



U.S. Fish & Wildlife Service

Fish & Wildlife News

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In Memoriam: Richard Guadagno 2
Special Agents Serve as Air Marshals 4
Two New Units for Refuge System 8
Agencies Cooperate for Rare Parrot 9

Grant Program Forges "Pathways to Nature" 11
A Passion for Turtles 17
Interview: Spear Reflects on the Service 18
Refuge Combats Invasive Weeds 22

Racing to Save a Species on the Edge 24
Return of the River Natives 25
A Prologue to Pelican Island 31
Fish and Wildlife...In Brief 35



In Memoriam, Richard Guadagno



Rich Guadagno, 1962–2001

One of the many victims of the September 11, 2001, tragedy was from our Service family. Richard Guadagno, Refuge Manager of the Humboldt Bay National Wildlife Refuge, was one of the people on board the hijacked United Airlines flight 93 that crashed in Stony Creek Township, Pennsylvania.

Rich was 38 years old, and had worked as a biologist and manager in the Service for 17 years. He began his wildlife career as a temporary biologist with the New Jersey Fish and Game Department and at Great Swamp NWR near Newark Airport in New Jersey. His first permanent position with the Service came in 1987, when he was hired by Law Enforcement as a wildlife inspector, stationed in Philadelphia. In 1988, he was a refuge manager trainee at Great Swamp and attended the Basic Refuge Academy. Many of his academy classmates remember his passion for wildlife management.

Subsequent career moves brought Rich to Prime Hook NWR in Delaware, Supawna Meadows NWR in New Jersey, and Baskett Slough and Ankeny NWRs in Oregon. In 2000 Rich was proud to achieve his goal of becoming the project leader of a major

refuge, Humboldt Bay NWR, in Loleta, California. In addition to his many successes in addressing refuge management issues, he was also the consummate refuge law enforcement officer. He never lacked the courage to do the right thing.

Rich was a sincere and dedicated employee, highly regarded by all who knew him, and his parents are deeply proud of his chosen career with the Service. We carry his family, and Rich, in our thoughts and our hearts.

*Compiled by Nicholas Throckmorton,
Public Affairs, Washington, D.C.*

Rich Guadagno Memorial Conservation Fund

In an effort to pay tribute to and carry on Rich Guadagno's legacy—his dedication to wildlife management and passion for conservation—the National Fish and Wildlife Foundation has established the "Rich Guadagno Memorial Conservation Fund" (Rich's Fund). The Foundation will match all donations sent to the Rich's Fund and will establish a new conservation scholarship program to support outstanding students with an avid interest in wildlife biology as well as a special conservation projects fund to support efforts that protect wildlife and their habitat, and education projects. Donors may specify whether they would like their funds to go to the scholarship fund or the project fund, or be split between the two. All donors will receive acknowledgments for their contribution and a list of projects/ scholarships that were awarded with all the donated funds. The Foundation is grateful for this opportunity to contribute to continuing Rich's outstanding work and enthusiastic spirit through others.

Anyone interested in contributing to the fund can send their check to:

Rich Guadagno Memorial
Conservation Fund
National Fish and Wildlife Foundation
1120 Connecticut Ave., NW, Suite 900
Washington, D.C. 20036

Co-workers Share Thoughts About a Fallen Comrade

A Hero

Rich was a somewhat enigmatic individual.... A small-statured guy with super-human strength; a quiet person with deep convictions of right and wrong; outwardly, a low-key guy but with inner intensity.

The combination of these seemingly contradictory characteristics made Rich a strong, unassuming man who expected perfection from himself in all endeavors.

It's those positive traits that convince me and many others that Rich died doing the "right thing" aboard United Airline's hijacked Flight 93... with all his might and will power... to the bitter end.... earning him a posthumous title that he would shun but cherish.... HERO !

*Dick Nugent, Refuge Manager,
John Heinz NWR at Tinicum
Philadelphia, Pennsylvania*

A Shared Moment

I clearly remember the first time I "met" Rich Guadagno. It was winter and on this particular day I had the pleasure of notifying him that he had been selected as the new manager of the Humboldt Bay National Wildlife Refuge in northwestern California. He and I had played phone tag that day and had not connected. It was late in the evening, everyone had gone home for the day, and it was peaceful and quiet. I was straightening up my desk getting ready to go home for the night when I uncovered a message that Rich Guadagno had returned my phone call and that he could be reached by cell phone. A quick glance at my watch revealed that it was well past "quitting time" but I know how anxious people are about knowing whether they got the job or not so I gave him a call at the Baskett Slough NWR in Oregon.

Rich immediately answered the phone with a friendly "hello" but I was pleasantly surprised to hear thousands of Canada geese in the background making a ruckus as they returned to their night roost pond. After exchanging a little small talk we were ready to get down to the purpose of my call but the geese were making so much noise that I could not hear him and he could not hear me. He excused himself, walked over to his pickup truck, closed the door, and rolled up the window so we could talk. Immediately

the goose music stopped and he now had the hollow, empty, echo-like sound to his voice common of someone speaking from inside a vehicle. Before I could give him the good news I said, "Rich, go back outside, I need to hear more of that!" So he went back outside and held his cell phone up to the sky for a minute or so and I listened with my ears, my heart, and my soul. We stood side by side sharing a very special moment. While I was hundreds of miles away, I "saw" it all in my mind's eye—black clouds spitting rain, a raw wind that allowed geese to cup wings and glide effortlessly to the ground and a sun that peaked out under that clouds just before it dipped below the horizon painting the soggy Willamette Valley in hues of orange, and pink. I had seen and heard this symphony before at Bosque del Apache, Klamath, Skagit Flats, Sacramento, Sand Lake, the Platte River and Prime Hook. Upon hearing this music, my memory carried me back to all those wonderful places where I had seen, heard and felt the magic of goose music.

As I stood next to Rich savoring the moment vicariously through the cell phone I knew exactly what he was doing. It was the end of the day and he was out on "his" refuge watching over "his" birds and seeing how they were responding to his latest handiwork, whether it be a new pond, a moist soil unit or a prescribed burn that was just greening up. I had done it myself many times. These are private moments that usually come very early in the morning or late in the evening when no one else is around. They are "perks" that come with the job. They are priceless and under the right conditions your brain will store those sights, sounds, smells and emotions of the moment for a lifetime of reflective enjoyment—like a video tape that you can replay whenever you want.

The rest is history. Rich said yes and came to Humboldt Bay Refuge, ready to tackle the world. In the short time he was there he accomplished much and he made his mark. He was a valued employee and friend who I will never forget. He will be missed by those who knew him and worked with him. The Service has lost one of its very best.

*David Paullin, Refuge Supervisor,
Portland, Oregon*

Debris May Be Artificial Refuge

Large pieces of concrete and steel from the ruins of the World Trade Center could become artificial reefs off the south shore of Long Island. Over time the debris would become living reefs supporting the circle of life on the sandy ocean bottom. Fish, crustaceans and shellfish would find homes among the wreckage. The fishing public, both commercial and recreational, would benefit from the likely increase in fish and crustacean numbers.

At least a dozen reefs are approved but remain incomplete. The Corps of Engineers and the State of New York recognized the potential of using the debris for the reefs, many of which had been authorized to accept steel and concrete. The Service's Long Island Field Office in Islip is coordinating with the Corps of Engineers, National Marine Fisheries Service, Environmental Protection Agency and New York State Department of Environmental Conservation in this effort. Although most of the debris will likely be recycled, the artificial reefs remain a viable alternative for some of the material.

The Long Island Field Office worked with the Corps to allow emergency dredging for barge access to the Manhattan shoreline. The barges are transporting debris to the Fresh Kills Landfill on Staten Island. The normal procedure would have required analysis of the potential dredge material. In response to the immediate need, the dredged material was placed in an underwater pit in Newark Bay and will be capped.

Preserving Evidence

The Migratory Birds permit office in Region 5 issued a depredation permit to the chief of detectives, New York City Police Department, allowing the department to conduct an integrated lethal and non-lethal wildlife damage program to control gulls and vultures at the Fresh Kills Landfill on Staten Island. The purpose of the permit is to preserve evidence as the ruins of the World Trade Center are transported to the landfill and sorted. Staff from the Port Authority and USDA's Wildlife Services will be assisting with bird control. The Migratory Bird office issued the permit the same day it was requested as a response to the emergency.



Service employees volunteer time to help in World Trade Center rescue effort. *Region 5 law enforcement staff worked at the World Trade Center site on Saturday, September 15. They handled security in the morning and passed buckets of debris in the afternoon. Left to right, rear: Bill Donato, Randy Cottrell and Sam Librandi, Valley Stream Law Enforcement Office; Bill Anderson, Harrisburg; Tara Donn, Newark. Front: Tom Tidwell and Marilee Brown, Newark. Not pictured: John Meehan, Newark. FWS photo: John Meehan, USFWS.*

Special Agents Serve as Federal Air Marshals

When the United States strengthened its efforts to safeguard the American people after the unprecedented September 11 terrorist attacks, Fish and Wildlife Service law enforcement officers were among those who stepped up to the challenge.

A group of Service special agents, who normally spend their time investigating wildlife crimes, went to work in October as temporary federal air marshals. Recruited from every part of the country, they joined hundreds of law enforcement officers from an array of federal agencies who will be safeguarding travelers aboard U.S. passenger planes while the Federal Aviation Administration hires and trains an expanded force of permanent air marshals.

"Being a sky marshal seemed the best way I could assist in restoring the confidence of the American people and keeping the American dream from falling into an abyss," said a special agent who volunteered from the Service. "This is the greatest nation on the planet because of the freedoms we have, and we cannot live in fear."

Plans call for this group of agents to serve as air marshals for a six-month period. Given the importance of ensuring public safety in the wake of the terrorist attacks, the Fish and Wildlife Service and other federal law enforcement agencies may be asked in the future to provide additional groups of officers to help secure the skies for air travelers.

"Although our conservation work will continue, our mission has now been expanded, during this time of crisis, to ensure the safety of the American people in the air," said Service Acting Director Marshall Jones. He met with some of the Service special agents who volunteered for the air marshal detail just before they began a three-day training program at the FAA training center in New Jersey.

