experiments hold the promise of rebuilding some of the ecosystem's many broken fragments, including the goal of 1,500 acres as set by the Galveston Bay National Estuary Program.

Floating from site to site that fall day, the biologists documented increasing numbers of established seagrass beds. With a collection of aerial photos on hand depicting accelerating rates of recovery, it was obvious the grasses are taking root and spreading. As the fog began to lift, shafts of sunlight fell upon dark patches of grasses undulating delicately beneath the current—small, murky signs of success.

Ben Ikenson, External Affairs, Albuquerque, New Mexico

Science Students Discover the Great Outdoors at Mason Neck NWR

In the field. *Thomas Jefferson High School students survey study plots and take soil samples at Mason Neck NWR as part of a yearlong class project on wetlands. FWS photo: Rachel F. Levin.*

Donning hip waders and armed with surveying equipment, rulers, clipboards and pens, two dozen students from one of the nation's top public high schools descended on Mason Neck National Wildlife Refuge last fall. Led by teachers Dennis McFaden and Barbara Nelson, these Virginia teenagers spent a brilliant October day surveying and marking off study plots and taking samples in vernal pool areas on the refuge.

This unusual ninth grade project was part of an IBET program, or "integrated biology, English and technology," at Thomas Jefferson High School for Science and Technology in Alexandria, Virginia. Biology teacher McFaden, English teacher Nelson and technology teacher Chip Randall have been taking students to Mason Neck, about 20 miles south of Washington, D.C., for a decade, working with refuge staff on a variety of experiments designed to be "simple and doable by high school freshmen, yet authentic," according to McFaden.

Authentic it was as the students, who come from five northern Virginia counties, fanned out in three groups on the refuge last fall to mark off wetlands into quadrants, take soil pH readings and gather topographic data. Although many of the students had never worked in an outdoor environment before, they conducted themselves in a manner quite similar to real biologists. After getting organized, the teachers turned their students loose in the woods where teams immediately began measuring off small areas with rope and taking soil readings.

They returned in March to wade across the now-filled pools, count and evaluate spotted salamander egg masses, and inventory vegetation and invertebrate species, as well as test water quality.

Students said regardless of their interest in science, they found their work at Mason Neck rewarding. "This is a lot different than I thought it would be," one student observed. "It's really fun."

Mason Neck's partnership with Thomas Jefferson dates back 10 years. In one of the first partnership projects, students set up sample plots and periodically collected deer pellets from the plots to help evaluate the size of the refuge deer herd. McFaden said the project gave them "lots of data to manipulate," although the field work was not, it seems, a favorite with all the students.

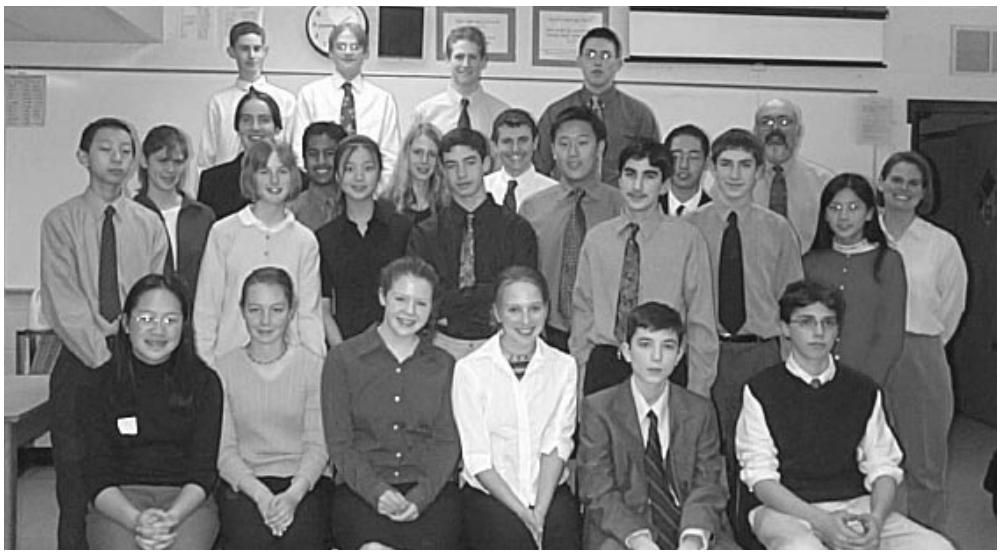
"The Fish and Wildlife Service has been a great partner for us," McFaden said. "If there is anything we can do to help the Service with outreach about this kind of educational program, we'd love to do it."

McFaden and Nelson have been assisted in their field work by Mason Neck refuge biologist Joe Witt. McFaden hopes perhaps one day his students' work might be beneficial to refuge staff. Witt recognizes the value of the students' research and of McFaden's initiative.

"What he's doing is important," Witt said. "And the refuge has helped out some—we bought a little equipment and supplied them with walkie-talkies."

(While in the field McFaden and Nelson keep in touch regularly with two-way radios. They even have handles; she is Athena, he Bald Eagle.)

Witt has also helped McFaden by building wetlands on the refuge so that the students can compare activity in those wetlands to that in other wetlands. The project has provided years of data on salamander reproduction, water quality, and other indicators of the area's ecological health. Students are able to compare their results with results from previous years.



Future Service Employees? *Teacher Dennis McFaden (right, 3rd row) has imparted his enthusiasm for field biology to these Thomas Jefferson High School ninth graders. FWS photo: Megan Durham.*

As part of the IBET program students also learn to read, write and speak "technically," McFaden said, as well as how to find information using databases, how to interview people and how to present scientific material. They put all of those skills to test on April 4, as they presented the results of their project at a "symposium" for parents and other students.

Using a PowerPoint presentation, the class described the project and the procedures they had followed in the field and the laboratory. They also compared their findings with results from related studies reported in peer-reviewed scientific journals.

The students reported their findings on the distribution and number of macroinvertebrate species in three pools; pH levels and presence of road salt, heavy metals, and pesticides; and numbers and distribution of salamander egg masses in the three pools. They found greater concentrations of road salt, copper, and pesticides in the roadside pools than in the woodland pool, but macroinvertebrate studies indicated all three pools were still ecologically healthy. pH levels in all three pools were about the same and were close to optimum (rainwater) levels.

They were unable to determine, with the data they had collected, whether spotted salamanders return to the same pools to lay eggs each year. The students recommended that future classes study the presence of deformities in amphibians from the pools to determine if the eggs develop normally into healthy salamanders.

With the assistance of Service staff at the National Conservation Training Center and elsewhere, McFaden and Nelson have now launched a project for their seniors studying the environmental impacts of mountaintop removal mining in West Virginia. The 12th graders are collecting GIS and other data; they plan on writing an environmental impact statement as their class project.

But maybe it's the Service which owes the biggest debt of gratitude to McFaden and Nelson....for creating the possibility that some of today's Thomas Jefferson students might become tomorrow's Fish and Wildlife employees. At the very least, they will be tomorrow's decision-makers.

"Every one of these kids will be making decisions about how our resources are used," McFaden said. "And they'll remember back to this time working at Mason Neck refuge."

Rachel F. Levin, USFWS Public Affairs, Washington, D.C.

Employees Invited to the Rachel Carson Symposium August 10–12

Visionary. *Rachel Carson with Interior Secretary Udall at a 1962 White House conference. FWS photo: Rex Gary Schmidt.*

To celebrate the accomplishments of former Fish and Wildlife Service employee and pioneering conservationist Rachel Carson, the National Training and Conservation Center will host a symposium August 10–12 on "Rachel Carson and the Conservation Movement: Past, Present and Future." The symposium will blend history, science and the arts and feature plays, artworks, readings and hands-on sessions in the labs and around the campus, as well as plenary talks by distinguished conservationists and Service personnel.

A tentative speaker list includes Barry Lopez, Theo Colborn, Sylvia Earle, Chandler Robbins, David Pimental, Mary Henry, Jim Kurth, Ward Feurt and Diana Post.

Because the symposium is considered a training class, registration and accommodations are free of charge to Service personnel. Other professionals and the public are also encouraged to attend. To learn more about the symposium and to register, visit the Rachel Carson Web site at: <http://www.nctc.fws.gov/history/carson2001.html.>

For additional information contact Service historian Mark Madison at 304/876 7276 or <mark_madison@fws.gov>.

Special Section: Focus on Native Americans

(Pages 10–21)

From Dependence to Partnership: Native Americans and the Service

Restoration. *Native American partners work with the Fish and Wildlife Service at Finger Island, in Arizona, removing debris that has altered a stream's natural channels. FWS photo.*

Native American governments in the United States co-manage some of the nation's most important fish and wildlife, and the protection of these tribal trust resources remains a critical element of Fish and Wildlife Service policy.

"Our tribal trust responsibility is a solemn obligation," said Acting Director Marshall Jones. "It is not open to interpretation. There was a time in our history when this kind of protection was far less than it should have been, and there have been times when protection really meant dependence. Those days are gone. The Service and Native Americans are partners today. It's a relationship I point to with pride."

The Indian Self-Determination Act, Presidential executive orders and 50 years of formal agreements attest to the Service's established role in tribal fisheries, where the development of recreational and subsistence fisheries is an important cultural and economic mainstay.

For every dollar spent on fishing permits on the reservation, it is estimated that visitors add an additional $2 to $4 to the reservation and local economies, according to Joe Jojola, chief biologist for the White Mountain Apache Game and Fish Department in Arizona.

Service trust responsibilities, however, have a far greater sweep than helping to manage and restore fish—the agency helps manage more than 55 million acres of land, 1.5 million acres of lakes and 13,000 miles of rivers and streams on more than 300 Indian reservations in 32 states.

The Service's office of Native American Liaison was established by the late Director Mollie Beattie in 1995, as part of her effort to implement the agency's Native American policy, which she signed in 1994. Negotiations were underway at the time regarding the Tribal Self-Governance Act of 1994 and much of the liaison's effort was focused on that project.

To ensure that Indian issues received the attention they deserved, the regional External Affairs offices each created an "Indian Desk." Those offices in turn report to their assistant regional director for External Affairs and coordinate with Washington on broad policy issues as well as those requiring solicitor review. That relationship continues and has succeeded in bringing uniform implementation of the Native American policy.

The agency provides technical assistance and limited funding to help manage wildlife; co-manages polar bears, walruses and sea otters with Alaska Natives; provides technical and financial support for natural resources damage assessment and restoration cases; provides information about contaminants—and much more.

The Service operates 70 national fish hatcheries, and about half provide stock to tribal fisheries. The agency also operates about 64 fish and wildlife management assistance offices in 35 states, about a third of them providing technical assistance in the form of conservation plan development and implementation, including habitat management, genetics for fish stock, habitat restoration and hatchery stocking evaluations.

Ken Burton, Public Affairs, Washington, D.C.

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Got a question about an article you read in this special section—or about any Native American issue? Contact your regional Native American Affairs Liaison:

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Southeast Region Moves Forward with Tribal Partnerships

Recent months have been busy for Native American activities in the Southeast region. Fiscal year 2000 was the first year the region had a Native American Liaison—resulting in increased awareness of the Service's responsibilities to federally recognized tribes and more opportunities for working cooperatively with them.

Regional Native American Affairs Liaison James D. Brown made numerous new connections with Native American tribes and continued long-standing activities. Brown expects cooperative activities and partnerships with tribes will become a regular part of doing business in the region.

Region 4's fisheries program has developed an ongoing partnership with the Eastern Band of Cherokee Indians in western North Carolina. Chattahoochee Forest, Dale Hollow, Erwin and Wolf Creek national fish hatcheries annually provide trout eggs, fingerlings, and culled brood fish to the Cherokee Tribal Hatchery to support the recreational trout fishery on the Cherokee Reservation. Similarly, the Warm Springs Regional Fisheries Center conducts an annual fish health inspection at the tribal hatchery and is available for emergency fish health support.

Fisheries developed a revised design and cost estimate (with the assistance of the Division of Engineering) for the water intake at the Cherokee tribal hatchery, as well as a cooperative proposal for native brook trout restoration in suitable reservation waters. The Southeast region is working with the tribe to secure funding for both proposals.

Most recently, Fisheries has developed a proposed fish production and distribution program for the Cherokee tribal hatchery. Under this proposal, regional Fisheries personnel will work directly with the tribal hatchery to analyze its production capabilities and develop production and distribution recommendations to meet the reservation's trout management objectives.

The Southeast region promotes the Partners for Fish and Wildlife Program as an area where the Service and tribes can work together on habitat restoration projects. Regional personnel have worked with tribal representatives of the Eastern Band of Cherokee Indians, the Mississippi Band of Choctaw Indians and the Seminole Tribe of Florida to develop Partners project proposals involving stream habitat restoration, restoration of wetlands hydrology, and control of exotic vegetation in wetlands.

Brown has made developing contacts and relationships with the Southeastern tribes and Native American organizations a priority. In recent months, he has visited reservations and met with the Eastern Band of Cherokee Indians, the Catawba Indian Nation and the Mississippi Band of Choctaw Indians. A visit to the Miccosukee Tribe of Indians of Florida is scheduled, with later visits to other tribes planned.

Discussions at these meetings focus on tribal fish and wildlife activities and needs and the Service's capability to assist in meeting those needs. The Southeast region is also active in the Natural Resources Committee of the United South and Eastern Tribes, Inc., and the Native American Fish and Wildlife Society.

James D. Brown, External Affairs, Atlanta, Georgia

Southwest Strategy Links Federal, Tribal Governments

The mystique and enchantment of the Southwest is in no small way a byproduct of the strong presence of Native Americans in the region. More than 40 federally recognized tribes live in Arizona and New Mexico; tribal land in the two states encompasses nearly 30 million acres. Still, as history testifies, a strong presence does not secure fair representation in public policy.

Among other goals, the multi-agency Southwest Strategy aims to promote Native American representation in the federal government. An ambitious enterprise whose objective is to sustain the quality of life in New Mexico and Arizona, the Southwest Strategy brings together departments of Agriculture, Interior, and Defense, as well as the Environmental Protection Agency. Federal agencies work with state, county, local and tribal governments on a range of issues such as developing local economies and conserving cultural and natural resources.