The agents were dispatched to their assigned airports immediately after completing the course, which emphasized firearms skills and the special challenges of dealing with hijackers.

"Our agents and the other officers who've volunteered for this important work know that they will be away from home for extended periods; they'll have to pack light and travel long," said Senior Special Agent James Gale, who helped coordinate Service participation in the air marshal program.

"The most basic role of government, the protection of its citizens, is at stake..."

"The most basic role of government, the protection of its citizens, is at stake," Acting Director Jones said. "We're proud that our Fish and Wildlife special agents and refuge officers are willing to make the sacrifices needed to restore confidence by the air-traveling public and to protect key Interior Department facilities."

Even before the call for air marshals went out, Service enforcement personnel were already working to help the nation respond to the tragic terrorist attacks on the World Trade Center and Pentagon. Teams of special agents and refuge officers are putting in week-long details providing around-the-clock security at the Main Interior Building in Washington, D.C., and other locations. Agents in the Northeast are serving on a multi-agency federal task force assigned to improve security for air travelers at Logan International Airport in Boston, where the two flights that struck the Trade Center towers originated.

Service Law Enforcement offices in New York, New Jersey, and Pennsylvania were among the many volunteers who contributed to rescue and recovery efforts at "ground zero" in lower Manhattan. Asked first to help guard the perimeter of the World Trade Center site, they later entered the collapse area to relieve firefighters on the bucket brigade that was set up to remove rubble and other debris. Agents were officially detailed to an evidence recovery team assigned to comb through material brought from the site to the Staten Island landfill, looking for anything that could support the FBI's investigation of the terrorists or help identify those lost in the attacks (*see article and photo on page 3*).

"While we will continue to hold the line for wildlife, we have no more important job at this time than to do whatever we can to protect the American people and help the nation recover from this tragedy," Jones said.

The air marshal details and other special security assignments come at a time when the number of experienced Service special agents has dropped significantly. The agency had just begun a multi-year effort to rebuild its enforcement capacity, hiring new agents this past summer for the first time since 1998. The Service has also proposed to bolster the number of full-time Refuge officers as part of the FY2002 budget now being considered by Congress.

"Our 'thin green line' will be stretched a little," Jones acknowledged. "However, we are taking steps to redeploy our agents around the country when necessary to ensure that this country's wildlife continues to be protected. We know we can count on the officers who remain on the wildlife 'beat' to fill the gap. Our longstanding partnerships with state and tribal enforcement agencies will be more important than ever as we continue our efforts to conserve wildlife resources."

Sandra Cleva, Division of Law Enforcement, Arlington, Virginia

State Executives, Secretary Norton Meet at NCTC

Against the backdrop of national concern over terrorism and its effect on American society, 45 heads of state departments of natural resources met at the National Conservation Training Center this fall for a first-of-its-kind gathering, organized by The Conservation Fund. Participants said the meeting fit the tenor of the times and signaled a new approach to resource management among the federal government and the states.

Attendees at the October 10–12 “Natural Resources Leadership Summit” were joined by Secretary of the Interior Gale Norton. The historic meeting marked the first time that resource executives with cabinet rank in state governments convened to address resource issues common to both federal and state agencies. Although state fish and wildlife directors, state foresters, and state parks directors have routinely met for years, the summit at NCTC was the first such gathering among executives of broader natural resources agencies. The meeting was funded by a grant from the Richard King Mellon Foundation.

Service acting Director Marshall Jones welcomed the group to NCTC. Fran Mainella, director of the National Park Service, and James Connaughton, chairman of the Council on Environmental Quality, also addressed the group. Steve Williams, the President’s nominee to be Director of the Service, participated in his capacity as Secretary of Kansas Parks and Wildlife.

Wow! Children look at a black bear skin at the Choctaw Family Celebration. The Jackson, Mississippi, Ecological Services Field Office shared a booth at the April event with the Choctaw Tribe Environmental Resources organization, bringing animal skins and mounts, and Service information, to the more than 4,500 students and 2,000 adults who attended the event. Educational items earning the most attention and appreciation at the Service booth were the black bear skin rug, an alligator skull, a wild boar skull and a young corn snake. The snake, “Mr. Maze,” is used for educational purposes to help teach people facts about snakes, dispel myths, and give people an opportunity to touch a live snake. FWS photo.



NCTC hosts stately crowd. Secretary Gale Norton poses with chief executive officers of state Department of Natural Resources. FWS photo.

“This is the first time we’ve had senior officials from environment and natural resource conservation organizations together, and it’s a wonderful precedent,” said Brian Griffin, Oklahoma’s secretary of environment.

Secretary Norton spent much of her day and evening at the Shepherdstown campus in dialogue with the state officials. She later said, “Hopefully this meeting is the first of an ongoing effort to engage the states in setting the agenda for natural resources conservation in this country.” In a show of her support for the continuation of such dialogue, Norton offered the NCTC facility

annually “as an inspirational place to hold a meeting as guests of the Department of the Interior.”

Norton also visited with NCTC staff to express her appreciation for NCTC’s efforts to bring people from all sectors of society together in a learning environment. She updated staff on Senate confirmation proceedings for Steve Williams, Fish and Wildlife Service director-nominee. Williams attended the October meeting as the representative of Kansas.

“This historic gathering in these trying and difficult times is proof of our determination to conserve the natural resources we value as Americans,” said Patrick Noonan, chairman of The Conservation Fund. “It is also clear evidence that the leadership on natural resource issues will come from the states. Their time has come.”

The state secretaries expect to begin by concentrating their efforts on pending legislation before the Congress in the agriculture, natural resources, and transportation areas, as well as by organizing themselves into a representative body to consult regularly with the federal government.

David Klinger, National Conservation Training Center, Shepherdstown, West Virginia



Bulking Up Our Mussels



Flex your mussels. Todd Turner, manager at Genoa NFH (lying down), Roger Gordon, assistant manager at Genoa (standing), and Kurt Welke, a Wisconsin Department of Natural Resources fisheries biologist (diver), place juvenile mussels in the lower Wisconsin River. FWS photo.

On a rainy day in late May, biologists armed with syringes, buckets, microscopes, cameras and monitors crowded together in a small shack at Genoa National Fish Hatchery, near La Crosse, Wisconsin. Among them were fishery biologists from the Service, the Iowa, Minnesota and Wisconsin departments of natural resources, and the U.S. Geological Survey.

These interagency partners set out to help save a small, native freshwater mussel called the Higgins' eye pearlymussel. Listed as endangered in 1976, the mussel is on the brink of extinction.

Higgins' eye were never abundant, but the effects of lock and dam construction on the Mississippi River in the 1930s caused the mussel to fall on hard times, like many other species of mussels which prefer the habitat of a large, free-flowing river. The situation became worse when the exotic zebra mussel invaded the river in the early 1990s, competing with native mussels for habitat and smothering them by colonizing on their shells.

Biologists plan to restock tens of thousands of young Higgins' eye mussels in habitats safe from the threat of zebra mussels. This joint project, which was funded in part by the

U.S. Army Corps of Engineers, is just one of several efforts to help recover this highly endangered species.

"The goal of this project is to take adult female Higgins eye mussels, collect their young, and raise them in the hatchery," said Pam Thiel, project leader of the Service's LaCrosse Fishery Resources Office. "We will then release them in areas where they should be safe from the threat of zebra mussels."

Fishery biologists from Wisconsin and Minnesota DNRs removed 19 pregnant female Higgins eye mussels from the St. Croix River near Hudson, Wisconsin, temporarily transferring them to a special mussel facility at Genoa NFH. At the hatchery, biologists collected the microscopic larvae, or glochidia, from the female Higgins' eyes.

In the wild, female mussels advertise the maturity of their glochidia by waving their mantle, a flap of tissue with the appearance of a minnow, luring fish to prey on the mantle. When a fish strikes for the mantle, the female Higgins' eye ejects a cloud of glochidia which clamp on to the gills of host fish where they spend the next 3 to 4 weeks developing. The fish are not affected by the presence of the glochidia.

The team of biologists formed an assembly line to remove the microscopic glochidia and infect the host fish. Dr. Becky Lasee of the La Crosse Fish Health Center carefully opened the mussels and flushed the swollen brood chamber of the gill with a syringe full of water. Next, biologists examined the gills of the infected fish to ensure they carried an acceptable number of glochidia.

Biologists successfully infected nearly 4,000 host fish using this technique. They then placed the host fish in aquariums or raceways while the glochidia developed. Host fish were later released into the river or placed in underwater cages where they were held until the glochidia dropped into the streambed. In 3 to 4 weeks the glochidia matured into tiny mussels and were collected and transferred to a hatchery where they matured enough to be transplanted.

Ruth Nissen, Wisconsin Department of Natural Resources

Air Force Sergeant on a Mission: Put Surplus Equipment to Work



Excessed—but not unused. Lloyd French has obtained attained \$14 million in equipment for the Service, including this motorboat. FWS photo.

The Service is helped by a lot of unsung heroes. Whether they are employees or volunteers, their endeavors rarely receive the acknowledgment and recognition matching the magnitude of their efforts and the positive effects they have on fish and wildlife resources. Lloyd French is one of those heroes, and his contributions were recognized with an award several months ago from the Northeast region.

French, a chief master sergeant in the U.S. Air Force, is a volunteer with a unique focus—he obtains surplus government property for the Service. Even though he is not a Service employee, his efforts complement his family's tradition of conserving wildlife habitat for current and future generations.

"I come from a family that grew up on refuges," said French, an avid wildlife fan whose father, brother and sister all have worked for the Service. "Helping Service facilities get the equipment they need to best manage their resources and making sure tax dollars are being used effectively are important to me."

French, whose brother Andy is the chief of Realty for the Northeast region, also enjoys the satisfaction his volunteering gives him.

"It gives me a good feeling to be able to obtain equipment that would otherwise be beyond a station's current budget," he said.