The strategy's tribal/federal workgroup plays a key role in accomplishing these goals by working to ensure equal and fair representation of tribal concerns regarding natural and cultural resources in federal decision-making. The group also aims to decrease time spent on actual and direct tribal consultation policies and rules making.

To achieve these goals, the group has tackled many tasks: sponsoring open house meetings for tribal members and agency representatives; producing a tribal/federal resource directory to enhance communication and access between tribes and the federal government; and providing cultural sensitivity training sessions for federal mid-management and executive staff.

Additionally, the workgroup is planning a tribal/federal gathering in November to coincide with Native American Week. At this gathering, the workgroup will unveil its implementation plan, based on recommendations received at the first two tribal/federal gatherings. The goal of the plan is to enhance the government-to-government working relationship while addressing natural and cultural resource issues of mutual concern.

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Southwest Strategy Links Federal, Tribal Governments

(continued)

The workgroup is also planning a resource tour of tribal lands for Congressional, federal and tribal staff. Organizers hope the tour will showcase tribal/federal partnership efforts on tribal lands and illustrate the importance of establishing meaningful collaboration and communication to resolve resource issues in a mutually acceptable way. One of the stops on this tour will be the Zuni Pueblo eagle aviary in western New Mexico, a shining example of tribal/federal cooperation in the conservation arena. (See sidebar below)

The successes of the Southwest Strategy's tribal/federal workgroup are numerous, and interest in the concept is spreading. After Region 4 Service employee Vicki McCoy attended the 1999 Southwest Strategy Harmony Workshop in Parker, Arizona, she decided to undertake a similar activity in the Southeast region. With the assistance of Region 2 Native American Liaison John Antonio, the first Southeast Harmony Workshop was held August 14-15, 2000, in Mississippi, hosted by the Mississippi Band of the Choctaw Tribe.

For more information on the Southwest Strategy and the tribal/federal workgroup, please visit the strategy's Website at <http://www.swstrategy.org/>.

Ben Ikenson, External Affairs, Albuquerque, New Mexico

Aviary Demonstrates Strategy's Success

The Zuni Pueblo eagle aviary is a classic example of the meaningful collaboration the Southwest Strategy aims to achieve. Under the Bald Eagle Protection Act of 1940—amended in 1962 to include golden eagles—tribes must apply for permits and make official requests from the Service's National Eagle Repository near Denver, Colorado. The facility stores birds specifically for the purpose of distributing carcasses or feathers to tribes. But because there is a high demand for feathers from tribes, it is often difficult to accommodate all the requests. This is how the Zuni Eagle Aviary was hatched.

Four years ago, the tribe initiated discussions with the Service about how to alleviate the waiting period.

"One of the alternatives," said the tribe's Steve Albert, "was to build our own eagle aviary, with the hope that there would be a supply of non-releasable birds to place in it."

After constructing the facility, and receiving permits from the Service to keep eagles, the tribe received two non-releasable mature bald eagles from rehabilitators in New Mexico and Oklahoma.

Other eagles have come from various rehabilitation centers. The aviary currently houses 11 birds, most of which are golden eagles. The tribe is currently discussing the possibility of initiating a captive breeding program, not only to satisfy religious purposes but also to assist in golden eagle restoration efforts in the Southwest.

Ben Ikenson

Law Enforcement Training Gives Native Officers a Leg Up

Last spring, a group of Service special agents and 41 tribal enforcement officers converged on Fort Yates, North Dakota, for the ninth in a series of training sessions that are helping to improve protection for tribal wildlife resources.

The agents spent five days reviewing the fundamentals of wildlife law enforcement with the tribal officers. Sponsored by the Service's Division of Law Enforcement and the Native American Fish and Wildlife Society, the 40-hour course served as basic training for most of the students, many of whom had had little formal instruction to prepare them for their natural resource duties.

These officers and their counterparts across the country protect resources and enforce fish and wildlife laws and tribal game codes on more than 97 million acres of reservation and Alaskan Native lands.

"Law enforcement is a key component for helping tribes manage and protect their resources," said Ron Skates, a former tribal game warden, long-time Native American Fish and Wildlife Society member, and Service project leader in Montana who serves on the society's Board of Directors.

Little training has traditionally been available to tribal game wardens, Skates noted. Although Service agents in some areas offered occasional classes during the 1980s, the need for more comprehensive instruction had become apparent by the close of the decade. The society, which identified wildlife law enforcement training as a priority for improving tribal resource management, first turned to universities and private contractors.

"Those courses didn't really meet the need," Skates said. "Then Commodore Mann, who had just transferred to Montana as the senior resident agent in Billings, came to us and asked, 'How can we help?' His attitude from the start was 'let's sit down and put something together.'"

Mann and a team of special agents mapped out a class that evolved into a comprehensive 40-hour course in wildlife law enforcement. The program, which combines classroom instruction with practical, hands-on exercises, reviews jurisdictional issues and

In training. *Native American wildlife law enforcement officers practice firearms skills during Service training at Fort Yates, North Dakota.FWS photo.*

federal wildlife and environmental laws. Students master the basics of interviewing witnesses, interrogating suspects, conducting searches, analyzing crime scenes and collecting evidence. They also learn how to plan and conduct surveillance operations, road blocks, raids and undercover investigations.

Over the past four years, nearly 400 tribal officers representing more than 120 tribes have completed the week-long certification course, which has been conducted in various states.

"The program has been a real plus for all. We've seen good results for both resource protection and cooperative enforcement," Skates said.

Former Native American Fish and Wildlife Society President Butch Blazer agreed.

"Feedback from the tribes is uniformly positive, and there's been a real improvement in professionalism," he said.

Blazer, a tribal council member, treasurer and natural resource manager for the Mescalero Apache, a tribe whose reservation covers half a million acres in south-central New Mexico, points to the training partnership as a key society accomplishment.

"During my years as president, I was pleased to see conservation officers from my tribe and many others receiving much needed enforcement training," he said. "The program is particularly effective because instructors gear the material to the geographic region. The challenges in the Great Lakes area are not the same issues we have in the Southwest, and the training reflects those differences."

This year, agents in the Rocky Mountain-Great Plains Region of the Service, where the program originated, offered the course in early May in Lander, Wyoming.

The Division of Law Enforcement is also looking at the possibility of developing "in-service" training modules to help tribal officers who have already completed the basic program update and fine-tune their skills.

Sandy Cleva, Division of Law Enforcement, Arlington, Virginia

One Native American's View on "Tribal Trust"

by Wanbli Williams
Special to Fish & Wildlife News

As humans we are inherently related to all that exists in our natural world. Even on the smallest, sub-atomic scale, the elements that bind us have astronomical relations. Among all of these complicated and extensive relationships, one very delicate relationship exists between tribal people and the U.S. Fish and Wildlife Service, which by law has a "trust responsibility" to Native Americans.

The "trust" that exists in this government-to-government relationship has never been written out in any one document but rather consists of a series of laws passed by Congress, and federal administrative practice. There is also a separate body of Indian trust law based on federal court decisions.

I believe that responsible trust, in a government-to-government relationship, cannot be established or defined if the trust is based upon the laws, practices and decisions of only one government. For this reason, there have been many ambiguous definitions offered and clarity is a muddy river that divides and clouds the relationship between tribes and the Service.

Tribal governments have the inherent right to responsibly define the trust in this relationship, and the extensiveness of this definition is unlimited. According to Matthew King, traditional Sundance Leader of the Oglala Lakota, the first "law" of all people is, simply, respect. In the understanding of respect in relationships, one can find definition and responsibly establish trust.

Under the laws of natural democracy, all rights are inherent, subject to change and equally sovereign. These natural democratic laws help define the trust and responsibility that exists in the extensive relationships of the natural world. If a definition can be obtained from the laws of natural democracy, then agreement is the only rule for establishment of change in the responsible trust of a relationship.

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One Native American's View on "Tribal Trust" (continued)

The majestic wolf, once plentiful throughout this continent, was a symbolic representation for Indigenous people's relationships. The noble wolf has once again made relations possible for Indigenous people, by establishing a responsible trust between tribes and the Service. The Wolf Reclamation Project implemented on the Nez Perce reservation in Idaho is an example of the positive effects responsible trust has on relations between tribes and the Service.

Another positive example of responsible trust in relationships between tribes and the Service is the establishment of the Service's Native American Policy in 1994. Traditionally the Service has been viewed by tribes as a lonely ally in the bitter relations between tribal governments and federal government agencies.

Tribal peoples also highly regard the Service's dedication to protecting natural resources. Positive relations have also developed between tribal peoples and the Service pertaining to the inherent right of tribal members to obtain sacred eagle feathers and parts for ceremonial purposes, even though the eagle is protected as a threatened species.

Similar to the vision of a soaring eagle, the definition of the "trust responsibility relationship" that exists between tribes and the Service is seemingly limitless. The definition can be expanded upon in astronomical proportions and strengthened beyond the structures that bind our immense relationships in the natural world.

Cetan Wanbli Williams (Eagle Hawk) is an enrolled member of the Flandreau Santee Sioux Tribe and is also of Oglala Lakota, Northern Cheyenne and Lac du Flambeau Ojibwe descent. He is enrolled in the Tribal Environmental Natural Resource Management Program at Northwest Indian College in Bellingham, Washington.

Acting in Harmony to Conserve Medicinal Plants

The Service's trust responsibility to Native Americans encompasses nearly all agency programs and divisions—including the Division of International Affairs, which is interested in the sustainability of many native plants currently used by the botanical products industry and in heavy demand by consumers in other countries.

These same medicinal plants have long been part of the heritage of Native American tribes who have safeguarded plant knowledge for generations. Tribal voices are critical to conservation discussions concerning native medicinal plants. Recognizing this, the International Affairs program is seeking tribal assistance in establishing the direction of its medicinal plant conservation efforts.

International Affairs uses the best available biological information and trade data to determine whether species warrant listing or a change in listing status under the Convention on International Trade in Endangered Species. Service biologists also help determine whether trade in listed species is sustainable. However, information on the trade and biological status of valuable medicinal plants is often lacking.

To facilitate collection of this information and to address growing concerns for medicinal plant conservation, International Affairs helped establish the Medicinal Plant Working Group under the auspices of the Plant Conservation Alliance, a consortium of ten federal agencies and more than 170 non-federal cooperators working together to conserve plants native to the United States. Just over a year old, the working group includes an ethnobotany committee co-chaired by Joanne Bigcrane, ethnobotanist for the Confederated Salish and Kootenai Tribes, and Trish Flaster of the private group Botanical Liaisons.

The committee's goal is to encourage participation among tribes and other holders of traditional medicinal plant knowledge who care about the future of wild populations of these plants in the United States and who may be able to share information about their status.

The ethnobotany committee has been hard at work establishing an "elder link"of Native American elders who will actively participate in discussions concerning medicinal plant conservation, and ensure that their connection to and conservation of these species is recognized and honored. The committee is creating a similar relationship with tribal elders to help guide the Medicinal Plant Working Group.

Strengthening ties between the working group and tribes through an elder link will enable the group to support tribal conservation of indigenous plants and plant communities used in traditional medicine, as well as involve tribes as partners in overall conservation efforts.

Benefits to the tribes include training in conservation and cultivation techniques to help ensure medicinal plant sustainability on tribal lands, and access to new partners to support tribal sovereignty, projects benefitting medicinal plant conservation and tribal economic development.

The ethnobotany committee also encourages development of medicinal plant centers to conserve plants and ensure their sustainability. Last October, the Service, the U.S. Botanic Garden in Washington, D.C., Strategic Sourcing, the Sacred Seed Project and the University of Maryland at Eastern Shore facilitated the transfer of medicinal and cultivated plants of special value to native peoples from the Botanic Garden to greenhouses on Maryland's Eastern Shore. The plant collection is expected to continue growing through the addition of regional and tribal-specific plant specimens. It will be made available to interested tribes.

"Plant patenting, genetic technology, agricultural development, pharmaceutical research, economic study and development, sustainable harvesting, cultivation and propagation are among plant issues that loom large as threats to the native species that Native American tribes hold dear," said Bigcrane, ethnobotany committee chair. "In each of these areas, the issues are complex and interconnected, but, generally, though Native Americans are more adversely affected than others, they are seldom invited to participate in the discussion. The working group hopes to help make a difference in this area, both for plants and for tribes."

Mary Maruca, International Affairs, Arlington, Virginia

Tribal College Students Help with Study

Future of conservation. *Buzz Cobell of the Bozeman, Montana, Fish and Wildlife Management Office, provided telemetry training to Little Bighorn Tribal College students (left to right) Janelle Little Light, Tara Piper, and Jeri Bends, and Amanda Yankow, a Bureau of Reclamation intern, amongst the Bighorn Mountains of Wyoming. FWS photo.*

When the Service first met with the Crow Tribe Fish and Wildlife Department to discuss gathering baseline biological data on elk migration patterns and habitat use in the Bighorn Mountains, biologists didn't envision an interagency multi-year project—but that's just what they ended up with.

Thanks to Mari Eggers, an instructor at Montana's Little Bighorn Tribal College, and Gerald "Buzz" Cobell, chief of the Branch of Tribal Technical Assistance in the Service's Montana Fish and Wildlife Management Office, the project was not only a success scientifically, but it also embraced the spirit of Executive Order 13021, which ensures tribal colleges and universities in tribal communities have continuing access to federal resources.

This important elk research project accomplished two valuable objectives: gathering important biological information and providing meaningful training and educational opportunities for Little Bighorn Tribal College students and members of the Crow Tribe Fish and Wildlife Department.

As a direct result of the study, scientists are analyzing more than 900 elk relocations and will eventually incorporate them into maps showing elk habitat use, seasonal elk movements, calving sites and other information. With this data, Cobell said, "we plan to initiate future multi-jurisdictional partnerships focusing on elk habitat preservation, enhancement, and protection."

"In addition, several of the participating tribal college students have continued their educational and career pursuits in the natural resources profession," he said.

The study focused on the Garvin Basin, a geographically isolated area with limited seasonal access to tribal hunters. This elk herd's isolation has undoubtedly contributed to its long-term survival, Cobell said, adding that aerial survey data collected by the Service and the state of Wyoming indicate that the herd's size has fluctuated between 800 and 1,400 head.