Service Takes an Unconventional Approach to Conserving Bog Turtle Habitat

Since 1994, French has obtained more than \$14 million in equipment for the Service. His acquisitions have gone to every region and include dump trucks, humvees, generators and medical equipment for wildlife. Recently, he obtained a digital camera that he uses to send pictures of requested equipment as it becomes available. Partway through fiscal year 2001, French had already obtained more than \$5.1 million in excess equipment, and his efforts were still going strong. He volunteers an average of more than 10 hours each week searching for items the Service might use.

"I keep a wish list of items that different refuges and other stations want," he said. "If that type of equipment is being excessed, I locate it, and make the connections needed to begin the transfer. Any Service station is welcome to contact me with any questions or requests."

The Service even provides French with his own e-mail address. <lloyd_french@fws.gov>, to facilitate his work.

As with so many other successful efforts, French's volunteer career in locating surplus government equipment began with a casual observation. While driving by Patrick Air Force Base in Florida with his brother Andy, a refuge manager at the time, Lloyd French spotted a bulldozer that was being excessed.

"The refuge sure could use one of those," said his brother.

Lloyd French followed up to see if the equipment was available and thereby began his career in procuring used and surplus items.

Despite the common stigma that most used government equipment is in bad condition, French knows better from experience.

"Much of the equipment being excessed, especially by the military, is in good condition—compatibility issues often make the items obsolete before their usefulness in civilian employ expires," he said.

Edward Henry, External Affairs, Hadley, Massachusetts



Really moving. *The bog turtle is listed as threatened for a number of reasons: habitat degradation, loss of habitat and illegal collection. FWS photo.*

Chesapeake Bay Field Office biologist Bill Schultz is protecting bog turtles—one tree at a time. But he is not saving the trees, he's getting rid of them.

As a biologist in the Partners for Fish and Wildlife program, Schultz usually creates habitat for the threatened bog turtle by planting trees and other vegetation. But invasive vegetation is swallowing up last remnants of bog turtle habitat in northern Carroll, Cecil, Baltimore and Harford counties in Maryland.

The Chesapeake Bay Field Office's Partners division is teaming up with the Maryland Department of Natural Resources and the National Fish and Wildlife Foundation to control invasive plants and conserve Maryland's bog turtle population. Through this vegetation control project, the Service will target management efforts with the best potential for providing future habitat for this species.

The bog turtle is one of North America's smallest turtles, measuring only 3 to 4½ inches in length. It is recognizable by its light brown-to-ebony shell and the bright orange, yellow or red blotch found on each side of its head. Bog turtles are sparsely distributed from New England to northern Georgia.

Wetland grasses and sedges provide ideal habitat for the bog turtle. Unfortunately, red maple and multiflora rose are invading

bog turtle habitat, shading the grasses and sedges and drying out the wetlands, providing a seed bed for more red maple and multiflora rose. These invasive species absorb more water than the existing emergent vegetation, causing the wetlands to favor regeneration of red maple and multiflora rose.

Once red maple and multiflora rose dominate a wetland, bog turtles must relocate. Unfortunately, most bog turtle wetlands in Maryland are cut off from other wetlands. There are no safe corridors by which these tiny turtles can relocate. A turtle may get crushed by a vehicle while crossing a road, killed by a raccoon or dog, or may starve to death while searching for suitable habitat.

The Maryland Department of Natural Resources conducted two bog turtle surveys in 1976 and 1992–93. In 1976, 177 wetlands were inhabited by bog turtles. By 1993, only 84 wetlands potentially contained viable populations of bog turtles, a 53 percent reduction. With no aggressive invasive vegetation control program, biologists predict fewer than 42 wetlands will contain viable bog turtle populations by 2010, potentially pushing the bog turtle to endangered status.

Biologists will restore a minimum of six wetlands a year for ten years by applying herbicides to red maple and multiflora rose. To control red maples, biologists inject herbicide capsules into the trunks of trees on the perimeter of the wetlands and herbicides approved for use in water for maples growing in the wetlands.

Survival surveys will be conducted during the first year. Then biologists will re-inject or re-spray all surviving maples. A second survey will be conducted the subsequent year, and all living trees will be re-injected again. After 95 percent of the red maple has been completely eliminated from the wetland, surveys will be conducted at three to four-year intervals.

By removing nearly all of the red maples trees and saplings and multiflora rose bushes, emergent wetland vegetation can recolonize each site.

Kathy Reshetiloff, Ecological Services, Annapolis, Maryland

Two Units Add Valuable Habitat to Refuge System



New tropical island paradise. Prime turtle nesting beaches at Vieques NWR. FWS photo: Tom R. MacKenzie.

New Puerto Rican Refuge Offers Splendid Habitat, Stunning Vistas

On May 1, the Service added a portion of the island of Vieques, Puerto Rico, to the National Wildlife Refuge System. Vieques NWR, on the opposite side of the island from the Navy bombing range, consists of 3,100 acres of beaches, coastal lagoons, mangrove wetlands and upland forested areas. The surrounding marine environment contains coral reefs and seagrass beds as well as unique bio-luminescent bays that glow eerily in the dark.

The refuge and its surrounding waters are home to at least four plants and 10 animals that are endangered, including sea turtles, brown pelicans and manatees. In addition to its ecological value, the new refuge includes historical and archeological sites.

"The western part of Vieques contains some of the best examples of sub-tropical forest in the Caribbean," said Sam D. Hamilton, Southeast regional director. "The area contains unique resources that deserve to be protected for the enjoyment of the people of Vieques and all Americans. We are looking forward to working with the citizens of Vieques to protect these important environmental resources."

*Tom MacKenzie, External Affairs,
Atlanta, Georgia*



New temperate muddy island paradise. Michigan's Mud Island. FWS photo.

Detroit River's Mud Island Added to System Mud Island, a 21-acre island located in the Detroit River near Ecorse, Michigan, is one of the latest additions to the National Wildlife Refuge System. Donated to the Service by the National Steel Corporation, Mud Island will be added to the adjacent 304-acre Wyandotte NWR, managed by the staff of the Shiawassee NWR in Saginaw, Michigan.

Midwest Regional Director Bill Hartwig welcomed the addition of the island to the refuge system.

"Every acre of the National Wildlife Refuge System is important to wildlife," Hartwig said. "Protecting these places is a job the Service can't do alone, so it was very heartening to see a company like National Steel and our other partners work together to make the Mud Island donation a reality."

Hartwig applauded the efforts of National Steel, Congressman John Dingell of Michigan, American Heritage River Initiative representative John Hartig, and other local partners for their support of the refuge addition.

*Doug Spencer, Shiawassee NWR,
Saginaw, Michigan*

Realty Crew Tackles Kodiak NWR Boundary Surveys



Tough crew. Living on a boat helped the team get its work done more quickly and safely. FWS photo.

This spring, crews from several regional Realty offices converged on Kodiak Island, Alaska, to perform boundary surveys on some recently acquired lands for Kodiak NWR. At the invitation of Steve Shuck, chief of the Realty Operations Branch in Anchorage, surveyors Gary Kratz from Region 3, Thomas Geser and Jesse Weigand from Region 5, and Mike Young from Region 4 undertook the first refuge boundary survey conducted in Region 7 by Service employees.

Funded by part of the court settlement that followed the 1989 Exxon Valdez oil spill, the survey proved demanding because of the remoteness of the parcels, topographic conditions, the weather, unusual living arrangements, and local wildlife—including, of course, Kodiak brown bears. Steve Kopach, chief land surveyor from refuge system headquarters, joined the crews and was quickly put to work for his one-week visit to the four week project.

The survey area had no road access and was miles from the nearest village of 150 people. Hence, scheduling the survey was critical. Work had to be performed before the spring when the bears become active. The crews lived on the Service vessel the *M/V Curlew*, a 65-foot boat captained by Joe Spiccianni from the Ecological Services office in Juneau. Living on a boat created an interesting sidelight to the intricacies of the

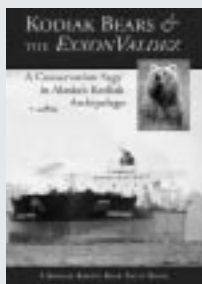
Environmental Program Encourages Stewardship

project—yet the surveyors were able to live in relative comfort and safety at the work site, and minimize floatplane and boat transportation delays.

The success of the Kodiak project was a result of the excellent working relationship of the survey crews and support staff and the full utilization of Global Positioning System technology.

Steve Kopach, Division of Realty, Arlington, Virginia

Book Spotlights Kodiak NWR During Time of Crisis, Opportunity



In this new book, *Kodiak Bears & the Exxon Valdez*, naturalist and bear expert Tim Richardson explains how \$275 million of the Exxon Valdez oil spill settlement and other funds were

used to purchase land and conservation easements for Kodiak NWR. The book also describes how Service personnel responded to the Exxon Valdez crisis and its aftermath, the largest purchase of refuge inholdings in the history of the refuge system.

Former Kodiak Refuge Manager Jay Bellinger authored the book's first chapter, relating his experience as the lead federal coordinator for the southern half of the oil spill.

For more information about the trust or to order the book, contact: Kodiak Brown Bear Trust
11930 Circle Dr.
Anchorage, AK 99516
<<http://www.kbbt.org>>

The Division of Engineering is leading the effort to move the Service's environmental program beyond its current compliance mode. The existing environmental program will be converted into a more proactive, well-planned program through an Environmental Management System. In recent years, these systems have been successful in private industry and this approach is now being used in the federal government.

An Environmental Management System is a documented approach to ensure an organization's environmental activities are properly managed. It requires written procedures at the facility level to guide compliance activities such as handling and disposal of hazardous materials and hazardous wastes; recycling and purchasing green products; pollution prevention and other environmental activities.

The system will assist field stations with effective planning and training; standard documentation; more environmentally friendly products with less reliance on toxic chemicals; and renewed emphasis on "greening" and pollution prevention mandates.

Guiding principles of an EMS include management commitment, compliance assurance, pollution prevention, enabling systems, performance, accountability and continuous improvement. The system will document and study the Service's existing systems and improve them, affecting every Service employee who has an impact on the environment.