As its part of the project, the Service oversaw the scientific research and provided much of the training and some financing. Little Bighorn Tribal College, the Crow Tribe, Bureau of Indian Affairs, Bureau of Reclamation, Bighorn National Forest, Wyoming Game and Fish Department, and Rocky Mountain Elk Foundation provided support.

Service, Bureau of Indian Affairs and tribal participants received training and certification to take part in the elk capture operation. Wildlife Veterinary Services and Service wildlife biologists provided training and opportunities for the students to learn big-game monitoring techniques, radio-instrumentation techniques and animal restraint.

Cobell said he considers the project a success for both wildlife and partnerships.

"We saw this as a great opportunity to gain information useful to the Crow Tribe for elk management," he said, "while providing Little Big Horn College students with valuable training in big game management."

Northeast Native American Plan Approved

A first. *D.J. Monette (left), acting Native American liaison for the Service in the Northeast, and Matthew Vanderhoop (right), Native American Fish and Wildlife Society president, look on as Dr. Mamie Parker, the Service's Northeast regional director, signs the Service's first regional Native American Policy Implementation Plan. FWS photo: Ed Henry.*

Northeast Regional Director Mamie A. Parker signed the first regional Native American Policy Implementation Plan in February. Matthew Vanderhoop, president of the Native American Fish and Wildlife Society, represented tribes at the signing at the regional office in Hadley, Massachusetts.

"As a Department of the Interior bureau, the Service is dedicated to fulfilling our trust responsibility to tribes, and this document will help guide us in this commitment," Parker said. "I am very proud of this document because it is the first implementation plan to be approved by a Service regional director."

Parker said the extensive efforts of the Tribal-Service Partnership Work Group were instrumental in developing the plan. She said she is committed to building better relationships with the tribes in the Northeast.

Development of the plan began a year and a half ago when the Northeast region and representatives of the Northeast tribes established the work group to improve communication and identify specific actions to implement the Service's Native American Policy. The work group stepped down the 10 elements of the policy to form the implementation plan.

D.J. Monette, External Affairs, Hadley, Massachusetts

White Mountain Apache Tribe Welcomed as Partner in Wolf Recovery

New partner. *Mexican wolves are welcome on White Mountain Apache lands. FWS photo: Richard Forbes.*

The Service recently welcomed the White Mountain Apache Tribe to its list of partners involved in Mexican wolf recovery. Other partners in the three-year-old effort include the Arizona and New Mexico game and fish departments, the U.S. Department of Agriculture's Wildlife Services division, and the private Turner Endangered Species Fund.

In 1998, the Service reintroduced the first Mexican wolves into Arizona, designating them as experimental and non-essential populations under the Endangered Species Act. Wolves that disperse from the recovery area onto White Mountain Apache lands may remain on those lands under a tribal resolution passed that same year.

Since this resolution was passed, the tribe has worked with the Service and has drafted a multi-year Mexican Wolf Management Plan. In 2000, the Service and the tribe entered into a formal cooperative agreement to provide interim support for the wolf management plan until multi-year funding for the plan is secured. When funds are acquired, the tribe and Service will enter into a long-term cooperative agreement to implement the White Mountain Apache Tribe Wolf Management Plan.

Located adjacent to the western boundary of the current recovery area, the 1.6-million acre Fort Apache Indian Reservation contains excellent Mexican wolf habitat. The White Mountain Apache Tribe Mexican Wolf Management Plan allows up to 30 wolves to establish themselves on reservation lands. Currently, 6 groups of Mexican wolves—representing a total population of approximately 26 wolves—live in the recovery area in Arizona and New Mexico. None currently occupy reservation lands.

To date, wolves have traveled through the reservation. This type of movement is not unusual in new, establishing wolf populations. Wolf biologists expect that as the reintroduced population grows and more wolves disperse, the 30 wolves currently anticipated in the tribe's wolf management plan will become established on the reservation.

Under this initial cooperative agreement, the tribe will hire a wolf biologist who will train with the Mexican Wolf Interagency Field Team. Until wolves disperse onto tribal lands, this biologist will assist the Service's recovery efforts on and off the reservation.

Brian T. Kelly, Division of Endangered Species, Albuquerque, New Mexico

Cynthia Westfall, White Mountain Apache Tribe, White River, Arizona

Condor Feather Repository Gives Tribes a Reason to Celebrate

In 1987, biologists captured the last free-flying California condor. For Native Americans this brought to a close the era in which the majestic condor ruled their skies and captured their imaginations. The significance of this loss could only be measured in the number of prayers that someday condor would return.

As a result of the success of the Service's captive-breeding program, the condor population had nearly doubled by 1991. In January 1992, after a blessing by Indian elders, two newly hatched condors became the first of their species to be released back into the wilds of southern California. The Service has released a number of condors since then, and Native Americans celebrated as condors once again graced their ancestral skies.

Shortly after the first release, the Service established the California Condor Feather Repository, modeled after the Eagle Repository, and for the first time condor feathers were available to Native Americans for religious and ceremonial purposes. Molted feathers are collected from condor captive-breeding facilities, stored at a Service repository and distributed by permit.

The value of the Condor Feather Repository was emphasized when feathers obtained from the repository were used by a Chumash elder to make a ceremonial cape and skirt. A tribe member dressed in this ceremonial regalia to perform the Condor Dance in honor of newly released condors. It was the first time the Condor Dance had been performed in more than 100 years.

In California there has always existed a special relationship between Indian people and the condor. These Indians revered the largest bird in their natural world and it played an integral role in their lives and culture—as an ancestral chief, shaman, healer, sorcerer and messenger.

Majestic symbol. *Condor feathers are distributed by permit to Indian people for religious and ceremonial purposes. FWS image: George Anorejko.*

The condor's importance to Indian people has been chronicled in oral legends, ceremonies, dances and rock paintings. The sixty major tribes in California have more than 65 known names for condor, including Moloko, Almiyi, Hol-Hol and Wit. The Tolowa of the northern California coast call Condor "Te-long-yi-chah," which means "whale lifter." The first recorded condor sighting by a European was made by a Jesuit priest in 1602 when he saw a condor feeding on a whale carcass with some grizzly bears.

By the early 1980s wanton shooting, poisoning and loss of habitat had reduced the wild condor population to 21 birds. Despite efforts to protect the condor this precipitous decline continued until biologists made the difficult decision to capture and place the remaining wild condors into the captive-breeding program to save the condor from extinction.

Robert Mesta, Office of Migratory Birds and State Programs, Albuquerque, New Mexico

Louisiana Hatchery Recognizes Indian Heritage

Staff at Louisiana's Natchitoches National Fish Hatchery are working with members of the Caddo Indian Tribe of Oklahoma to recognize and honor the hatchery property as an important historic Indian site.

The hatchery property once was a village site for the Natchitoches Tribe of the Caddo Confederacy. Nearby Natchitoches, the oldest permanent white settlement in Louisiana, was named for this tribe. When the hatchery was built during the early 1930s—long before the requirements of the Native American Graves Protection and Repatriation Act—workers unearthed more than 100 human remains, along with pottery vessels and glass, shell, and metal ornaments.

The burial grounds were disturbed and most of the remains destroyed during construction; however, archaeologists removed a number of bodies and the majority of the known remains were taken to the Smithsonian Institution in Washington, D.C.

Now this wrong has been made right. During an open house last June, Hatchery Manager Karen Kilpatrick acknowledged the property as a historic Indian village site and burial area and presented a plaque to a representative of the Caddo Indian Tribe.

"It is the desire of the U.S. Fish and Wildlife Service to formally acknowledge this site of the Natchitoches Indians and to give due respect to the Caddo Nation in helping restore this historical site," Kilpatrick said at the ceremony.

The Caddo Nation once consisted of several tribes occupying the lower Red River and adjacent lands in Louisiana, eastern Texas and southern Arkansas. The Natchitoches, one of the Caddo tribes, lived on rich lands along the Red River near the present town of Natchitoches, raising corn, beans, pumpkins, and other crops, and keeping cattle, hogs, horses, and poultry.

In the 19th century the Caddo region became disputed territory between France and Spain, and later between Spain and the United States. With the advance of the French, Spanish, and American nations came war and disease, particularly measles and smallpox that devastated the tribe. In 1835, with settlers increasingly encroaching on their lands, the Caddos ceded all their lands to the United States and agreed to move beyond the boundaries of the United States into Texas and Oklahoma, their present home.

Long ago. *A depiction of a Caddo Tribal village located near the present-day site of Nachitoches National Fish Hatchery in Louisiana. FWS photo.*

Continuing in a spirit of reconciliation, six months after the June ceremony, on a snowy day in December, Service representatives from Natchitoches NFH and the Southeast regional office met with the Caddo Tribal Chair and other tribal council members at tribal headquarters in Binger, Oklahoma, to discuss how to work together to provide the appropriate recognition of the site and teach the public about Caddo history.

Proposals discussed at the meeting included developing a permanent display on the tribe in the hatchery's aquarium, constructing historical Caddo dwelling structures on hatchery property and possible repatriation of human remains from the Smithsonian Institution by the tribe for reburial on hatchery property.

James D. Brown, External Affairs, Atlanta, Georgia

Rhonda Clay, Natchitoches NFH, Natchitoches, Louisiana

Service Maintains Active Role in Michigan Treaty Fisheries

After two years of negotiations, a consent decree under which the Chippewa Ottawa tribes of Michigan regulate their treaty fisheries went into effect last September.

The new agreement is the result of significant changes over the 15-year duration of the previous consent order, signed in 1985. Two new tribes, Little Traverse Bay Band and Little River Band, gained federal recognition. As a group, the tribes developed an effective system of regulation, conservation and enforcement, becoming involved in every aspect of the fishery.

Additionally, the 2000 consent decree takes into account changes in the abundance and distribution of Great Lakes fish populations.

The new consent decree names an executive council with biological and law enforcement standing committees. Composed of tribal, state and federal biologists, this council, the Technical Fishery Committee, operates by consensus with more structure and well-defined roles than its predecessor, the Technical Fishery Review Committee.

The decree also establishes a citizen advisory committee to provide insight and feedback on problems, issues, and concerns related to the agreement.

The signing of the decree means that the Service continues its active role in the original 1836 treaty fishery, providing technical assistance to the tribes, helping collect data needed to regulate the fishery and collaborating on lake trout rehabilitation. Besides membership on the Chippewa Ottawa Resource Authority board and the Technical Fishery Committee, Service personnel often participate in interagency projects.

Lake trout rehabilitation is at the heart of the new decree. Biologists believe that by reducing factors affecting mortality—such as fishing and sea lamprey predation—trout in lakes Huron and Michigan will reproduce naturally. To that end, the decree reclassifies rehabilitation zones to protect historic spawning sites and promote sea lamprey control, increase lake trout abundance, and provide more fish for all users.

Important resource. *The Service works closely with tribes and private groups to conserve lake trout. FWS photo: Dave Erdhal.*

For the past several years, Service personnel have assisted Intertribal Fisheries and Assessment Program crews in assessing walleye populations through electrofishing surveys in lakes Michigan, Huron and Superior to evaluate the tribes' walleye stocking program.

A recent Service-tribal effort to stock lake trout eggs on a Lake Huron spawning reef used artificial turf incubators. Biologists placed more than a million eggs cradled by crated astroturf layers on the reef in an attempt to better imprint the trout.

Another study in northern Lake Huron, aimed at determining distribution of whitefish and incidental species such as lake trout in a targeted whitefish gill net fishery, was conducted by staff from the Service's Alpena Fisheries Resource Office, the tribes and the Michigan Department of Natural Resources during the two years leading up to the new decree. Subsequent to the 2000 agreement, the Alpena staff has worked with Bay Mills Indian Community to conduct a similar gill net study in Lake Huron's Hammond Bay. The interagency Technical Fishery Committee reviewed and endorsed these studies.

Jennifer Dale, Chippewa Ottawa Resources Authority, Bay Mills Indian Community, Michigan

A River is Restored Through It

Recently, the *Albuquerque Journal* heralded the opening of an $80-million resort hotel, a lavishly appointed, adobe-style affair perched just beyond the west bank of the Rio Grande, 20 miles north of Albuquerque on the Santa Ana Pueblo reservation. No less impressive than the new hotel are the Santa Ana Pueblo's efforts to restore the natural landscape of the Rio Grande where it runs through the reservation.

For tribe members, biologists and hotel guests, the landscape restoration is already raising spirits and—more importantly—improving habitat, and proving that a flair for business does not preclude environmental responsibility.

"Having an income from our various businesses, such as the Santa Ana Star Casino and the Hyatt Regency," said Tribal Administrator Roy Montoya, "helps us retain our cultural heritage."

In this instance, retaining cultural heritage is bound together with the Santa Ana Pueblo Bosque Restoration Project.

Launched in 1996, the Santa Ana Pueblo Bosque and River Restoration projects aim to enhance the river and the bosque (forest) landscape lining its banks as it flows for six miles through the reservation. The Pueblo and the Bureau of Reclamation have changed channel characteristics on a two-mile stretch; and with funding assistance from the Service, the Bureau of Indian Affairs, and the Environmental Protection Agency, the Pueblo has restored two miles of bosque on the river's west bank, just a stone's throw from the new hotel. Improvements on the east bank will begin soon, and plans are underway for restoring the remaining four miles.

Historical anecdotes describe the Rio Grande as "a mile wide and an inch deep." But the river once dramatically fluctuated between high and low flows. Flooding in the early 1940s drove federal agencies to construct flood-control and river channelization structures—dams, levees and, along the river banks, 12-foot iron contraptions that trapped sediment and debris during floods.

These projects dramatically altered the character of the Rio Grande, converting it from a wide, shallow river to a much narrower and deeper one.

Arizona Tribes Partner for Wildlife

Rejuvenated. *Cottonwood trees in the restored area of the Santa Ana Pueblo Bosque. FWS photo: Ben Ikenson.*

"The river looks more like a ditch today," said Montoya.

With the river's altered state, native trees such as cottonwoods and willows did not have the floodplain conditions needed to nurture germination. Meanwhile, non-native vegetation such as salt cedar and Russian olive began taking root, quickly spreading through the bosque. These exotic plants compete with native species for water, light and nutrients, and are more resistant to the fires produced by the under-story fuel they generate within the forest. The bosque has been dying a long, slow death.

The tribe realized it had high hurdles to overcome to return the river to its natural conditions.

"The Pueblo wanted to remove exotic trees, reestablish a mosaic of native vegetation, restore river channel characteristics, and improve fish and wildlife habitat for endangered native species such as the Southwestern willow flycatcher and Rio Grande silvery minnow," said Todd Caplan, director of the Santa Ana Department of Natural Resources.

To deal with the exotic plants, the Pueblo has been working with New Mexico State University and Bosque del Apache National Wildlife Refuge in testing different herbicides on Russian olive root sprouts. The Pueblo used heavy machinery and ground crews to eliminate thousands of salt cedar and Russian olive trees. The salt cedar was shredded into mulch; the Russian olive was cut into firewood and distributed to the Santa Ana Pueblo elders.

A 200-acre portion of the cottonwood bosque is now free of non-native trees. Many of the elderly members have recalled the days of their childhood when the bosque was an open-gallery forest consisting of the old cottonwood and willow trees.

After clearing 115 acres of salt cedar from what was previously a wet salt-grass meadow, Caplan and staff altered the saline soils with gypsum and irrigation water, and seeded the area with a native, salt-tolerant grass mix to prevent erosion. They also planted more than 1,600 cottonwood and black willow trees in areas where the salinity levels are low. With a plant survival rate of 90 percent, one restoration hurdle was cleared.

Ben Ikenson, External Affairs, Albuquerque, New Mexico

All together now. *A Tohono O'odham tribe member packs fencing material up a mountain to the project area. FWS photo.*

Arizona's 23 Native American tribes own 20 million acres—representing 28 percent of the land in the state. Their large, relatively undeveloped land holdings make tribes an important focus of the Service's Partners for Fish and Wildlife Program in Arizona.

The Partners program provides financial and technical support to private landowners who want to improve fish and wildlife habitat on their land. To date, Partners has worked with Colorado River Indian tribes, Hualapai, Hopi, Tohono O'odham, Navajo, White Mountain and San Carlos Apache, and Zuni tribes. Projects run the gamut from protecting Apache trout to wetland restoration to developing native tree nurseries for riparian habitat restoration.

In 1999, Partners combined efforts with the Tohono O'odham Nation to protect a federally listed cactus. The Schuk Toak District of the Tohono O'odham Nation in southern Arizona is a known location for the endangered Nichol's Turk's head cactus, which grows in small patches in only three desert mountain islands in southern Arizona and one in Sonora, Mexico.

During a survey for this species in 1997, biologists found evidence that javelina and desert bighorn sheep were eating this cactus in parts of its Arizona range.

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Arizona Tribes Partner for Wildlife

(continued)

With help from the Service, tribe members on horses packed 39-inch wide field fencing and 6-foot metal T-posts into rugged terrain to erect exclosures on two mountain peaks on Tohono O'odham Nation lands to protect Nichol's Turk's head cactus from grazing by javelina. Tribal biologists are collecting information on javelina and bighorn sheep grazing and its effects on the cactus, and possible conditions under which cactus are more likely to be grazed, such as during droughts.

In another Partners project, along the Little Colorado River, the Pueblo of Zuni is restoring an 80-acre site where Zuni spirits and ancestors reside. Partners is contributing to earth moving efforts and building water control structures to restore riparian and wetland function to a river now dried by decades of groundwater pumping, reservoir construction, and unrestricted livestock grazing. In the future, when Pueblo leaders make their quadrennial religious pilgrimage to the area, they'll find the valley shared by neotropical migrants—including the endangered southwestern willow flycatcher, waterfowl and shorebirds, rails, and yellow-billed cuckoos.

Marty Jakle and Jeff Humphrey, Ecological Services, Phoenix, Arizona

The Day of the "Duck In"

For nearly a century, conflicts between Native subsistence lifestyles and international treaty have stolen some of the joy of springtime on the Alaska tundra. Thanks to decades of work by Alaska Natives, the Service, the Alaska Department of Fish and Game and other partners, that should all change in March of 2003.

The 1916 Migratory Bird Treaty with Canada prohibited the taking of waterfowl between March 10 and September 1. In so doing, it also—probably unintentionally—made illegal the traditional Spring harvest many northern peoples had long depended upon for relief from the slim rations that typically mark the closing days of winter.

The ratification of the treaty never stopped Spring subsistence hunting, but it effectively made criminals of Native hunters who were simply participating in a traditional harvest their people had celebrated for generations. Attempts to enforce the closed seasons led to an atmosphere of conflict, which came to a head on May 20,1961. The "Boston Tea Party" of Alaska's migratory bird law enforcement began that day as Service special agent Harry Pinkham charged Barrow resident Tom Pikok with taking waterfowl out of season. A week later, State Representative John Nusungingya was charged with having a duck in his possession. This was the final straw.

A day later, 138 Barrow residents arrived at the part-time magistrate's office, each carrying a dead duck. All of the protestors willingly signed statements saying that these waterfowl were taken illegally. No one was prosecuted.

During the 40 years since that 1961 "Duck In," many attempts have been made to amend the U.S.-Canada Migratory Bird treaty to allow spring subsistence hunting. Finally, in 1995, representatives of Canada and the United States signed a protocol to bring about such an change. The Senate ratified the treaty in 1997, and the United States and Canada formalized the terms of the agreement in 1999.

The new agreement mandated that Native, federal and Alaska state representatives have equal responsibility for proposing regulations for a Spring hunt. After a lengthy public process, the Native Migratory Bird Working Group (formed in 1989 to represent Alaska Native subsistence hunters), the Alaska Department of Fish Game and the Fish and Wildlife Service established the Alaska Migratory Bird Co-management Council, a single statewide management body consisting of a representative from the Service and the Alaska Department of Fish and Game, and representatives from ten of Alaska's nonprofit tribal organizations and the North Slope Bureau.

Addressing the group's first meeting last October, Assistant Migratory Bird Coordinator Mimi Hogan predicted a stable future.

"The recommendations coming from this Council will give us a greater voice in dealing with migratory bird issues on a national level," Hogan said. "The waterfowl that we depend on are used by other people across the United States. And those same birds are, themselves, dependent upon habitats beyond the influence and control of Alaskans. We need to be connected to forces outside our state to ensure that our concerns are heard."

The council has since been using regional input as a basis for developing regulations. Once approved, these will be forwarded to the migratory bird flyway council and the Service Regulations Committee to be considered along with proposals concerning the usual fall and winter seasons. These spring and summer regulations will be published by late 2002 and are scheduled to take effect the following March.

Under the new guidelines, this hunt will be open to permanent village residents, regardless of race, who live within subsistence areas with a history of migratory bird harvest. Until such regulations take effect, the interim "closed season" rules will continue to allow some specific harvests in areas where people have long relied on local waterfowl for food during the spring and summer months.

Bruce Woods, External Affairs, Anchorage, Alaska

New Native American Liaison Brings Experience, Positive Attitude

By Karen Lynch-Castillo
Special to Fish &Wildlife News

If not for Hurricane Hugo, the Service's Native American Liaison, Patrick Durham, might still be in South Carolina, managing privately-owned woodland property.

After the 1989 hurricane, which devastated the timber industry, Durham, a forester, needed a job. Little did he know that he would eventually end up in southwest Colorado as the woodlands forester for the Ute Mountain Ute Agency. Although he was in a new section of the country, Durham said he found "working with tribes wasn't too different than where I come from, a small community where people cared what happens around them with regard to the environment."

In 1992, with his year-long forestry management contract with the Ute Mountain Ute nearly completed, Durham heard of a job opening at the Native American Fish and Wildlife Society in Denver. He got the job and that is how, he said, "I got out to Indian country and started working with tribes in the United States as the society's technical services director."

During the seven years Durham worked with the society, he promoted services and prioritized tribes needing assistance using a vast network of resources. Most of the time this involved linking tribes to federal agencies.

"I learned what the federal agencies could do and how they worked, I knew what tribes needed, how they wanted to get it done and I knew what capabilities they had, so it was exciting stuff for me and still is," Durham said.

Late last year, Durham took on a new challenge as the National Native American Liaison for the Service, giving him with a new stature and perspective for providing services on behalf of tribes. He draws on his six years of experience and relies upon contacts he made at the society, including federal agencies and organizations, to keep abreast of the ever-changing issues in Indian country. Getting national initiatives such as the Partners for Fish and Wildlife program organized among tribes keeps him busy.

At your service. *Native American Affairs Liaison Pat Durham. FWS photo: Rachel F. Levin.*

Most importantly, Durham described the work he does as "tool-building." This, he said, enables the seven regional liaisons across the country to work more effectively with tribes.

"In a most important way, my job is to make sure that everybody knows what his or her responsibility is," he said.

Without the seven regional liaisons, Durham said, it would be difficult to carry out the Service's commitment to tribes because the liaisons perform the actual on-the-ground work, implementing the Service's Native American policy.

As a tool-builder, Durham stressed the tight network of relationships between his office and the seven regional liaisons who are "independently resourceful."

"I can say the Service has gotten better since the regional liaisons are going out into the field," he said. "Tribes are more able to develop trust if they know there is a particular person they can discuss important issues with. Not only have the liaisons gone out to the field, they are in close communications with each other. If we don't have answers to something, then we can find it. We all talk to one another."

The Service's regions are similar in structure to the society, an inherent advantage for both organizations, said Durham. The society's regional and national conferences are excellent communication forums and provide both a regional and national focus for Service employees to interact with tribes.

"Through the society, there is access to fish and wildlife personnel with every tribe in the country," said Durham. "They not only have information about any tribal program in the country through the 'moccasin telegraph' but valuable information such as where tribes get their money, what species they may manage, or what type of systems they use to manage water resources."

The office of Fisheries Management Assistance has played an important role as well in tribal resource management, Durham said.

"Because restoration funds are not allocated to tribal programs directly, we need to find creative ways to meet tribal needs—that is part of our job," he said.

Deputy Assistant Director for External Affairs Mike Smith is delighted to have Durham on board with the Service.

"He has done some very, very good things since coming to us. We anticipate his role will be as an action liaison," Smith said. "He will be the person we can look to for working with programs inside the Service and who will try to get these programs linked with good tribal partners. There are some promising projects or big-ticket items that Patrick has been working on since he's been here such as educational outreach and cooperative agreements with tribes to more efficiently care for trust assets."

Recognizing available opportunities for partnerships, Smith agreed the Service has the opportunity to work more with tribes and reinforce the efforts of the liaison office to keep setting priorities and building partnerships.

Karen Lynch-Castillo, a Navajo Indian, is the technical editor of the quarterly publication of the Native American Fish and Wildlife Society, From the Eagle's Nest.

Student Wildlife Ambassadors Learn They Can Make A Difference

Barbara Beggs works with some real geniuses. Every one of the high school students involved with the Student Wildlife Ambassador Project, she says, has brought enthusiasm, commitment and fun to the project, a program Beggs, a Service volunteer, created to introduce students to the range of conservation issues associated with international wildlife trade.

"This project has been the single greatest influence on education at our school…"

"This project has been the single greatest influence on education at our school," said Phillip Lee, a graduate of the program. "People who never cared at all about school suddenly started showing up to class, enthralled and excited…We had so much fun we almost forgot that we were learning something."

The Student Wildlife Ambassador Project gives students a hands-on introduction to conservation issues associated with wildlife trade, showing them what Service wildlife inspectors face every day as overwhelming numbers of wildlife products enter the United States. It also introduces them to national wildlife refuges.

Inspiration for the program came in 1994 at the Conference of the Parties to the Convention on International Trade in Endangered Species of Flora and Fauna—known as CITES—held in Ft. Lauderdale, Florida, Beggs' hometown. Working with Service employees, she introduced a lively, new element to the two-week meeting: kids. Selected local students learned their CITES basics in the classroom, then brought their questions to the Ft. Lauderdale Convention Center where they greeted delegates before meetings convened, got a behind-the-scene look at how CITES works and interviewed dignitaries from around the world. Eight hundred Florida students participated.

Two and a half years later, Beggs took on a bigger challenge. She decided to turn the one-time Ft. Lauderdale activity into a nationwide program to help students better understand the connection between their small local actions and larger conservation issues. Criteria used to identify participating schools included close proximity to ports where wildlife products enter the United States and proximity to local refuges where students could learn about conservation first hand. The project also linked U.S. students to students in other countries whose opinions on conservation often differed.

Approximately 150 high school students in five U.S. cities piloted the project. Students formed Wildlife Ambassador teams. These teams taught K-12 classes—an audience of approximately 4,000 students—about wildlife trade, species conservation, and biodiversity. The project created partnerships with the U.S. Fish and Wildlife Service, American Zoo and Aquarium Association, the National Fish and Wildlife Foundation, and others.

Since 1996, the Student Wildlife Ambassador Project has connected students to CITES issues, first in Zimbabwe at the 1997 Conference of the Parties and then in Kenya last year at the 11th Conference of the Parties. Students have participated in outdoor programs; benefitted from educational use of zoos, aquaria, refuges, and other public lands; received natural resource career mentoring; and videoconferenced with students from CITES-host countries, as well as experts representing a variety of stakeholder organizations.

The result? Students have come to recognize that the world is far more complex and interconnected than they imagined. At the same time, the program has given them some extraordinary tools—the tools they need to become responsible citizens and leaders, here and around the globe.

Mary Maruca, International Affairs
Arlington, Virginia

A Volunteer Experience at Rocky Mountain Arsenal NWR

A good place to be. *Judith Amborst-Verbeck found peace of mind—and a few office tasks to do—during her stint as a volunteer at Rocky Mountain Arsenal NWR. FWS photo.*

A brisk northwest wind ripples the surfaces of lakes Mary and Ladora as I stand on the recently rebuilt earthen dam between the two. Five mature bald eagles perch in the cottonwoods along the southern shore of Lake Ladora. Turning west, I see the visitor center and remember meeting Rocky Mountain Arsenal National Wildlife Refuge volunteer coordinator Sherry James in 1994.

What brought me to the refuge as a volunteer was insatiable curiosity, a Colorado Wildlife Federation tour and the loss of my job as a result of a brain tumor. Three years later I was diagnosed with a traumatic brain injury with cognitive damage—a result of the rollover auto accident that led to the discovery of the tumor.