Preparation for the Environmental Management System began in June with interviews with management to solicit views on the existing compliance program and expectations for the system. Engineering will prepare a report identifying and prioritizing problem areas with recommendations for improvements at each organizational level. Pilot EMS improvement projects will be conducted at selected facilities between October 2001 and April 2002.

Billy Umsted, Division of Engineering, Denver, Colorado

Frank Cockrell, Division of Engineering, Arlington, Virginia

Agencies Cooperate to Re-establish Rare Parrot



Feeding frenzy. Food and water are provided for parrots as a transition to finding water sources and food stocks in the forest. FWS photo: Tom MacKenzie.

A hike through a rain forest is always better in the dark.

You can hear the bird-like call of the coqui frog echoing off the trees while vines slip past your head lamp. Sweat glides down your forehead as you poise ready to capture a single moment on videotape. You follow the gazelle-like darkened figure six feet in front of you, trying to avoid the slippery roots and stream rivulets. Take care on those mudholes that can suck your boots right off your feet.

No, this isn't a scene from *National Geographic Explorer*...but it could be.

This spring, the Service participated in the second release of captive-reared Puerto Rican parrots. About the same time last year, ten young parrots flew to freedom in the pre-dawn forest shadows in this same isolated, difficult-to-reach spot in the Caribbean National Forest. Since then, nearly half of these endangered birds have fallen victim to the hunting skills of red tailed hawks.

Continued on page 10

Agencies Re-establish Rare Parrot (continued)

But biologists are not giving up. This year, 16 of these stunningly beautiful birds soared into the 40- to 50-foot tall trees of "El Yunque," as the forest is known. It is the only tropical forest in America's National Forest System, with rugged terrain climbing from almost sea level to about 3,500 feet, drenched with up to 200 inches of rain every year.

The newly-released birds join about 40 wild parrots in the Caribbean National Forest. Another 126 parrots, bred to augment the wild population, live in two aviaries on Puerto Rico.

Once there were thousands—possibly millions—of Puerto Rican parrots in the lush and plentiful tropical forests of Puerto Rico. Hunting, trapping and habitat loss nearly wiped them off the face of the island. The Service, Puerto Rico Department of Natural and Environmental Resources, the U.S. Forest Service and many other partners have been working for more than 30 years to recover the only endemic parrot of Puerto Rico.

The agencies expect to establish a second population of Puerto Rican parrots in a few years in the unique Karst region in the central part of Puerto Rico (future site of a national wildlife refuge), which will provide additional protection in the event of a catastrophic hurricane. For more information about the Puerto Rican parrot reintroduction program, log onto the Web and visit <<http://southeast.fws.gov/prparrot/index.html>>.

The parrots must survive not only natural predators but also human thieves. On April 22, someone broke into the aviary at the Caribbean National Forest, stealing an undisclosed number of parrots. A \$2,500 reward is being offered for information leading to the conviction of those involved in the theft.

*Tom MacKenzie, External Affairs,
Atlanta, Georgia*

Volunteers Help Bighorn Sheep in the Desert

Early on a cold Sunday morning in March, 35 people dressed in camouflage and outdoor gear gathered at the U.S. Air Force's Indian Springs Air Base 45 miles northwest of Las Vegas. They were on a special mission, but not one associated with espionage or air warfare.

They were members of the Fraternity of the Desert Bighorn preparing to install a piece of equipment vital to a new population of desert bighorn sheep. The fraternity is a group of local volunteers who share a common interest in the well-being of this endangered species, which is the official Nevada state mammal and the reason the Desert National Wildlife Range was established in 1936.

At 1.6 million acres, Desert NWR is the largest refuge in the conterminous United States. The western half of the range is overlapped by the U.S. Air Force's Nellis Test and Training Range, the Department of Defense's premier training facility for aerial warfare.

The logistics and preparation for this "mission" in the Spotted Mountains, one of six mountain ranges that make up the Desert Range, were as meticulous as any military sortie. The volunteers took a short helicopter ride to the work site on a 4,000-foot-high mountain saddle, where they assembled a 45-foot by 70-foot sheet metal apron, several hundred feet of plastic pipe, four plastic holding tanks with a 7,200-gallon capacity, a small metal trough to provide access to the water....and one bluebird house.

The caravan of civilian pickups carefully threaded its way around an errant bomb crater in the middle of the access road. The fraternity members worked with precision because the Air Force had only cleared time on this bombing range until mid-afternoon.

In less than six hours the volunteers assembled more than six tons of sheet metal, plastic pipe, concrete and steel—a complete structure that will capture the infrequent but intense rainfall and keep the precious liquid available for the sheep and other creatures that travel this starkly beautiful landscape. Bringing in the material was only part of the job. Generators, welders, cement, 55-gallon drums of water, even a cement mixer, were flown in and out that day.



Rain catcher. A 45-foot by 70-foot steel apron feeds infrequent rains to these four 1,800-gallon tanks. Rock will be cemented around the water trough (center) to bring it up to ground level. FWS photo: Dick Birger.

Ed Prybyl has been involved with the fraternity of the Desert Bighorn since 1965. In that time the fraternity has built 107 water developments for sheep all over Nevada.

"Very rewarding" is how Prybyl characterizes the work, "seeing ewes bring baby lambs into drink is really something."

Banquets and direct donations to the 275-member group generate funds for these on-the-ground projects, which can be expensive. Built entirely with donated labor and some free material, this single guzzler cost more than \$25,000, almost half of which was helicopter time to sling in materials and transport workers.

Forty sheep have been transplanted to these mountains in the past eight years. There is a good forage base but as in so much of Desert NWR, the scarcity of water limits use. Prior to the turn of the 20th century, sheep in the 50,000 acres that make up the Spotted Mountains watered at Cactus, Mercury and Indian springs. Now these are all eliminated from use by fences, highways, human and military activity. Life in the Mojave ecosystem is chancy at best. It will take at least one full year of the "normal" four inches per year precipitation just to fill the holding tanks of this new water development.

Dick Birger, Desert National Wildlife Range, Las Vegas, Nevada

Grant Program Forges “Pathways to Nature”

The gazebo behind the Santa Ana National Wildlife Refuge visitor's center transports birders into another world.

Perched at the edge of a lagoon, the platform gives visitors a wide view of a South Texas wetland. Rare least grebes sometimes glide through the quiet waters like little U-boats, their red eyes glowing in the sunlight.

Wait long enough, and a green kingfisher will probably dart by. With patience, you might even complete the “kingfisher hat trick” by adding the giant ringed and the more common belted—no mean feat this side of Mexico. Flotillas of fulvous and black-bellied whistling ducks sail by or perch on the nest boxes that spring from the marsh.

Wildlife is everywhere, but without the viewing platform, most visitors would catch only occasional glimpses of the fauna. As all refuge staff know, conserving wildlife is just the first step. Making it accessible to the public in a natural, unobtrusive way is just as important.

Providing matching grants for creating and enhancing birding and wildlife watching opportunities like this is one at Santa Ana is a key goal of the Pathways To Nature Conservation Fund, a new partnership between Wild Birds Unlimited, Inc., and the National Fish and Wildlife Foundation. The Pathways To Nature Conservation Fund also funds environmental education displays and programs. Grants are awarded through a competitive process to significant nature tourism destinations across the United States and Canada.

The National Wildlife Refuge System has been a big winner in the program, with grants awarded to five refuges. The Pathways To Nature Conservation Fund is the brainchild of Jim Carpenter, founder and CEO of Wild Birds Unlimited, Inc., and the owners of the more than 270 franchise stores across the United States and Canada.

“Our company mission is ‘We bring people and nature together,’” Carpenter says. “Our store-owners do this every day by helping people attract and enjoy birds and wildlife in their backyards. Through the Pathways To Nature Conservation Fund, we can now do the same at the premiere nature tourism sites in North America.”

Wild Birds Unlimited's partner in the Pathways To Nature Conservation Fund is National Fish and Wildlife Foundation, which is matching the monetary contributions made by the Wild Birds Unlimited franchisees and also managing the grant program. The fund was launched in 1999 with \$40,000 in grant funds from Wild Birds Unlimited and \$40,000 from the Foundation.

Three grants were awarded, including \$25,000 to the Santa Ana National Wildlife Refuge to help them rebuild their famous viewing platform. Under the provisions of the program, Santa Ana provided \$25,000 in matching funds through contributed goods and services.

The Pathways To Nature Conservation Fund grew dramatically in 2000, with each partner contributing \$100,000. It will remain at that level in 2001–2002.

Pathways To Nature Conservation Fund grant recipients must match their award on a minimum 1:1 basis with cash or contributed goods and services. Additional information about the program is available at <http://www.pathwaystonature.com>. Binocular lending programs and feeder set-ups are also available through the Pathways To Nature Conservation Fund.

Pathways to Nature Conservation Fund Grants to National Wildlife Refuges

Santa Ana, TX: \$25,000 to build viewing platforms and observation blinds.

Klamath Basin, OR: \$23,500 to construct blinds for shorebird photography and watching.

Necedah, WI: \$25,000 to support whooping crane reintroduction efforts.

Rocky Mountain Arsenal, CO: \$25,000 for education programs and remote video links.

Bosque del Apache, NM: \$25,000 for native plant exhibits and remote video links.

“Wild Birds Unlimited store owners know that to fully appreciate and help conserve birds and wildlife, our customers and the public have to be able to see and experience nature first hand,” Carpenter says. “We are also pleased that this program addresses one of the most pressing needs for the U.S. Fish and Wildlife Service: funding for wildlife viewing and education projects on refuges.”

Alicia Craig, Director of Education and Strategic Alliances, Wild Birds Unlimited, Inc.

Kathleen Moore, Pathways To Nature Conservation Fund, National Fish and Wildlife Foundation

Peter Stangel, Director of National Fish and Wildlife Foundation's Southeast Partnership Office

Hatchery Spawns Opportunity for Rare Trout



In good hands. *Apache trout may soon be the first fish fully recovered.* FWS photo: Craig Springer.