The opportunity to volunteer has been a sanity-saver in a very difficult situation—no job, no income at times, homelessness for 2 ½ years, and sketchy housing periodically afterwards. Volunteer work is the constant in my chaotic life. It is a safe place to experiment, to push myself to explore my abilities in this new life I am living, to gradually understand why, for example, I was unable to recognize a lactating prairie dog, though I had worked with nursing mothers and their newborns for many years.

I began by volunteering four hours a week at the refuge's visitor center desk. Jo Platt, another volunteer, taught me the ropes of answering the phone, scheduling tours, opening and closing the visitor center, and helping environmental education students find what they needed. Within a year, I was putting together teacher packets for the environmental education programs.

As I read the material, I was fascinated with the many ways of setting up learning environments. Perhaps this was something I could do. By 1998, I did.

I enjoyed the challenge of taking high school students "out on the town"—a nearby prairie dog town, that is. The experience of working with students as they observe prairie dog activity, conduct scientific explorations, talk about food chains and webs, and write and share poetry is unforgettable.

During the first years of my volunteer experience, plague affected prairie dog towns and the refuge was opened to prairie dog relocations. Helping during several relocations was fascinating, fun and a lot of hard work. Another volunteer, Wendy, and I wrote a three-part article about "The Plague" for our volunteer newsletter, The Talon. It was a great experience working together, reading research from all over the world, and learning more about fleas and temperature than I had ever intended.

I spent many hours working at the Service's National Eagle Repository, located at Rocky Mountain Arsenal Refuge. Typing temporary permits for native people receiving raptor carcasses and feathers, brought back memories of Iowa, Sac, Fox, Kickapoo and Potawatomi families I had met in northeast Kansas. Later, I learned to recognize and sort immature and mature bald eagle and golden eagle feathers.

Native plant revegetation efforts at the refuge are enormous and challenging. Weeding and transplanting prairie plants is a sweaty, kneebending, dirty job—but is it ever worth it! From my vantage point above Lake Mary, I can see a dynamic wetland habitat, a lively prairie habitat, and the browns, beiges, and rust colors of winter.

On reflection, this place called Rocky Mountain Arsenal National Wildlife Refuge with its contaminated spots and its habitat "connections" broken or destroyed, this place of people committed to restoration and rehabilitation, is a safe place, a refuge for me as I work on my own habitat restoration… that landscape of neurons and dendrites called the brain.

J.T. Armborst-Verbeck, volunteer,
Rocky Mountain Arsenal NWR,
Commerce City, Colorado

Cooking Up Conservation in Vermont

The award was merely the frosting on the cake. Missisquoi National Wildlife Refuge in northern Vermont was the bakery. What did Refuge Manager Mark W. Sweeny and his staff cook up? A recipe for successful waterfowl conservation and management in Vermont.

The refuge was honored last October for its continuing successful waterfowl management. Vermont wildlife biologist William Crenshaw presented the refuge with the framed original artwork for the state's 2000 duck stamp, which depicts Long Marsh Bay, located at the refuge's northwestern boundary.

Missisquoi located at the northern end of the Lake Champlain Valley and extending to the Quebec border, is a deliciously perfect setting for migratory bird nesting and rearing.

"The ingredients are pretty simple," said Sweeny. "There are several miles of dikes near the Missisquoi River. In the spring when the river floods, the impounded areas fill with water. Refuge staff hold that water at stable levels well into the summer when the area would normally dry out."

The refuge has extensive stands of wild rice, wild celery, duck potato, and buttonbush. These provide excellent feeding and nesting cover for Vermont's largest concentration of wildfowl, including great blue herons, black terns, and osprey, according to Sweeny.

Missisquoi also has ideal conditions for the production of extensive stands of wild rice. Viewed from the air, the refuge's bounty stands out as an inviting iridescent green buffet. Birds heading south can see it for miles—an invitation to dine at the refuge.

Helping fulfill the Service's mission to conserve and protect wildlife and habitat, staff at Missisquoi enhance the land's natural productivity. Refuge biologist Al Zelley supervises the use of heavy equipment to maintain the dikes and healthy water circulation in both the impoundments and other marshes.

"We've had good success over the years maintaining open channels in the impoundments and the marshes on the refuge that would otherwise fill in and become stagnant," said Zelley. "The refuge marshes on the Missisquoi River delta are naturally attractive to waterfowl. We just tweak things a little to make them even better."

Sweeny plans on adding to the refuge's award-winning conservation recipe with a new headquarters complex for human visitors. Groundbreaking could take place this fall with completion targeted for the centennial celebration. The award and artwork will be prominently displayed in the new complex.

Ed Henry, External Affairs,
Hadley, Massachusetts

Bequest Spurs Innovative Visitor Center

New gathering place. *A new environmental education center at John Heinz Refuge features a gift shop run by the Friends of John Heinz NWR at Tinicum. FWS photo: Frank Miles.*

Urban national wildlife refuges preserve some of the most important tracts of undeveloped lands in the nation's large cities. To succeed, they need community support and innovative thinking.

Philadelphia's John Heinz National Wildlife Refuge at Tinicum has a strong measure of both support and innovation. Proof of this is in the Cusano Environmental Education Center, which opened in January. The center was built partly with funds from a bequest to the Interior Department from a local man.

A special preview event last December introduced the new facility to several hundred invited guests including staff volunteers, partners, local, state and federal officials, refuge neighbors and representatives from the Service and the National Fish and Wildlife Foundation. On January 20, the center opened to the public—a 14,000-square-foot, environmentally friendly facility with classrooms, meeting room, resource library, exhibit and interactive display area, and gift shop.

The center also features a special water purification system called "The Marsh Machine," which when completed will resemble a greenhouse with large tanks. In it, wastewater from the center will be purified by bacteria in the roots of plants. The water will be recycled back to the center for non-potable purposes. The center itself is set on piles to "tread lightly on the land," utilizing geothermal heating and cooling, recycled materials and natural light features.

The bulk of the center's funding came from the bequest of Antonio "Tony" Cusano, who died in 1993. Cusano had worked in a Philadelphia General Electric plant, and over the years made wise investments, lived modestly and had no heirs. When he made out his will, Cusano wanted to leave something for the country "that had given him so much in life," said his friend and executor, Greg Mallon.

Cusano loved nature and being outdoors, and he hoped that by leaving nearly $2.5 million to the Department of the Interior, his legacy would benefit the environment and teach others the importance of stewardship of our natural resources.

The community and refuge partners, as well as volunteers, were involved with the planning and design of the center from its beginning. The Friends of the Heinz Wildlife Refuge at Tinicum has been a key player and runs the gift shop, Tinicum Treasures.

"We are proud to be part of such a successful private/public partnership," said Northeast Regional Director Mamie Parker at the December preview event. "The funding and support of the National Fish and Wildlife Foundation, Friends, people donating funds, public officials and community organizations have helped the Service demonstrate new ways of teaching and learning environmental education."

While giving accolades to the newly-built center, Parker also pointed out that it is the refuge, its habitats and inhabitants are the stars.

Bill Buchanan, John Heinz National Wildlife Refuge at Tinicum, Philadelphia, Pennsylvania

Ed Henry, External Affairs, Hadley, Massachusetts

Kids Learn Hunting Skills—Then Put Them to the Test

During a duck-calling demonstration last December at Anahuac National Wildlife Refuge, the one-hundred-plus excited children practicing their speckled-belly goose calls did not lure a single goose—or a duck for that matter. The demonstration served its purpose, though, bolstering an already enthusiastic crowd at the Youth Waterfowl Expo 2000 hosted by the refuge and its many partners.

The first of its kind in the state of Texas, the expo was part of the ongoing celebration leading up to the National Wildlife Refuge System Centennial. Anahuac is one of three "focus refuges" in the Southwest region chosen to hold special events to kick off the countdown to the 2003 Centennial.

More than 500 children and parents from southeast Texas spent a Saturday on the refuge learning about wetlands and waterfowl. Kelly McDowell, Anahuac refuge manager, explained the purpose of the event.

"We not only want these kids to be safe hunters, we want them to have a greater appreciation and respect for wetlands and the outdoors," she said.

Hunter ethics, wetland ecology, dog training and air rifle demonstrations were among the topics described during 25 15-minute presentations. Participants were required to attend a minimum of 17 presentations to qualify for a chance to win the most coveted of raffle prizes: a free guided youth hunt on the refuge or adjacent hunt club lands.

Children had their own favorite topics—and their own reasons for liking them.

"My favorite was the 'Shoot, No Shoot,' because it was like real live shooting," said 11-year-old Robbie Prejean "It was heavy like a real gun and it taught you how to lead a bird. You also got in trouble if you shot the wrong bird. But I also liked the 'Care and Cooking of Waterfowl' because we got to eat."

Robbie was one of 75 children whose names were drawn for the December 18th hunt. Eighteen hunting guides volunteered their time during prime waterfowling season to assist.

"I think it's important to get these kids out hunting. It's something I always did with my father so I enjoy taking them out there," said Tim Wollford, a professional guide with the Oyster Bayou Hunt Club. "They saw some nice birds and got to see a good dog do some retrieving. Hopefully they'll remember this."

The guides provided decoys, retrieving dogs, transportation to the blinds and a lot of professional advice.

"It was a lot of fun and I got to see a dabbling duck," Robbie said. "I didn't know the difference between dabblers and divers until the bird identification, so that was cool."

Hunters bagged 52 birds, 10 of which were geese.

Because Anahuac was one of three refuges selected to host a Centennial event in Region 2 in 2000, the refuge received challenge cost share funding from the regional office specifically for the expo. This funding was matched or augmented by local partners, including Academy Sports and Outdoors, Ducks Unlimited, Fin and Fowl Hunt Club, Friends of Anahuac Refuge, Texas Parks and Wildlife, and the Wetlands Conservation Association.

Nearly 150 volunteers contributed more than 1,400 hours to ensure the success of the event. Refuge Manager McDowell judged the expo and the hunt successful.

"Some of the local hunt clubs have been doing this for years but on a much smaller scale," said McDowell. "This year everyone decided to partner up and I think it really worked to the benefit of the kids. I have a feeling we'd better start preparing for next year's expo right now."

Nancy C. Brown, Texas Chenier Plain NWR Complex, Anahuac, Texas

Seeing Your Shadow Can Be a Good Thing

The Service has once again contributed to "conserving the nature of America," not by protecting a species or establishing a national wildlife refuge but by contributing to the educational experience of America's youth.

February 2, Groundhog Day, was National Groundhog Job Shadow Day. This is a day when students across the United States leave their classrooms and go out into the "real working world." Three students from three different parts of the country had a once-in-a-lifetime experience that might change their whole perspective of working life.

Felicia Wiltz, 20, is a student at the Treasure Lake Job Corps Center on Wichita Mountains Wildlife Refuge in Indiahoma, Oklahoma. Wiltz is currently in the electrical wiring trade and aspires to attend a fiber optics school, then study photography at Xavier University in New Orleans.

Wiltz "shadowed" Kerri Watson, a legislative assistant to U.S. Representative J.C. Watts of Oklahoma. During the day Wiltz met with Congressman Watts for an hour, something that many individuals sit on a waiting list to do. She also sat in the Senate Gallery, witnessed the debates prior to the confirmation vote of Attorney General John Ashcroft and toured Washington, D.C.

Felicia Wiltz was not the only Job Corps student who came to Washington to participate in this national event. Brandianne Elks and Bryant Cole, both from Potomac Job Corps Center's Advanced Training Program, also experienced what a day in their future working world might be like.

Elks "shadowed" Stacy Harden, administrative assistant for the Service's Division of Congressional and Legislative Affairs, who works in the Main Interior Building, while Cole spent the day down the hall with Michelle McBryde, a program assistant for National Park Service. By pure coincidence both "shadowees," Harden and McBryde, are Job Corps graduates. Both host offices received "Partners in Education" awards from the Job Corps Training Program.

For more information about National Groundhog Job Shadow Day and how to participate in next year's event, visit <http://www.jobshadow.org> or contact the Service's Division of Diversity and Civil Rights.

Stacy Harden, Office of Congressional and Legislative Affairs, Washington, D.C.

Literature Search Proves Helpful

Service employees have executed nearly 20,000 online searches using searchable databases available through the National Conservation Training Center's Conservation Library Website.

The one-year pilot test of NCTC's trial subscription to the Cambridge Scientific Abstract Internet Database Service has shown extensive use of the Aquatic Science and Fisheries Abstract, Biological Sciences Collection, and Environmental Sciences and Pollution Management databases by Service employees. Because some historical data and topics relevant to the Service appear to be missing from these databases, the Service may supplement this literature search service with more resources available electronically to field offices.

All employees who access the Internet through the Service modem pool have access to this service. If your office uses a local Internet service provider, contact the Conservation Library at <library@fws.gov> for a user name and password.

Once a user retrieves articles relevant to particular research needs, a document delivery interface with links to the Department of the Interior Library interlibrary loan service or several commercial vendors delivers the articles for a fee. Users may also obtain articles from many local university libraries at no cost.

Go to <http://library.fws.gov/searchdbs.html> for access to the literature search service and send your feedback to the NCTC Conservation Library.

Anne Post Roy, National Conservation Training Center, Shepherdstown, West Virginia

Having a Field Day at Squaw Creek

Last August, construction contractors and an armada of heavy equipment from across Missouri and Kansas converged on Squaw Creek National Wildlife Refuge to demonstrate wetland restoration management practices and tools to replace high-risk, flood-prone lands with optimum quality waterfowl and shorebird habitats.

More than 25 partners, 100 volunteers, and hundreds of visitors from Indiana, Iowa, Kansas, Missouri and Nebraska participated in this Wetlands Conservation Field Day (actually two days). They had a bird's eye view of wetland construction, installation of water control structures, and demonstrations of seeding, mulching and tree planting and they learned about the benefits of warm-season grasses and terrace and vegetation maintenance.

Though visitors walked away with a new understanding of habitat conservation, the real beneficiaries of the field day will be the shorebirds that migrate through Missouri's Squaw Creek NWR during spring and fall.

The field day was spearheaded by the Missouri chapter of the Land Improvement Contractors of America, in cooperation with the Fish and Wildlife Service, Natural Resources Conservation Service, University of Missouri Outreach and Extension and the Holt County Soil and Water Conservation District.

Squaw Creek NWR now has a 14-acre wetland unit adjacent to its auto-tour route dedicated strictly to shorebird management. The completed project includes a pull-off on the tour route with educational displays about shorebirds.

The project was truly a partnership; financial assistance and project expertise was from the refuge, the Service's Washington and Columbia (Missouri) Ecological Services Field Offices, the Missouri Bootheel Partners, and Ducks Unlimited. Members of Land Improvement Contractors donated their time and equipment. Total Service costs were less than $2,500

Ron Bell, Squaw Creek NWR, Mound City, Missouri

Partnerships Key to Conservation at Loxahatchee Refuge

Working together. *Volunteers planted more than 7,000 cypress tree saplings at Loxahatchee NWR. FWS photo: Christine Eustis.*

The endangered snail kite soars over the remnant cypress swamp in the heart of the Arthur R. Marshall Loxahatchee National Wildlife Refuge. From a canoe paddling through the canals and wet prairie of the refuge, you can see alligators basking in the sun and hear roosting wood storks calling from the brush tree islands.

Known commonly as Loxahatchee, the refuge lies in the northeastern corner of the Florida Everglades just south of Lake Okeechobee, the freshwater lake that half a century ago provided life-giving water to one of the largest wetland systems in the world. This large impoundment created after the U.S. Army Corps of Engineers replumbed the Everglades is now managed by the Service as part of the National Wildlife Refuge System.

Loxahatchee NWR provides essential habitat to more than 250 bird species and several animal and plant species that are state or federally threatened or endangered, including the snail kite, wood stork and sandhill crane. It also is home to the largest concentration of alligators in the Everglades ecosystem.

In the two and a half years that Refuge Manager Mark Musaus has been at Loxahatchee, he has sought local partnerships to promote conservation goals. "Without the support of our local partners," said Musaus, "the refuge would not be able to sustain its wildlife management responsibilities and provide important public use opportunities to our 300,000 annual visitors."

Partnerships extend beyond the refuge boundaries. Loxahatchee staff actively participated in the Comprehensive Everglades Restoration Plan to restore a healthy Everglades ecosystem. This Congressionally authorized plan consists of more than 60 components designed to work together to restore more of the historic, natural water flows to the ecosystem. The plan will take more than 20 years to complete at an estimated cost of $7.8 billion. The Service supports this effort and hopes that it will provide long-term protection and enhancement to this unique ecosystem.

On February 10, the refuge celebrated its 50th birthday by welcoming nearly 3,000 local visitors to the second annual Everglades Day, co-hosted by the refuge and the Audubon Society of the Everglades. Two other refuge partners—the Arthur R. Marshall Foundation and the Loxahatchee Natural History Association—played large roles in the day's events, which included free canoeing and kayaking trips into the

wetland, guided nature walks, games and face painting for children, and a chance to plant native cypress trees to help restore the natural ecosystem.

Four hundred volunteers planted more than 7,000 cypress tree saplings through a project spearheaded by the Marshall Foundation with a generous grant from the Banrock Station Winery in Australia. The winery donated $20,000 to the foundation to promote Everglades restoration, part of a company campaign to support wetland restoration efforts in Australia, the United Kingdom, New Zealand, Canada and the United States.

The day also included the dedication of a new Chickee Hut—a Native American structure with a grass roof—to provide outdoor education facilities for the public. Funds for the hut were donated by the Audubon Society of the Everglades.

Challenges remain for Loxahatchee NWR that will not be addressed by the Everglades restoration plan. For instance, exotic invasive plants like the melaleuca tree and Old World climbing fern threaten to choke out important native vegetation. Despite improvements, water inflows to the refuge still contain phosphorous from neighboring lands in concentrations that exceed what is healthy for native vegetation. The influx of new residents to South Florida is causing development pressures on the eastern side of the refuge.

These problems are not insurmountable, but the Service can not address them alone. Through innovative partnerships and funding, Mark Musaus and others will manage the refuge for the benefit of wildlife and provide a quality experience to the public.

When the 100th anniversary of Loxahatchee comes around, our children will still be able to walk the marsh trail and see red-bellied turtles lounging on rocks, white ibis stalking small fish among the marsh grass, and a snail kite soaring over the cypress swamp.

Christine Eustis, External Affairs, Atlanta, Georgia

At a Government Meeting, the Unthinkable: Spontaneity

It was to be another in a series of relatively routine meetings: assistant regional directors for Ecological Services and for Fisheries and Habitat Conservation getting together in Edenton, North Carolina, for three days in December to explore ways to blend their programs to better address common problems.

What actually happened was refreshingly unexpected and far from routine, according to Cathy Short, assistant director for Fisheries and Habitat Conservation.

"We had been ready to talk about a variety of program issues but this group suddenly came alive with an enthusiasm that was infectious," Short said. "We threw away our agenda—and wound up with some really wonderful results."

During the next 3 days, the assistant regional directors for Fisheries and those for Ecological Services joined Short and her division chiefs in a candid discussion of how they could meld their activities in ways that would give maximum benefit to the nation's fish, wildlife and people.

Setting aside traditional jurisdictional lines, the senior managers recognized that various components of both programs could pool resources in the field and work together on resource issues that might be impossible to address alone.

"The group not only arrived at a consensus but they expressed it in an elegant vision statement for the Fisheries and Habitat Conservation program," said Short. "It reads, 'Working with partners to protect the health of our lands and waters, restore fish and wildlife resources, provide opportunities to enjoy the benefits of healthy natural resources.' I think the fact that everyone was able to agree to such a simple statement is evidence of how close together we were."

A 23-page booklet identifying 17 innovative ways the Service is already carrying out the group's vision is available from the Assistant Director for Fisheries and Habitat Conservation, Office of Program Operations, U.S. Fish and Wildlife Service, 1849 C St. NW, Washington, DC 20240.

Ken Burton, Public Affairs, Washington, D.C.

A Weed Over Troubled Waters

It's not a field. *Ducks fly over it and mammals drown trying to walk on it. FWS photo: Craig Springer.*

Only the whirr of wasp wings buzzing broke the silence. Still air emphasized the lack of waterfowl on the small southern Texas lake that in early Spring should have teemed with teal, dabblers and divers making their way back north.

But now, weeds grow around old flat-bottom boats pulled along shore perhaps for the last time; the hollow shells of duck blinds offshore, left to ruin, proclaim a loud testament to what has been. Waterfowl hunting is now a distant memory, stolen from the lake in a crime against nature.

Invasive giant salvinia is the insidious culprit. Inadvertently introduced from Brazil via the aquaculture trade, giant salvinia has carpeted more than half of the lake's 160-acre surface, destroying waterfowl habitat. Beneath the two-foot deep salvinia carpet, the water is acidic, without oxygen, without light. Numbers of fish, invertebrates and native aquatic plants are greatly reduced. The carpet is so thick terrestrial plants grow on top.

In the parade of invasive species, giant salvinia is a recent arrival. And if zebra mussels made waves, giant salvinia is a tempest on the horizon. If unchecked, giant salvinia could cause irreparable harm to the environment and the economy—making it the kudzu of aquatic plants.

Continued on page 28

A Weed Over Troubled Waters (continued)

But hope floats just as the giant salvinia does. Last March, Bob Pitman, Region 2 invasive species coordinator, sounded the alarm on salvinia, calling scientists, water managers and private landowners to the National Giant Salvinia Conference in Houston, Texas. They discussed the problem of salvinia—and possible solutions.

"Weeds won't wait," warned Randy Westbrooks, invasive plant coordinator for the U.S. Geological Survey. "And weeds don't recognize political boundaries—we must have a tactical plan of attack."

Scientists spoke of the advancing salvinia front, now in 12 states, and their own failures and successes. One eventual solution may lie in the tactic with the most promise, a successful biological control agent from the land down under.

Dr. Peter Room of the University of Queensland in Australia told the gathered scientists about his experiences using a weevil to control giant salvinia. Twenty years of research on the salvinia weevil shows it eats through huge mats of giant salvinia in Australia and Africa. It feeds exclusively on giant salvinia and may avoid other U.S. plants. Service biologists and others will continue to try to discover whether salvinia weevils may be the key to stopping the spread of giant salvinia.

Meanwhile, according to Pitman, prevention is and always will be the first line of defense.

"The Service must continue to lead the charge to protect natural resources against invasive species so organisms like giant salvinia do not become household words," he said.

Craig Springer, Division of Fisheries, Albuquerque, New Mexico

Crane Biologist Shares His Experience in the Far East

Scott Hereford, a wildlife biologist with the Mississippi Sandhill Crane National Wildlife Refuge, recently returned from two weeks in the Russian Far East and Japan—a journey he called "the trip of a lifetime."

A crane specialist, Hereford was invited by the Wild Bird Society of Japan to lecture at an intensive training session on crane habitat management for biologists from northeast Asian nations. He was the only participant from North America—and the only native English speaker.

Hereford said just getting to the training session proved complicated. After flying across the Pacific Ocean, taking a bullet train across Japan, flying over the Sea of Japan into the Siberian city of Khabarovsk and traveling west on the famed Trans-Siberian Railroad, he finally arrived at the remote field camp where the training was held, on a lake in the southern Siberian wilderness in the Khingansky Reserve. There was no heat, running water or indoor plumbing, and electricity came only by gas generator at the site.

However, Hereford said, "our Russian hosts were very warm, friendly, and treated us with great hospitality."

Communication was "fascinating but slow" as words were translated into Russian, Mandarin Chinese, English and sometimes Japanese, according to Hereford. One of his own lectures on habitat management at the Mississippi Sandhill Crane Refuge lasted ten hours because of the time taken up by translation. Training sessions and field trips lasted well into the evening but there was always a little time for informal social gatherings, including songs from several countries.

"I brought a couple of harmonicas along and one night I was playing Mississippi blues tunes with people from Russia, Japan and Hong Kong," Hereford said.

In a region with not one but several indigenous crane species—including four that are endangered—the meetings were important as a means of exchanging critical scientific information about managing these magnificent birds and their threatened habitats. The use of prescribed fire to cut down on harmful effects of wildfires on nesting cranes, as well as descriptions of American approaches to reintroduction were particularly well received.

The management problems these countries face were remarkably varied but Hereford believes he helped his foreign colleagues by relating the experience of Service biologists and managers.

"I learned a great deal as well, including different approaches to problems and how to make do with less," said Hereford.

On his return home, Hereford stopped off on the northern Japanese island of Hokkaido, home of the spectacular red-crowned crane. He visited several key wetlands and visitor centers funded and staffed by the local towns, and met with crane biologists and delivered a talk at the Akan International Crane Center north of Kushiro. Cranes are revered in Japan; one local official described them as the "perfect symbol of nature."

"I look forward to the day, hopefully soon, when a local official near the refuge espouses similar values," remarked Hereford.

Working with the Services's International Affairs Office, which was instrumental in arranging this trip, Hereford hopes to eventually help bring some of the key participants from Northeast Asia to key sites in America to demonstrate crane management.

"I made many new friends and I hope to keep the lines of communication going," he said. He has already been asked by the Khasansky Reserve in Russia to serve as an advisor on a crane reintroduction there.

Training Soldiers, Protecting Birds Go Hand in Hand at Army Base

Military for a day. *Sometimes, Service employees have the opportunity to imagine life working for another agency, as biologist Krishna Costello did at Fort Hood. FWS photo: Ben Ikenson.*

If Steven Spielberg needed a set for his next epic war picture, Fort Hood would serve him well. One of the largest heavy artillery training sites in the country, Texas' Fort Hood is the site of live weapons fire, aviation training, and 544 armored tanks.

Beneath the chomping treads of the tanks, paved roads buckle and crumble like tea cookies. It is not surprising then that a substantial portion of the 220,000-acre Army base resembles a barren, scorched battlefield with ruts as deep as trenches.

But, there is another side to Fort Hood where birdsong instead of the deafening roar of artillery fire fills the air. A 1993 Service biological opinion said portions of Fort Hood contain essential nesting habitat for two endangered neotropical migratory songbirds: the golden-cheeked warbler and black-capped vireo. The Army now manages 66,000 acres—more than 25 percent of the base—for the recovery of these two species.

The fort also provides a haven to wintering bald eagles, occasional whooping cranes, peregrine falcons, and other rare plants and animals.

After the Service issued its biological opinion, Fort Hood contracted with The Nature Conservancy of Texas to research and monitor the two endangered birds. With on-base offices in the fort's Natural Resources Management Building, conservancy researchers have teamed up with Service and Army biologists to gather data. The data they continue to collect constitutes the most comprehensive body of information to date on these two tiny birds.

Migratory birds, mysteriously engineered by Mother Nature, have relied on their own built-in tracking systems to navigate long distances. Every March, black-capped vireos and golden-cheeked warblers—both no larger than the palm of a child's hand—journey from their wintering grounds in Mexico and Central America to the protected habitat primarily along the east side of Fort Hood. Some birds use the same nest sites they occupied in previous years.

Vireos prefer nesting in patchy or clumped scrubby vegetation that has a leaf cover extending to the ground. Warblers build nests in mature oak-juniper woodlands. They strip the bark of ashe junipers for building materials.

Unfortunately, vireo and warbler populations have been in decline for decades. Black- capped vireos once ranged as far north as central Kansas during the breeding season. They are now confined to central and west Texas and northern Mexico with only a few scattered remnant populations in southern Oklahoma and north Texas. Warblers only breed in the fast-disappearing habitat of central Texas. The vireo landed on the endangered species list in 1987; the golden-cheeked warbler followed suit in 1990.

"The major threats these birds are facing," said Service biologist Krishna Costello, "include habitat loss due to urban and agricultural development in both their wintering grounds and their breeding grounds, and nest parasitism by brown-headed cowbirds."

Brown-headed cowbirds are named for their association with cattle that keep grasses cropped to lengths that make it easy for the birds to snatch insects. These parasitic birds lay eggs in the nests of other birds, which then give parental care to cowbird young at the expense of their own young. The nesting success of more than 220 species of songbirds has been reduced by the presence of cowbirds.