You can catch rainbow trout in virtually every state, but there's only one place you can fish for the rare Apache trout—the high country streams of eastern Arizona. The tall peaks of the White Mountains capture winter storms that in summer feed the fine coldwater streams that rim the mountain range. Mere hours from Phoenix, Albuquerque and El Paso, the White Mountains offer visitors the opportunity to wade a stream or paddle a lake and fish for this rare golden native trout.

Though the Apache trout is a threatened species, many populations of Apache trout are fishable and some harvest is allowed. This unique opportunity is due in great part to the work of Alchesay-Williams Creek National Fish Hatchery, located on the Ft. Apache Indian Reservation.

The hatchery promises to bear fruit for fishing and recovery by spawning more than 1,600 males and females to produce 509,000 live eggs. More than 248,000 of those eyed eggs were delivered to Arizona Game and Fish Department's Tonto State Fish Hatchery where they will be grown and stocked in streams of the Apache-Sitgreaves National Forest.

The hatchery also grows Apache trout up to 14 inches long before releasing them into streams and lakes on the Ft. Apache Indian Reservation, home to the White Mountain Apache Tribe.

"If fishing for rare and unusual trout is your thing to do, then the Apache trout is your fish," said tribal member and fish biologist Tim Gatewood. "Apache trout pulls people from all around for a unique fishing opportunity."

The Apache trout is a story in successful conservation. The White Mountain Apaches closed off the Apache trout to fisheries in the 1940s, and since then the fish has come a long way. Originally listed as an endangered species, this trout could soon be the first living fish taken off the federal list of threatened and endangered species. Intensive conservation efforts are underway to make that happen. Complete recovery is on the horizon.

Craig Springer, Division of Fisheries, Albuquerque, New Mexico

Gambling on "Outside Las Vegas"

The Place

Las Vegas! The exclamation point has become the accepted spelling, for this truly is a city like no other.

Beyond the neon and the glamour lies some of the most incomparable public land managed by the federal government. From 11,000-foot-high bristlecone pine forests to the dry Mojave desert playas, 7 million acres of spectacular natural landscapes surround Las Vegas.

This immense area includes the Desert National Wildlife Range, Lake Mead National Recreation Area managed by the National Park Service, Spring Mountains National Recreation Area managed by the Forest Service, Red Rock Canyon National Conservation Area managed by the Bureau of Land Management, and 3 million acres of other federal lands.

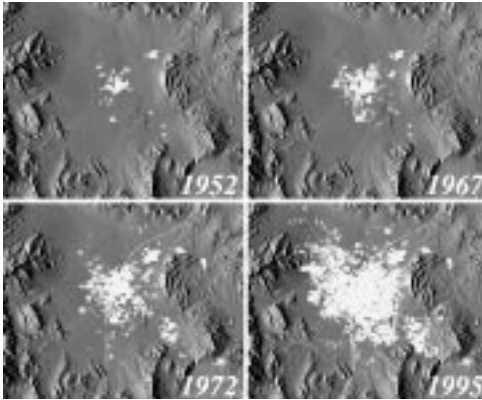
The Challenge

The Mojave Desert in many ways is the harshest environment in the nation. The federal lands surrounding this popular tourist destination are of great significance. Clark County, Nevada, and the Service have crafted a Multi-Species Habitat Conservation Plan, recognizing that the area's phenomenal growth comes at a very high price that is being paid on the surrounding public lands.

How does this impact the federal lands? Sixteen million people visited these lands last year alone. The four federal land management agencies face the same issues: rapid growth, aging infrastructure, changing user age and demographics, and fluctuating budgets. The agencies share common goals in natural and cultural resource management, environmental education and interpretation, threatened and endangered species protection and other trust responsibilities.

The most intriguing management challenge is simply being heard in the background noise of constant development. These sometimes disparate land management agencies needed a single, focused voice that could address their rapidly expanding audience and a voice that allowed them access to the highest levels of decision making.

Leading-edge Science Helps Imperiled Bonytail



Growing rapidly. Light areas show the growth of Las Vegas Valley from 1952 to 1995. FWS graphic.

The Notion

Late in 1999, a staff person was hired to represent all four agencies and work on forming a new kind of support organization. The Outside Las Vegas Foundation mission is "Dedication to preserving the federal public lands surrounding Las Vegas, enriching the experience of its visitors, the quality of life for local residents, and promoting community stewardship of these valuable resources."

A \$300,000 grant from the Hewlett Foundation, matched by Las Vegas, is funding the start-up costs for the Outside Las Vegas Foundation. Alan O'Neill, retired superintendent at Lake Mead NRA, has been hired as the first executive director for the foundation.

The target audience is not just traditional environmental supporters, but rather everyone affected by the conditions of the surrounding public lands.

The Future

In this most unlikely of places where the new west meets the old west, federal land managers are building new relationships internally so together they can more effectively address the changing needs of resource management. A positive new relationship between the public lands and the public is forming.

Dick Birger, Desert National Wildlife Range, Las Vegas, Nevada

Randi Thompson, Ecological Services, Reno, Nevada

The grasslands of southeast New Mexico, known for cattle and crops and an alleged UFO crash, seem an unlikely place for leading-edge biotechnology. But the little town of Dexter, essentially a service center for ranchers and farmers, is host to a state-of-the-art national fish hatchery and technology center.

The Dexter hatchery is no newcomer. Good water led to its establishment in 1931 and game fishes were then the focus. But the focus shifted in 1990 toward technology development for managing critically imperiled fishes such as the bonytail chub.

The endangered bonytail chub is the most imperiled vertebrate in North America. The not-so-gentle hand of nature has shaped its body over eons to fit its environment and make the fish a testament to meeting the challenges of nature. A keel on its nape and a tightly fused body have allowed it to prevail in the harshest of conditions: turbulent and turbid water warmed by intense Southwestern sun. Though the bonytail is built for survival where life is a struggle, ironically this species struggles to survive.

But hang on it does, with a lifeline from the technology center. Scientists there have developed a brood stock, a captive population of adults that produce offspring that ultimately make their way to the wilds of the Colorado River and many large tributaries, the fish's native habitat.

"With so few adults left in the world, it is of paramount importance that scientific principles guide bonytail chub management," said Service geneticist Connie Keeler-Foster.

Toward that end, Keeler-Foster has employed leading-edge technology to manage the bonytail chub stock on the genetic level. The center's laboratory was recently equipped with a DNA sequencer, an apparatus that allows Keeler-Foster to identify individual fish by their genes.



The shape of things. Bonytail chub are built for life in turbulent water. FWS photo: Craig Springer.

Knowing the genetic makeup of the entire brood stock—essentially having a pedigree chart—permits scientists to selectively pair up males and females for mating. Picking mates that are most genetically divergent produces offspring that are more fit to face the rigors of life in the wild.

"Mates well suited for each other may produce young that are less prone to disease," noted Keeler-Foster. "They themselves are more likely to reach adulthood and produce their own young in the wild. And that's what we want."

The end product, a reproducing population in the wild, is far removed from the technology center. But science is the first step in conserving a species staring extinction squarely in the face.

Craig Springer, Division of Fisheries, Albuquerque, New Mexico

Refuge Provides Habitat for Species and Humanity

On the outskirts of Austin, Texas, a 16,000-acre network of spring-fed canyons, limestone hills, and shrub-specked meadows known as Balcones Canyonlands National Wildlife Refuge spreads across the heart of the Texas Hill Country.

Here, the sky is a crisp blue, the stars shine bright, and the breeze carries the sweet-smoky aroma of cedar and burnt oak. In the spring, mixed stands of red oak, live oak and ashe juniper offer their contorted limbs to nesting golden-cheeked warblers and blacked-capped vireos, two endangered migratory songbirds for which the refuge was established in 1992.

Recently, circumstances here revealed what was destined to become another kind of essential habitat—for humans in need.

As the refuge boundary extended with the 1999 purchase of a new tract of land, Refuge Manager Deborah Holle faced a dilemma: several houses were scattered across the new land. One was a hunting cabin. Another was a ranch-style house that appeared to be at least a hundred years old. A few more were modern homes that had been occupied by residents prior to the land transfer. But all, without exception, would be unable to serve refuge purposes: they could not be salvaged as on-site residences simply because there was no such need.

Likewise, they could not be used for storage. They would pose potential fire and vandal risks; and most importantly, they would likely curtail the appeal of the area to wildlife. The reason the land was bought in the first place was to convert it to productive wildlife habitat, and possibly endangered species habitat.

So Holle charged Assistant Refuge Manager Larry Narcisse with finding out if Habitat for Humanity, which builds homes for the needy, would take these houses away and find residents for them. Narcisse had been steeped in a regional agency initiative known as the Ambassador Program that aims to convert wildlife refuge staff into local refuge system “ambassadors” through community involvement. He was already planning to organize refuge employees to help donate their labor to the charity organization.

But when Narcisse contacted a representative of Austin Habitat for Humanity, he was told they would be unable to take the structures away whole. Perhaps, though, the buildings could be taken apart and their parts sold in the Austin-based Habitat for Humanity RE-store, which sells recycled building materials at discounted rates, earning proceeds that go back to building new houses for those in need.

A hill country haven offers building materials for nests and houses.

The materials are usually garnered from individuals remodeling their homes or from overstocked businesses who would otherwise discard them in the landfill or the dump. The Habitat for Humanity RE-store in east Austin became the first of its kind in 1992; now, there are more than 150 across the nation.

Initial conversations with Habitat for Humanity representatives led Narcisse to Bill Bowman, project manager of a newly-developed Deconstruction Program for the RE-store.

“Deconstruction is a new term used to describe an old process,” said Bowman. “It is the disassembly of structures for the purpose of re-using the components and building materials. Between 70 and 90 percent of a structure can be salvaged through the process.”

Not long after Bowman came to see exactly what the refuge had to offer, crews of volunteers were dismantling the structures and hauling entire walls, doors and frames off to the RE-store.

Because Habitat for Humanity can offer to build only a certain number of homes per year for candidates who meet the requirements, Bowman said, the RE-store helps meet the needs of thousands of people in greater Austin who just miss these requirements but are still in need.

“An estimated 70 percent of the people who buy from our RE-store are from the neighborhood,” he said, “and they can get new commodes, cabinets, air conditioning units...all for discounted rates. So, as we build houses for some, we provide their future neighbors with affordable building resources as well, all the while earning the capital required to keep offering and possibly extending our services.

The refuge joined the circle in June 2000 when the first house on the new property was completely dismantled.

“This is the quintessential win-win situation,” said refuge manager Holle. “The refuge benefits from the removal of the structures which will enhance wildlife habitat, and the funding received through the sale of the recycled materials will enable Habitat for Humanity to build more homes for people who really need them.”

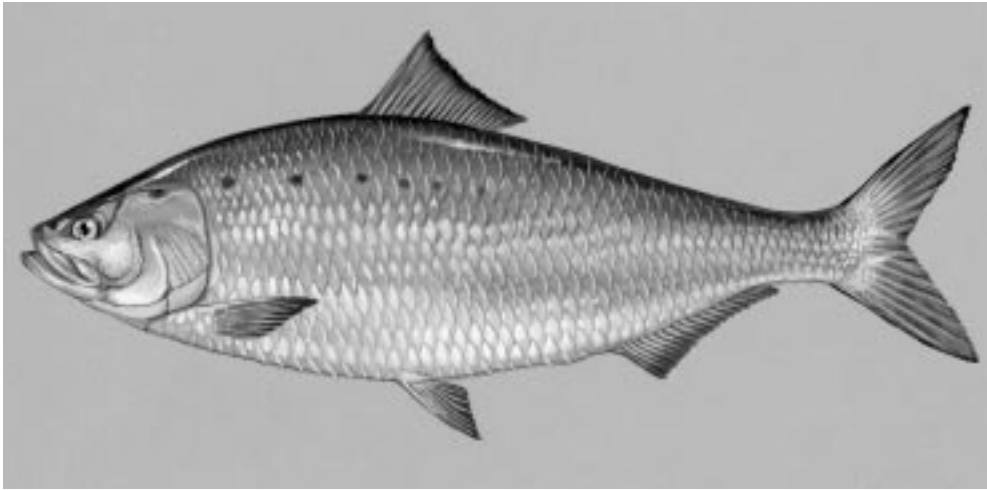
Bowman estimated the last deconstructed home would yield the charity approximately \$6,000 in proceeds.

Between January and May, five homes had been removed and additional vacant homes on other tracts are being considered for dismantling.

When the afternoon shadows begin tilting more quickly with the shortening days and the summer draws to a close, the golden-cheeked warblers and the black-capped vireos will prepare for the journey south. This hill country haven will always offer conditions and materials necessary for these endangered birds to build their nests—and thanks to the recent synergy between refuge and charity, humans in need will have a few more materials to build their own nests.

*Ben Ikenson, External Affairs,
Albuquerque, New Mexico*

American Shad Numbers on Three Rivers Range from Encouraging to Record-breaking



On a comeback. *The imperiled American shad has made a dramatic comeback thanks to fish passage construction, dam removals and hatchery reproduction. FWS illustration: Duane Raver.*

The American shad is showing indications of an impressive comeback in at least three major rivers. Since 1993, state and federal partners working with the EPA Chesapeake Bay Program have completed more than 100 fish passage and dam removal projects in the Chesapeake watershed, opening more than 900 miles of blocked tributary waters to migratory fish.

This fish was among the most plentiful in the Chesapeake until over-fishing and habitat degradation and fragmentation pushed the species into decline.

Dick St. Pierre, a Service fish coordinator based in Pennsylvania, said that all prior records for the number of American shad passing Susquehanna River dams in eastern Pennsylvania have already been shattered.

St. Pierre said low water levels on the Susquehanna and cool temperatures during the month of May combined to push shad passage to levels impressively above those of 1999 and 2000, and in at least one instance, more than doubling the count at three of the four dams.

At Boshers Dam, near Richmond where the Service and nearly two dozen other federal, state and civic partners pooled their resources to build a passageway just three years ago, the number of shad counted went from just 16 in 1999 to 375 just a year ago.

Albert Spells, the Service's Virginia fishery coordinator and manager of the Harrison Lake National Fish Hatchery in Charles City, Virginia, said preliminary signs on the Maryland side of the Potomac River are also pointing up.

Last year, biologists from the Service, the Interstate Commission on the Potomac River Basin and the Maryland Department of Natural Resources captured three American shad in the Great Falls region during a fish passage and hatchery product evaluation project. Great Falls, a few miles upstream from Washington, D.C., is the historical limit of the shad's Potomac River migration. This year, 15 shad were captured at the same Great Falls location. The shad's return to Great Falls was made possible by a fishway built at nearby Little Falls on the Potomac in 2000.

"We're making some real headway," said Spells. "We anticipate that many of the fish we'll see at Great Falls later this year will be hatchery-released fish."

Biologists will be able to determine whether the shad are hatchery or wild fish by looking for fluorescent markings left on shad larvae in the hatchery.

Meanwhile, Spells pointed to a record take of shad eggs on Virginia's Pamunkey River, a yearly project that engages the Service and the Virginia Department of Game and Inland Fisheries in a shad restoration program on the James River in Virginia.

Pamunkey fish are the broodstock, providing the eggs that are in turn taken to Harrison Lake and state facilities where they are reared for eventual release back to the wild. The project is conducted in accordance with Atlantic States Marine Fisheries Commission's genetic guidelines, which require management agencies to seek suitable broodfish sources from within a respective river. If an adequate egg source cannot be found from within a target waterway, another may be sought from a neighboring river. The Pamunkey is the neighboring river to the James in the Chesapeake Bay watershed.

The passage program, which relies heavily on partnerships in both the public and private sectors, seeks to restore the waterways to historic spawning grounds by notching, eliminating or building passageways around small, older dams that are particularly common in the eastern United States. Many of the dams date to the beginnings of the Industrial Revolution, when countless rivers were blocked in pursuit of water power.

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

Silvery Minnow Restoration a Balancing Act

In contrast to some fish, whose eggs take months to incubate, a Rio Grande silvery minnow can produce up to 5,000 eggs which hatch in about 24 hours and yield fry that can swim in just three to four days. It is no surprise then that a species so programmed for survival once dominated an historical niche that spanned 3,000 miles of a river system in the Southwest.

Now that the minnow is on the cusp of extinction, its remarkable reproductive strategy works against the species, largely because its eggs are semi-buoyant. Often they drift downstream until they are deposited into the deep and inhospitable waters of the 36,000-acre Elephant Butte Reservoir, where they are thought to reside at the bottom of a food chain that includes dozens of predatory fish.

In short, the silvery minnow's biological proficiency means little in the world to which it now desperately clings, a 180-mile stretch of the Rio Grande bisected in the middle by three diversion structures—impassable to fish—and flowing into Elephant Butte.

In 2000, the Service initiated an egg salvage pilot project to help make the balancing a little more manageable. Biologists from the Service, the Bureau of Reclamation and the University of New Mexico collect minnow eggs as well as reproductively-ready adult minnow near Elephant Butte, where their efforts, while saving minnow from the reservoir, do not disturb upstream populations.

Because this species' eggs can no longer afford to drift, biologists recently initiated a project designed to rescue and transplant floating eggs to more suitable habitats. In May, after an increase in the river's flow (a natural spawning cue in species that produce semi-buoyant eggs), biologists deployed devices that rescued more than 100,000 eggs from the waters above Elephant Butte. The eggs were added to a captive population of silvery minnow at the City of Albuquerque Biological Park as part of a recovery effort that is a perpetual balancing act.



Helping hands. Gary Dean works at Rio Grande silvery minnow egg collection effort. Bureau of Reclamation photo: Mickey Porter.

Biologists induce captured adult minnows to spawn, either at the Albuquerque BioPark or the Service's New Mexico Fishery Resources Office. Then, they either return the resulting fish to the Rio Grande or hold them for captive propagation.

Steven Platania, a research biologist under contract with the Bureau of Reclamation coordinated this year's egg collections.

"In addition to salvaging Rio Grande silvery minnow eggs for transport to refugia and use at breeding and rearing facilities," he said, "this year's work will provide important preliminary information on the timing and duration of spawning of Rio Grande silvery minnow. We believe that in the future monitoring the level of reproduction of this species will be paramount if we are to assess the success of planned reintroduction efforts."

Only in the last half century has the minnow's floating egg become its Achilles' heel. Though the species was listed as endangered in 1994, its steady decline coincided with flood-control and river channelization projects that began in the 1940s and eventually converted the Rio Grande from a wide, shallow, meandering river to a much narrower and deeper one. The minnow's range likely ebbed as insulated oxbows and shallow pools disappeared on the banks or dissolved into the newly controlled current.



Clinging to survival. Rio Grande silvery minnow. FWS photo.

"There is an estimated 99 percent mortality rate for minnows spawned in the river today," said Service biologist Jude Smith. "The statistics are discouraging and until they improve, we will be constantly put to task to help these minnows."

Soon after the minnow was listed as endangered in 1994, biologists began collecting and relocating minnows upstream as well as conducting minnow rescue operations when the San Acacia reach went dry.

In the past, these efforts have been no more than desperate measures to stave off silvery minnow extinction. In the meantime, the idea of ferrying minnows from lower reaches of the river to higher reaches on a regular basis is under debate. The balancing act will continue, but the eventual goal, of course, is to remove human hands from the picture so that the species can sustain itself naturally.

Among the improvements necessary for the minnow's survival are sustained water in the Rio Grande; solutions to the problems of fish passage posed by dams; and general river restoration, especially upstream of San Acacia Dam, to re-create historic habitat conditions such as slow-moving, shallow water with a shifting, sandy bottom.

Although these endeavors may seem like a large price to pay for a tiny minnow, Smith said, "by trying to save the minnow, we are really working to save the river. The minnow is an indicator species that suggests the overall health, or sickness, of the entire river ecosystem."