"Historically, the impact of parasitism was limited," said Fort Hood Endangered Species Program Manager John Cornelius. "The cowbird effects on other birds were localized so long as they were associated with wandering herds of bison. But now cowbirds are adapted to livestock. The livestock are extremely widespread across the landscape.…This has led to significant declines in a number of songbird species."

Without active brown-headed cowbird population management, Fort Hood is no sanctuary for songbirds. However, Cornelius and his colleagues have taken action to try to reverse the decline.

"We began monitoring the black-capped vireo in 1987," said Cornelius. "After two years of observing parasitism above 90 percent and extremely poor productivity, we calculated statistically that the bird would become locally extinct within ten years without immediate intervention."

Fortunately in 1989, after intensive research on the ecology and management of brown-headed cowbirds, the team at Fort Hood

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Training Soldiers, Protecting Birds (continued)

began installing cowbird traps throughout the base where cows tend to concentrate. A mesh-covered trap about the size of a single-car garage lures cowbirds in with food, water and decoys through a narrow slit.

Once in, cowbirds cannot get out. Females are humanely dispatched; males and the few non-target birds are released unharmed.

The trapping effort has yielded solid results. In 2000, studies revealed that nest parasitism has been reduced to less than 10 percent basewide.

"Now," said Cornelius, "parasitism is low, productivity is high and Fort Hood is very likely serving as a source population for vireo production."

As far as the threat of continuing habitat loss, the Service's Costello emphasized that known endangered species habitat "must be protected." Service recovery plans for both species identify goals of attaining viable populations throughout the birds' ranges. The habitat on Fort Hood is critical to achieve the goals, for both the warbler and the vireo. Other critical areas include the Balcones Canyonlands National Wildlife Refuge, the Balcones Canyonlands Preserve managed by the city of Austin and Government Canyon State Natural Area.

"Fort Hood has followed the guidelines and requirements of the 1993 biological opinion and an updated 2000 opinion to a tee, and in the process has produced extraordinary research and management strategies that can be applied to warbler and vireo issues range-wide. The birds are benefitting from a very good working relationship we have with the garrison commander and the natural resource staff," said Costello.

Balancing its military mission with environmental stewardship, Fort Hood has set its sights on safeguarding and defending even more than the lives of the nation's human inhabitants.

Ben Ikenson, External Affairs, Albuquerque, New Mexico

Fish & Wildlife News Wants You!

Got a story to tell? An interesting photograph to share? *Fish & Wildlife News* wants to hear from you. It is easy to submit an article or photographs. Just e-mail the article to the editor, Nicholas Throckmorton, or send him the photographs at Public Affairs, U.S. Fish and Wildlife Service, Room 3353, 1849 C Street NW, Washington, D.C. 20240, e-mail: nicholas_throckmorton@fws.gov.

Here are some guidelines that will give you the best chance of seeing your work in print:

■ Keep the articles short, no more than 400 words in most cases. (Obviously not every story can be told that succinctly.)

■ Write in a breezy, conversational style. Use active verbs. For example, write "biologists restored the wetland," rather than "the wetland was restored by biologists."

■ Be yourself when you write. Express yourself the way you would if you were talking to a neighbor.

■ People are interested in people. Write about the people who are doing the work rather than the work itself.

■ Avoid jargon. If you have to mention something technical, explain it so a sixth grader could understand it.

■ Cite examples. If you have a wonderful program, go into detail about a particular project as an example of that program. It is often good to begin a story with an example, then talk about the program as a whole.

■ Humorous stories are welcome.

■ Make sure articles about your official duties have been approved by your supervisor. Share a copy with your Regional External Affairs office.

When you submit an article to *Fish & Wildlife News*, sending a good photograph with your story will greatly enhance your chance of having it published. Easy-to-understand charts or other kinds of graphics that illustrate the story also are helpful.

Here are some tips for photographers.

■ Before you trip that shutter, consider the photograph's composition. Go for action, and try to avoid shots of people shaking hands and smiling at ceremonies (so-called grip-and-grin shots) or of a speaker behind a podium.

■ Make sure the photograph is clear enough, with enough lighting, to reproduce well. Watch out for shadows. A shadow from the bill of a cap can obscure a person's face, especially when the photograph is reproduced.

■ Prints or slides (color or black-and-white) are best. Send photos that have action in them and illustrate your story. For example, if your story is about wetland restoration, you might send a photograph of Service employees in hip-waders restoring a wetland.

■ If scanning photos or using a digital camera, photo resolution should be no less than 300 dpi (dots per inch) at the final size the photo is used in the newsletter. When you send in your photos you will not know what size they will be in the newsletter, but our designer advises that to be on the safe side photos should have a resolution of 300 dpi when they're 30 picas (2 newsletter columns or about 5 1/4 inches) wide.

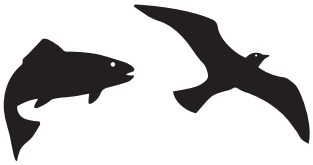
■ If you scan photos, do not adjust the size or otherwise try to touch them up. The designer will do that. Also, avoid sending images downloaded from the World Wide Web, as they are generally low resolution, poor quality, and will not reproduce well.

■ Send electronic photos as black and white images and in tiff file format. For images over 1 MB in file space, compress using a jpeg file format.

■ Do NOT embed digital images in WordPerfect documents. Send them as separate jpeg or tiff attachments.

■ On the back of the photo or in an e-mail message, identify all the people in the photograph from left to right, including their titles and duty stations. Be sure to identify who took the photograph.

Ecosystem Approach Initiatives



Refining the Ecosystem Approach in the Great Lakes

The 43 Service field stations that in 1994 formed the Great Lakes Basin Ecosystem Team became acutely aware of many challenges at their first meeting. The team held animated discussions on how to effectively focus their efforts and properly identify, address and prioritize many issues. The most basic question: what exactly was the team's role in the ecosystem?

"In evaluating the team's role in the Great Lakes, it was important to ensure that the team's efforts were 'value added' for the ecosystem over and above existing work that was already being accomplished by the Service's field stations," said David Stilwell, ecosystem team leader for the past year. "It also made sense to focus on issues that the team is uniquely qualified to address and to achieve landscape-level coordination and action."

The team completed existing projects and continued to serve as a point of coordination for other Great Lake issues while focusing the bulk of its efforts on lake sturgeon and Great Lakes islands protection, both of which met the team's "value added" criteria and already have momentum.

The two priority issues take full advantage of the broad range of team members' expertise. For example, lake sturgeon restoration is related to hydropower, fish passage, contaminants, sea lampreys, invasive species, habitat, hatcheries, outreach and law enforcement.

Lake sturgeon restoration and Great Lakes islands protection are important for other reasons. Chris Lowie, chair of the lake sturgeon committee, explained: "Our partners are also interested in lake sturgeon restoration. Subsequently, there are many opportunities for cooperation, collaboration, and fund leveraging."

Partners in lake sturgeon work include commercial anglers, tribal governments and states.

Great Lakes islands protection is timely in that the approximately 30,000 islands are experiencing increasing pressures from invasive species and development. Patti Meyers assembled the Islands Committee, with the larger team's first pilot Geographic Information Systems and Decision Support Systems project efforts directed at helping managers evaluate island habitats for possible conservation projects and/or future acquisitions.

This focus will allow the Great Lakes Basin Ecosystem Team to coordinate their efforts and continue to produce positive results for the natural and human resources found within the 95,000 square miles of this ecosystem.

At the Great Lakes Basin Ecosystem Team's April meeting in Milwaukee, the team explored how much data the Service needs to have in hand before approaching possible partners in restoration. The question does not relate only to the issue of islands, but to all natural resource issues within the basin. For the Great Lakes, the Islands Committee decided to consider the full team's input during its upcoming meeting, and meet with potential State partners later this year.

The value of focusing on lake sturgeon restoration was clearly seen when the team planned this season's lake sturgeon restoration field projects. Six fisheries field stations from Regions 3 and 5 shared their joint list of nineteen projects for the coming months with the full team. Projects included telemetry in the Detroit River (Michigan), assessment surveys with the Keweenaw Bay Indian Community (Wisconsin), spawning, transport and fish culture at Pittsford NFH (New York), collecting data from commercial fisher by-catch (Ontario), restoration feasibility studies in the Genesee River (New York), and coded wire-tagging fingerlings at Neosho NFH (Missouri).

Leslie TeWinkel, Division of Fisheries, Minniapolis, Minnesota

Joan Guilfoyle, External Affairs, Minniapolis, Minnesota

Exploring Our Past

Looking Back to See the Future

As with so many national wildlife refuges, the present-day management of Horicon National Wildlife Refuge has its roots in the lengthy, colorful history of the surrounding area, including the world-renowned Horicon Marsh.

Passing the time. *Horicon Marsh was a legendary hunting and fishing area between 1846 and 1869, as shown in this image from the Horicon NWR archives. FWS photo.*

Ancient marine life and death, a soft but impermeable layer of shale, springs, and glacial bulldozing all contributed to the physical creation of Horicon Marsh some 400 million years ago. Horicon Marsh today is considered an extinct glacial lake.

Just north of the Horicon Refuge, a projectile point more than 11,000 years old was found on the Oakfield ledge, evidence of the oldest known humans to live in Wisconsin.

European settlement left its mark on the marsh. In legendary numbers, wild birds, especially ducks, filled what was then known as Winnebago Marsh. Early settlers were drawn to the area for the ample running water from the Rock River, whose headwaters is Horicon Marsh. In 1846, settlers dammed the river to fill the marsh with water. It became a lake once again, and Winnebago Marsh was forever gone. Mats of vegetation loosened from the bottom of the marsh and floated down river and over the dam in Horicon.

The dam was removed in 1869 and natural water levels returned. By then, the area was already famous for duck hunting at a time when no hunting laws existed. Over the next four decades, market hunters slaughtered ducks by the thousands, sending them to restaurants in Milwaukee, Chicago and New York, hand-packed in wooden barrels with lush marsh hay.

Two exclusive hunting clubs formed on the marsh in 1883, and members eventually helped to save and restore the marsh.

In 1910, marsh hay from Horicon was also in great demand. A hundred carloads of it were shipped from nearby Mayville to Milwaukee, destined for the Schlitz brewery, where it was used in beer. Legend has it that those hundred carloads went into beer that Schlitz shipped to Teddy Roosevelt at San Juan Hill, where he was about to meet up with the Rough Riders.

In the meantime, people continued to exploit the marsh. In 1910, developers began digging a ditch on the marsh from north to south, 15 miles long, sixty feet wide and eight feet deep. Using a steam-powered, barge-mounted dredge, they also dug several lateral ditches. Experimental farming drew regional attention; investors planted potatoes, onions and carrots near the marsh.

Ditching and draining the marsh was not as successful as developers would have liked; in the end it destroyed original marsh vegetation, invited and increased weeds, and increased the risk and danger of fires. Peat fires destroyed remaining wild rice and cranberries, raging on and off until 1951 when the entire marsh was finally reflooded.

Grueling yet inspiring efforts to save and restore the marsh began in the 1920s, spearheaded by the Izaak Walton League and supported by many conservation organizations, especially the Wisconsin Federation of Women's Clubs. A passionate, eloquent speaker, the local Izaak Walton League chapter's Louis "Curly" Radke implored: "A heritage has been stolen, a sacred trust has been trampled underfoot, a beauty spot has been crucified."

At the end of one speech, Radke said, "There is no more to say—we fight not for the dollar, not for a name in the halls of fame, nor for the glory of man or state—but for the millions to come; the to-morrow of our boys and girls!"

In 1927, the Horicon Marsh Wildlife Refuge Bill provided $250,000 for the state to buy the land for a fur farm, state wildlife refuge and game preserve, and $10,000 for the Conservation Commission to build and operate another dam, which started operating in 1934 still functions today.

By 1941 the state managed enough land at Horicon Marsh to keep the water level behind the dam at 861.4 feet mean sea level. In 1941, the Fish and Wildlife Service began purchasing the northern two-thirds of the marsh with Federal Duck Stamp money to establish Horicon National Wildlife Refuge. The southern one-third of the marsh today is called the Horicon Marsh State Wildlife Area and is managed by the Wisconsin Department of Natural Resources.

Today, at 32,000 acres Horicon Marsh may be the largest ongoing wetland restoration in the United States. The two agencies—federal and state—aim to manage the marsh together as one wetland ecosystem for the benefit of wildlife and the enjoyment of people.

Molly Stoddard, Horicon NWR, Mayville, Wisconsin

Fish & Wildlife Honors

Long Island Sound Ecologist Honored
New York and Connecticut state agencies along with several federal agencies honored **Andrew Milliken**, Service senior coastal ecologist, for his contributions to the ecology of Long Island Sound and the New York Bight. The recognition came as the agencies involved in the Long Island Sound Study pledged last autumn to restore at least 2,000 acres of coastal habitat and 100 miles of riverine habitat by 2008. The Long Island Sound Study is one of 28 federal national estuary programs. Milliken's habitat restoration efforts will contribute to establishment of a Long Island Sound Reserve System, encompassing unique habitats of the estuary. The area includes the Stewart B. McKinney National Wildlife Refuge and several units of the Long Island refuge complex. It contains colonial waterbird habitat; threatened and endangered plants, birds and fish; upland grasslands; and Ramsar-designated wetlands of international importance in the lower Connecticut River.

Susquehanna Coordinator Named Conservationist of the Year
Chesapeake Bay Foundation presented its 2000 Conservationist of the Year award to the **Dick St. Pierre**, Susquehanna River coordinator for the past 18 years. The award recognizes superlative service and commitment to the restoration and protection of Chesapeake Bay. For more than 20 years, St. Pierre has worked to restore shad and other migratory fish to the Chesapeake watershed, beginning with his first Service job as a fishery biologist in 1978.

Employees, Partners Lauded for Contributions to Refuge System

Employees and volunteers working for the National Wildlife Refuge System were honored for their exceptional contributions to wildlife conservation in March. The National Wildlife Refuge Association annually sponsors awards for the Refuge Manager of the Year, Employee of the Year and Volunteer of the Year, and the National Fish and Wildlife Foundation joins the Refuge Association in sponsoring the Friends Group of the Year Award.