*Ben Ikenson, External Affairs,
Albuquerque, New Mexico*

Southwest Employee Passionate About Turtles

When he served as the Service's Kemp's ridley sea turtle recovery coordinator, Charlie Sanchez was instrumental in orchestrating recovery efforts with the private fishing industry and Mexican state and federal governments in the State of Tamaulipas, Mexico. Last May, the National Fisheries Institute, which represents the shrimping and commercial fishing industry the United States, awarded Sanchez the 2001 Ridley Award for his "contribution to the protection and restoration of the endangered Kemp's ridley sea turtle" on both sides of the border.

Sanchez, who currently serves as the special assistant to the Southwest Regional Director for ecosystem issues, is the first non-member of the fishing industry to receive the distinctive honor, and he graciously credits his achievements to the willingness and cooperation of the industry to work with him.

"The fishing industry," said Sanchez, "has been extremely obliging to the government agencies in both Mexico and the U.S. in executing efforts to recover a species that had been drifting perilously close to extinction."

In the Spring of 1947, 40,000 female Kemp's ridley sea turtles came ashore to nest on the beaches of Rancho Nuevo, Mexico. It was the largest documented arribada—mass nesting—by Kemp's ridleys. With anywhere between 80 and 140 eggs laid in each nest, there was no indication that the species was in danger of becoming extinct.

By the late 1970s, a single *arribada* rarely reached 200 females. The species was almost completely decimated because of human encroachment, including poaching for eggs and meat; disease; predation of eggs by skunks, coyotes, raccoons, crabs, and birds; and unmanaged fishing practices. The turtle was listed as endangered throughout its range in 1970.

After the Service listed the turtle, a combination of effective public outreach and development and enforcement of fishing regulations led to the slow return of the species.

During the last five years, the numbers have been steadily on the rise, largely because of the participation of the U.S. and Mexican



Still dedicated. *Charlie Sanchez clears ground for nest transplanting at Rancho Nuevo, Mexico. FWS photo: Bryan Arroyo.*

governments, local communities, the Gladys Porter Zoo in Brownsville, Texas, and the fishing industry. This shared commitment has offered renewed hope for the tenacious turtle as nesting numbers have been increasing both in Rancho Nuevo, Mexico and South Padre Island, Texas.

In contrast to the 750 nesting turtles that remained in 1985, last year's nesting season saw a record of more than 6,000 turtles. Although the species will not be considered for down-listing until there are at least 12,000 nesting turtles, the rise in numbers is encouraging, said Sanchez, who deflects all credit to a variety of cooperative efforts.

He noted, for example, that National Marine Fisheries Service staff have contributed by participating in recovery efforts to enhance monitoring on Mexican beaches and improvements to a research compound at Rancho Nuevo. The fishing industry likewise has been charitable with their time, labor, and indeed, funding, he said.

"Industry is matching our efforts dollar for dollar, if not more," he said.

The U.S. National Fisheries Institute and its Mexican counterpart, the Camara Nacional de la Industria Pesquera, helped construct three new turtle nest monitoring camps, each rigged with electricity, barracks, and

fencing. Since they were built in 1999, the camps have been serving as research stations for recovery team participants during monitoring seasons, which last from March to July.

There appear to be other segments of industry willing to cooperate as well. Last year, for example, the Honda Corporation of America pitched in to help monitoring efforts. The distance between nesting areas is significant and requires team members to travel across vast expanses of sandy beaches. After Sanchez made a few telephone pleas to the corporate office, Honda donated eight new all-terrain vehicles.

These days, Sanchez nurtures partnerships with Mexico to protect and manage the border's natural resources on a sustainable basis. Ecosystems do not recognize boundaries, he says, and the U.S./Mexico border is host to many species of flora and fauna that are either threatened or endangered.

"My work with the Service allows me to concentrate my efforts on helping a variety of species across borders in addition to the Kemp's ridley sea turtle," he said.

*Ben Ikenson, External Affairs,
Albuquerque, New Mexico*

Spear Reflects on Nearly 3 Decades with the Service



Michael Spear, manager of the California/Nevada Operations office, retired earlier this year after 28 years with the Service. FWN asked him to reflect on his experiences.

FWN: How did you come to the FWS?

Spear: In 1973 I became a budget analyst in the Interior Department, and my “client” was the Service. I spent an intense six months working on Service issues.

I ended up doing something different. I found ideas to expand on. I told the Service, “I think maybe you’re thinking too small...” and helped support and push their budget. Those efforts were recognized by the director, Lynn Greenwalt, and [former Assistant Secretary] Nat Reed. When the position of assistant director for Planning and Budget came open, I applied and was selected for it in December 1973.

The principal reason I wanted to join this organization is this: while I had grown up on a small farm, I really didn’t consider myself a strong environmentalist. The ESA was passed in December 1973, and I had a fundamental sense that I wanted to be part of an organization that brought life sciences to the fore and make sure that this information became part of the decision making process for the future. I believed that the Service had a good chance of being the principal organization doing this work.

The Service has become that prominent life sciences agency outside the areas where our public agencies have lands and biologists on board to manage the lands. It’s the Service at the federal level—and internationally—that is dealing with how to bring life sciences to bear on public decision making.

FWN: In the early 90s, the Service and California Department of Fish and Game cooperatively addressed conservation of the California gnatcatcher with local governments, resulting in a planning process that took an ambitious multiple ecosystem, multi-species approach. How did that experience help refocus the Service’s endangered species program in California?

Spear: Large-scale regional conservation planning really started a decade ago. At the time I was assistant director for Endangered Species, and clearly we had to find different ways of dealing with these issues because of the rapid development occurring in southern California. The State of California brought new ideas to the table, among them the application of a new state law that resulted in the Natural Community Conservation Planning program (NCCP). We began to blend the federal and the state programs and work locally with the public, looking at areas where we could apply these regional habitat conservation plans (HCPs).

In 1994 I became regional director in Portland and early in 1995, I was working on the Orange County NCCP, and San Diego’s plan, the Multi-Species Conservation Plan (MSCP). It took that kind of high-level policy attention and working with the field staff to continually work out bugs and policy issues, all the while combining our efforts with those of California. I can’t give enough credit to the fact that this is truly a partnership effort with the state.

The 1997 San Diego MSCP is seen as the “mother” of the new era of HCPs. It covered 500,000 acres, including 170,000 acres of reserves, and was truly a multi-species, multi-jurisdictional, multi-activities plan. Today in California there are about 20 countywide or nearly countywide HCPs in various stages of development. This was my top priority in the state.

FWN: The Service has been a major player in the CALFED Bay-Delta Program, the largest wetlands restoration program in the nation. Why is CALFED important?

Spear: The bay-delta system is an intricate web of waterways created at the junction of the San Francisco Bay and the Sacramento and San Joaquin rivers and the watershed that feeds them. Fresh water flows through the delta—a network of natural and man-made waterways—to help supply two-thirds of the state’s population with drinking water, and irrigate 200 types of crops in the Central Valley. Today, this estuary ecosystem supports more than 750 species of fish, animals and birds, including waterfowl migrating on the Pacific Flyway. It supplies and sustains fisheries, wildlife refuges and 40,000 acres of critical wetlands.

The CALFED Bay-Delta Program is a cooperative effort among public, state and federal agencies with management and regulatory responsibility in the bay-delta system. It was formed in 1994 as part of the Bay-Delta Accord to develop a long-term, comprehensive plan to restore ecological health and improve water management for beneficial uses of the bay-delta system.

From 1994 to 2000, CALFED efforts were intense—thousands of meetings—probably the biggest public participation effort I’ve ever been involved with. One thing California does well is involve stakeholders, and we had environmentalists, water users, communities, and federal and state agencies working together for six years.

We felt blessed because those six years were generally wet years so we didn’t have many crises along the way. In order to provide for long-term survival and prevent extinction of delta species including salmon and delta smelt, we had to address new ways of doing business. We had to look to the future of water supply in California and recognize that the state had to have increased conservation and supply.

The CALFED Record of Decision was signed in September 2000. The CALFED solution says, “Fish and Wildlife Service, Fish and Game, National Marine Fisheries Service, you have x amount of water—380,000 acres in an environmental water

account. You adaptively manage that water day by day, hour by hour, in concert with water users and water agencies. You use that water wherever you must but we want assurances that the rest of the water can be utilized either for urban or agricultural water supply.”

We learned a lot more about each others’ business, and that communication and collaboration helps us greatly in getting along in all kinds of issues.

FWN: In September 1996, Senator Diane Feinstein, Deputy Interior Secretary John Garamendi and California Secretary for Resources Doug Wheeler signed an agreement with Charles Hurwitz, Chairman and CEO of MAXXAM Corporation, the owner of Pacific Lumber Company, that committed the federal and state governments to provide \$380 million for the purchase of the largest grove of old-growth redwood still in private hands anywhere in the world. The agreement specified that Pacific Lumber would develop a habitat conservation plan and a sustained yield plan for the remainder of its lands, approximately 200,000 acres. Can you take us behind the scenes on what led up to this agreement?

Spear: The Headwaters process was relatively quick in comparison to CALFED, taking only about 3 years to accomplish, but it was probably the most intensive activity with which I’ve been involved. The Headwaters Forest contained two listed bird species, the threatened northern spotted owl and marbled murrelet, and there was a huge issue over the extent to which Pacific Lumber could harvest these old-growth forests and not jeopardize either.

It was our desire to preserve the species, and maybe more important to many, to preserve these large stands—approximately 10,000 acres of old-growth redwoods on a 200,000-acre property. Congress sort of “prefunded” the arrangement and we finally reached a

good solution, which included an HCP. We saved about 80-plus percent of the old-growth and tried to come up with a solution that would allow Pacific Lumber to have a viable industry on their remaining forest and still maintain murrelets and owls.

A lot of people outside government didn’t fully understand that federal and state governments wouldn’t simply go in and take over those lands. Our task was to work out solutions acceptable to both sides—the private property interests as well as the public interests.

FWN: California is never short on hot issues, but the “issue du jour” is energy. Beyond adjusting thermostats in federal buildings, this has also been a pretty hot issue for the Service, right?

Spear: The Service became involved after the California Legislature passed a law establishing the Governor’s Green Team. The Service and the Environmental Protection Agency were specifically mentioned in that legislation as members because endangered species and clean air issues would be some of the most significant potential factors in expediting power plant construction.