These awards are widely considered the most prestigious honors in the National Wildlife Refuge System. Winners were:

Paul Kroegel Award for Refuge Manager of the Year
Al Trout received the Paul Kroegel Award for the Refuge Manager of the Year. Trout has been the manager of Utah's Bear River Migratory Bird Refuge since 1989, and has helped the refuge re-emerge as habitat for a number of bird and mammal species after 6 years of flooding by the Great Salt Lake. From a rented office, and with no staff and little budget, Trout rallied hundreds of volunteers who raised $50,000 in cash, materials and services, and donated nearly 17,000 hours of labor to help rebuild and reopen the refuge.

In addition, Trout was instrumental in the establishment of the Friends of Bear River Refuge, which has helped construct boardwalks and overlooks on the refuge and recently committed to raising $1.5 million toward rebuilding the refuge's education and administrative offices.

This award is named for Paul Kroegel, the first refuge manager who, beginning in 1903, used his own boat and shotgun to keep bird poachers away from Florida's Pelican Island, the first national wildlife refuge.

Employee of the Year
The Refuge Employee of the Year award went to **David Jamiel**, who serves as the on-site ranger-in-charge at Two Ponds NWR, a subunit of Denver's Rocky Mountain Arsenal NWR in Arvada, Colorado.

Jamiel established an environmental education program at Two Ponds, hosting or coordinating some 6,000 visits by school and scout groups. He also recruited 69 volunteers— including 51 students—to provide environmental education and interpretation at Two Ponds, a 72-acre urban refuge with no buildings or administrative facilities.

Volunteer of the Year
The Refuge Association named **Harry Sanders** as Volunteer of the Year. Sanders, who will "retire" from his volunteer work at Don Edwards San Francisco Bay NWR this year, has contributed hundreds of hours managing a native plant nursery at the refuge. The nursery, where Sanders cultivates some 12,000 plants of 250 different native species, plays a key role in the Service's native habitat restoration activities in the San Francisco Bay area.

Friends Group of the Year
Friends of the Upper Mississippi River Refuges has been instrumental in securing funding and volunteer services for three refuges along the Mississippi River in Illinois, Iowa, Minnesota and Wisconsin. The group's four chapters have donated thousands of dollars in funding and volunteer hours, organizing activities such as tree and shrub plantings, an annual photography contest, and fishing activities for children and developmentally disabled adults.

The Friends of Upper Mississippi River Refuges has also served as a strong advocate for the resources of the refuges and the National Wildlife Refuge System as a whole, contacting Congressional members and other influential people and organizations on behalf of refuges.

Rachel F. Levin, Public Affairs, Washington, D.C.

Honored. *Service employees and volunteers were recognized for extraordinary contributions at a March ceremony. Left to right: David Jamiel; Service Director Marshall Jones; Molly Krival, president of the "Ding" Darling Wildlife Society; Al Trout; George Hoffman of the Friends of the Upper Mississippi River Refuges and his wife; Whitney Tilt of the National Fish and Wildlife Foundation (in rear); and Harry Sanders. DOI photo: Tami Heilemann.*

Transitions…Who's Coming and Going

Robert Muth is the new program director of the Upper Colorado River Recovery Program. Muth replaces Henry Maddux who is now supervisor of the Service's field office in Salt Lake City, Utah. The recovery program is a cooperative program involving federal and state agencies, environmental groups and water and power-user organizations in Colorado, Utah and Wyoming. Its purpose is to recover four species of endangered fish—the Colorado pikeminnow, razorback sucker, humpback chub and bonytail—while allowing development of water resources for human uses. Muth has been involved with the recovery program since its inception. Most recently, he served as instream flow/nonnative fishes coordinator for the program. Before that, Muth was senior staff fishery biologist for endangered species with the Salt Lake City field office.

Dr. Lynn Llewellyn, a senior social psychologist with the Division of Economics, retired from the Service after a 35-year career in public service. While with the Service, he served as assistant chief of the Division of Program Plans, and later as acting chief of the Division of Policy and Directives Management. The author of two books and numerous journal articles, Llewellyn was one of the pioneers in the areas of social impact assessment and the human dimensions of wildlife management.

Changes in Region 1 Law Enforcement

Benito Perez and **Paul Chang** will take over management of Service law enforcement activities in Region 1 this summer with the retirements of long time Assistant Regional Director for Law Enforcement **Dave McMullen** and Deputy ARD **Bill Zimmerman**. Perez, who most recently served as the agency's Deputy Assistant Director for Law Enforcement in Washington, D.C., is the new Assistant Regional Director for Law Enforcement in Portland. Chang, who was selected to fill the deputy position, worked as Special Assistant to the Service Deputy Director before becoming head of the Division of Law Enforcement's Branch of Investigation last fall.

McMullen's 28-year career with the Service included investigative assignments in Washington State and Oregon and management of enforcement efforts in the Midwest. Assistant Regional Director for Law Enforcement in Region 1 since 1985, McMullen ensured that the agency's investigative and inspection resources were used effectively to combat wildlife smuggling, unlawful commercialization of native species, and environmental contaminants. Under his leadership, Region 1 took the lead in pursuing complex and contentious cases involving the take of endangered species through habitat destruction while providing effective enforcement support for controversial recovery programs for gray wolves and sea otters.

McMullen also played a leading role in the creation of the National Fish and Wildlife Forensics Laboratory, promoted wildlife conservation by developing effective partnerships with hunting groups, and contributed to recent Service efforts to secure the budgetary resources needed to provide the nation a viable wildlife law enforcement program.

Zimmerman, a decorated Vietnam veteran who began his 30-year Service career with the refuge system in Utah, became a special agent in 1973. As a field investigator, he conducted a groundbreaking probe of pesticide misuse in California that prompted improved compliance with wildlife protection laws by the state's agro-chemical industry and was commended by the Secretary of the Interior for his efforts to protect salmon from unlawful commercial exploitation on the Klamath River. From 1980 to 1985, Zimmerman worked in the Division of Law Enforcement's Washington Office, where he helped coordinate three of the largest and most successful covert investigations ever undertaken by the agency. For the past 16 years, Zimmerman held the position of Deputy Assistant Regional Director for Law Enforcement, effectively managing and supervising Service enforcement programs in Regions 5 and 3 before moving to Region 1 in 1997.

In Memoriam…

Region 1 employee **Scott Stenquist** died January 23 at his Gresham, Oregon, home. He had struggled with the debilitating effects of diabetes for many years, and that disease may have been a contributing factor to his death. Stenquist's Service career stretched across the National Wildlife Refuge System, including posts at Fish Springs, Great Swamp, Tinicum, Upper Mississippi, Umatilla, and Ankeny refuges. Most recently, he worked as the Pacific region's integrated pest management coordinator. Donations in Stenquist's memory be made to The Nature Conservancy, 821 SE 14th Ave., Portland, OR 97214.

Service biologist **Betsy Whitehill** died of brain cancer on January 11 at her home in Fairbanks, Alaska. A biologist with the Yukon Flats National Wildlife Refuge, Whitehill helped thousands of young people stretch their artistic wings and become more aware of the beauty to be found in the wild. One of her legacies is the success of the Alaska Junior Duck Stamp Contest, the annual program in which kids learn to pay close attention to every last detail of birds in flight or at rest. She had worked with endless enthusiasm on the duck stamp contest since its inception six years ago.

Murphy "Murph" Glen Peterson, a heavy equipment operator at Alligator River National Wildlife Refuge in Manteo, North Carolina, was on the job, doing what he loved, when a road accident took his life. Murph and a summer intern were heading back to the refuge headquarters hauling a forklift on a flatbed trailer when Murph had to brake to avoid a collision. As he did so, the forklift broke loose from the chains that secured it and crushed the cab in which Murph and our intern were traveling. Murph was killed instantly; the intern is physically unharmed, but emotionally shaken. Murph's funeral was very moving; his wife, Eileen, reserved spaces in the church for Murph's Service family and asked that they show up in uniform so others would know who they were.

Fish & Wildlife…In Brief

Special Agent **Joseph Oliveros**, who worked in the Service's law enforcement office in Jacksonville, Florida, died April 21, after a long battle with cancer. Oliveros, whose 29-year Service career included positions at refuges in Florida and Georgia before he became a special agent in 1981, was recognized as an expert on enforcement issues involving migratory game bird hunting. His work in Louisiana helped waterfowl populations rebound from the drought-stricken years of the 1980s.

In 1994, Oliveros transferred to Florida, where he proved similarly successful in conducting investigations involving migratory birds, endangered species, and other protected wildlife. He organized special enforcement details to protect endangered manatees from boat collisions, a major cause of manatee deaths.

Oliveros also served as an instructor for more than 35 "basic schools" for new special agents and refuge officers. In this capacity, he helped mold more than half of the Service's current agent force as well as more than 440 refuge officers.

St. Marks NWR a Hit at Local Festival

In its first year participating in a local community celebration, St. Marks Refuge served up an eye-catching exhibit and sent more than 80 handmade pinecone birdfeeders home with the children and adults who made them. Visitors to the refuge's booth at the Wakulla County Chivaree also learned about educational and recreational opportunities at the refuge and many expressed interest in volunteering their time. Now in its fifth year, the chivaree celebrates the history of the county; early settlers would declare a trading day when a merchant ship arrived in the port town of St. Marks. Locals dubbed these days "chivarees" after the old world tradition of noisy community celebrations that followed a wedding. Today, the festival honors the traditions of the past with living history demonstrations such as quilt-making, cane syrup production and a Civil War reenactors' encampment.

Wildcat Wolves Translocated into Apache-Sitgreaves National Forest

The Mexican Gray Wolf Recovery Team released a trio of wolves into Arizona's Apache-Sitgreaves National Forest on March 17. The group consists of a former Pipestem Pack female and two Mule Pack males captured from the wild and held at Sevilleta National Wildlife Refuge's captive breeding facility prior to their re-release. The wolves are approximately two years old and were originally released with their respective packs into the Apache-Sitgreaves as pups during the spring of 1999. The recovery team considers the threesome a social group rather than a pack because a pair bonding between the female and either male was not evident. It is unknown whether the trio will remain together or exhibit dispersal from one another, behavior typical of their age. The recovery team has dubbed the group the Wildcat wolves. The addition of these wolves brings the number of free-ranging wolves to an estimated 30.

Wisconsin Butterfly Habitat Conservation Plan Gets a Boost

Efforts to conserve the Karner blue butterfly in Wisconsin will get a boost from the Service through a $1.47 million grant to the Wisconsin Department of Natural Resources. The funds will be used to acquire lands for the conservation and recovery of the endangered butterfly, complementing similar efforts being conducted by partners to the Wisconsin Statewide Habitat Conservation Plan for the Karner blue butterfly. There are 26 partners, including the Wisconsin DNR, which also administers the plan. Wisconsin is one of 10 states to receive funding last year through the Service's HCP Land Acquisition program, which awarded $68 million nationwide for land acquisition associated with approved habitat conservation plans. The program pays up to 75 percent of the cost of land acquisition in association with established HCPs. Non-federal partners contribute at least 25 percent.

Mechanical Failure Results in Loss of Endangered Fish

Simultaneous failure of three mechanical systems at the Upper Colorado River Endangered Fish Recovery Program's 24 Road Hatchery near Grand Junction, Colorado, on February 24 resulted in the loss of 30,000 1-year-old endangered razorback suckers. More than 51,000 razorback suckers at the hatchery remain unaffected. When a pump ceased to recirculate water properly in fish tanks, a pressure-sensing device did not activate an emergency backup oxygen system. In addition, an alarm to alert hatchery staff failed. Without oxygen, the fish perished. Located about three miles north of Grand Junction, the hatchery produces fish to stock in Colorado and Utah to help establish self-sustaining populations. The hatchery uses two separate water systems to protect against losing all fish in the unlikely event that one system fails. The recent system failure is the first in the hatchery's history. Since it opened in 1996, the hatchery has raised more than 200,000 razorback suckers to support efforts to recover this species, one of four endangered fish species in the Colorado River Basin.

The First Americans Play an Important Role in Our Conservation Mission

There are about 575 federally-recognized Indian tribes in the United States, with trust assets and ceded rights to more than one hundred million acres. These peoples have a historic tradition of environmental stewardship, and at the Fish and Wildlife Service we appreciate the important role they can play in the management of America's fauna and flora.

Since 1975, when Congress enacted the Indian Self-Determination and Education Assistance Act, tribal governments have been increasingly successful in reclaiming their traditional wildlife management roles. And although collaborative efforts between the tribes and the U.S. government are complicated by an undoubtedly shameful history, the Service has nonetheless, over the past quarter century, successfully nurtured a positive partnership that has garnered a certain degree of goodwill.

Our Native American liaisons in the Washington and regional offices have done much in this respect. In Washington, for instance, we now enjoy frequent communication with the Native American Fish and Wildlife Society.

In our busy day-to-day lives, however, many of us may sometimes forget or take for granted the partnership possibilities that exist between the Service and the Indian tribes. We share a common philosophy, articulated for the Service by our mission and from Congress, and long held by Native tribes in their cultures and religious beliefs. We can learn much from the rich traditions of these peoples.

A section of this issue of *Fish & Wildlife News* is dedicated to the important role Indian tribes play in the conservation of America's fish and wildlife. The pages within highlight only a few of our most successful partnerships with tribes. There are many others.

For example, together with the Chippewa and the Ottawa nations, we are part of a tribal-state-federal effort to manage the fisheries of the Great Lakes. Through the National Eagle Repository, we provide lawful access to feathers and other eagle parts that Indian people are entitled to for religious and traditional uses. And we coordinate with Indian organizations to provide internships for aspiring Native American resource managers.

This last effort is especially noteworthy, since it is the youth of today that must become the stewards of tomorrow. In an essay included in this issue, Cetan Wanbli (Eagle Hawk) Williams, shares his youthful perspective on the future relationship between Indian nations and the Service. In referring to the Wolf Reclamation Project, in which the Nez Perce Nation played an invaluable role, he writes: "The majestic wolf, that once bounded plentiful throughout this continent, was a symbolic representation for Indigenous people's relationships and was admired for the tribalism the wolves expressed in pack relations. The noble wolf has once again made relations possible."

By reaching out to Indian tribes, each of us can do more to strengthen our partnership and restore not only noble creatures, but also—at least to some small extent—the respect, dignity and honor that America's Native peoples so greatly deserve.

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