Since October 2000, the Service has been smack in the middle of the issue of facility siting and expediting permits for new power plants and other energy-related facilities. Any energy facility permitting issue that came in the door immediately went to the top of the list. Staff would drop other work and concentrate on getting these energy projects back out the door as expeditiously as possible. We followed the same staff policy on facilitating activities related to the National Fire Plan. If you’re willing to look other customers in the eye and simply say, “we are going to do energy and fire first,” you can ensure these issues get expedited.

The problem the Service faces is that it is under pressure to do too many activities as our top priority. The Service got additional resources to work on the fire plan, but that’s the exception, not the rule.

FWN: You’ve talked to large groups of biologists on “bio-politics.” Could you share some of your philosophy on how to work smarter in today’s bio-political sphere?

Spear: It is with delight and frustration that I witness the naivete of new biologists coming out of school and beginning to get involved in this bio-political realm. It’s my observation that we get biologists fresh from school who are incredibly technically educated, and yet somehow to them the word politics has a dirty name. They struggle for a few years coming to some recognition of how the two play together.

One of the things that biologists have to do is tolerate ambiguity. They’re not used to the fact that ambiguity is pervasive in the public sector. We have lots of bosses, they all have different ideas and they just need to understand it, expect it, stay calm and work through it.

One of the most important things I like to say is that biologists must understand the difference between policy and science. Never let elected officials cloak policy as science. One of the biggest mistakes I’ve seen people make is to let a policymaker hide behind a position they want to take by claiming it is science. Political bosses get to make policy choices, they don’t get to say they’re based on science if they are not.

Another key point is that style counts. Biologists must be able to communicate our information, we must respect the people we’re talking to, regardless of their point of view, and we must use our best information, communicated in a style that’s effective.

FWN: What do you see as the biggest challenge facing the Service?

Spear: Continuing to work smart. To have the leadership skills to assess the organization—determine what’s important,

Continued on page 20

Spear Reflects (continued)

what is key—and focus on what society expects from us. The Service needs to pick up some of the skills used in a retail business—customer service, “working locally”—to be seen as effective regulators. The Service needs to be able to provide good customer service, to make tough decisions. The Service’s business is constantly changing and it has to be adroit to understand it.

FWN: If a genie suddenly appeared and granted you three wishes for the Service, what would they be?

Spear: One very simply comes to mind, a reauthorized Endangered Species Act. The ESA needs careful reauthorization. Hopefully people will listen to what’s working and what’s not, and make changes in the act to eliminate those aspects that are not working well.

A clear direction for the ESA is to have a larger role for the states. It’s inevitable, these closer ties to the states are happening in every corner of Service management. From a technical point of view many states are in good positions to help implement the act.

Secondly, states need a broader federal grant that allows them to support themselves and support a capability that would give them resources to help them administer the ESA. For example, the EPA provides 75 percent for sewage treatment grants.

A third wish is for the Service to continue along the path it is on to hire good employees, train them, and maintain their objectivity and professionalism. I strongly believe that it is on a very good course with new facilities like the National Conservation Training Center.

Interviewed by Patricia Foulk, Ecological Services, Sacramento, California

Aviary Provides Homes for Eagles, Alleviates Wait for Feathers

During a severe ice storm late last December in Pushmataha County in southeastern Oklahoma, a bald eagle feeding on road-killed carcass nearly became roadkill itself when it was struck by a truck. Instead, the injured eagle was taken to a vet who pinned its broken bones. The bird was then left to heal under the care of federally licensed wildlife rehabilitator Kathy Siftar.

When the breaks did not heal, part of the eagle’s right wing was amputated; rendering it unable to survive in the wild. Siftar looked after the bird for three troubling months, during which time she offered it to two zoos.

Rehabilitators may only keep animals for eventual release, so she was trying to find a permanent home for the bird. The zoos, however, were only interested in exhibiting cosmetically normal-looking specimens. Siftar was faced with the daunting possibility of having to euthanize the eagle.

“Despite the fact that the bird would be unable to survive in the wild without the ability to fly, breed, and feed,” Siftar said, “it appeared to be recovering from the surgery and in relatively good health. We really didn’t want to have to euthanize it.”

Her prayers were answered by an Indian tribe some 700 miles away.

“Not only do we revere wildlife,” said Malcolm Bowekaty, governor of the Pueblo of Zuni, “many species are sacred and some are considered to be incarnations of our ancestors. One of these is the eagle, and many aspects of our religion call for the use of eagle feathers.”

Historically, Zuni Indians gathered eagles by combing the clay-colored mesas, sandstone bluffs and juniper-studded hillsides that hem the river valley they have inhabited for centuries. But when Congress enacted the Bald Eagle Protection Act in 1940, and amended the act in 1962 to include golden eagles, collection of these birds from the wild became illegal.

The law did, however, provide for Native American religious use of eagle feathers, and the Service established the National Eagle Repository near Denver to store eagle carcasses specifically for the purpose of



Rescued. This bald eagle, which was struck by a car and had a wing amputated, lives at the Zuni Aviary. FWS photo: Ben Ikenson.

distributing parts or feathers to tribal members who apply for permits and make official requests. But with approximately 5,000 individuals on a waiting list, the demand is, at times, hard to meet.

In 1996, the Pueblo of Zuni initiated talks with the Service about how to alleviate a waiting period to receive eagle feathers for ceremonial purposes. It was then that the idea of an on-reservation eagle facility was hatched.

“One of the alternatives,” Wemytewa said, “was to build our own eagle aviary with the hope that there would be a supply of non-releasable birds to place in it.”

These discussions bore the seeds of what would become the first aviary of its kind—a home for permanently injured eagles that simultaneously alleviates tribal cultural demands.

“With a legitimate ceremonial need and the proper permits, any tribe can have an eagle aviary,” said John Antonio, the Service’s

Watermen, Service Cooperate to Save Sturgeon

Native American liaison in the Southwest. "But to fulfill the various technical requirements, it takes some innovation and a great deal of determination."

After the Pueblo of Zuni council learned the technical requirements of operating an eagle facility, tribal members began construction of the aviary through significant in-kind funds from the Bureau of Indian Affairs and generous contributions from the Lannan Foundation, the Christopher Reynolds Foundation, the Fund of Four Directions, the Angelica Foundation and the Chamiza Foundation. Noted architects Claude Armstrong and Donna Cohen volunteered their expertise in designing the building, which strongly reflects its natural surroundings.

Sustaining the Zuni culture may also help sustain a species. The Pueblo is exploring options to develop a captive-breeding program with the birds in the aviary to assist in eagle restoration efforts in the Southwest. In the meantime, the aviary provides a home to eagles that have missing bones or wings, vision impairments, or other permanent injuries. After Kathy Siftar declared her bald eagle "non-releasable," she was only too relieved to learn about the aviary at the Pueblo of Zuni.

Certified wildlife rehabilitators like Kathy Siftar usually determine whether a bird has regained the ability to survive in the wild. On April 26, an American Airlines Fokker 100 "American Eagle" test flight brought Siftar and her bird from Tulsa to Albuquerque where they were met by representatives of both the Pueblo and the Service. Following a veterinary examination at the Rio Grande Zoo, the bird was transported to the reservation in western New Mexico.

At the entrance to the Pueblo of Zuni, a medicine man held a brief purification ceremony to bless the eagle. After a long journey that began in an Oklahoma ice storm last December, the bird was finally home.

*Ben Ikenson, External Affairs,
Albuquerque, New Mexico*

Editor's note: To read more about the Zuni Pueblo eagle aviary, see the May/June 2000 issue of Fish & Wildlife News.



Catch and release. Service biologist work to measure and tag this wild Atlantic sturgeon. FWS photo: Boyd Kynard.

*by Hal Moore
Special to Fish & Wildlife News*

On Virginia's Northern Neck, watermen have tapped into the resources of the Chesapeake Bay for more than two centuries. They know there have been times when the bounty of the bay was stressed, especially during the market hunting and wholesale harvest of fin and shellfish around the turn of the century. But modern commercial fishermen are well aware of the need to protect the resources that sustain their families and most try to stay up to the minute on all the conservation regulations on their traditional fishing grounds.

When two rare sturgeon were caught near Ophelia, Virginia, on March 26, the watermen carefully placed them in a holding net and called the Service. Biologist Brian Wells and biological technicians Tina McCrobie and Richard Wise were immediately scrambled from their base in Annapolis at the Maryland Fisheries Resource Office and were on the scene within hours.

The nets, which usually provide table fish for the commercial market, had snared an endangered young shortnose sturgeon and a protected wild Atlantic sturgeon. The shortnose was two and a half feet long and weighed only six pounds—not yet of breeding age. The mature wild Atlantic sturgeon was a respectable five feet eight inches and weighed in at 44 pounds. Neither

was anywhere near their respective potential sizes—four feet for the shortnose and a gigantic 14 feet for the Atlantic.

Both fish were carefully measured, weighed and tagged on the left side. A small sample of tissue was taken from the tail for DNA analysis and all of the procedures were videotaped before the fish were gently returned to the river. The nets had held them harmlessly for a number of hours, an often-overlooked advantage to this fishing method.

Although there has never been a specific commercial fishery for the shortnose sturgeon, both it and the Atlantic were almost fished into extinction by the beginning of the 20th century. Both had the misfortune of providing extremely tasty flesh and a roe—fish eggs—known the world over as caviar. The market fishermen back then did not discriminate between the species.

Sturgeon are a truly primitive fish, with an armored skin that looks prehistoric and an extendible snout that is used to vacuum their food up off the bottom. Their wiliness and their diverse (?) enable them to live a long time and grow to great size, but also make them easy to catch.

George Washington ran a successful net fishing operation out of Mount Vernon and sturgeon was one of the spring spawning

Watermen, Service Cooperate to Save Sturgeon (continued)

runs that he liked to take for the market. Overfishing the spawn was but one of the causes of the decline of this great fish. George Washington also participated in the damming of the Potomac River to open up the Ohio River Valley to commerce, which unfortunately cut off the sturgeon from their spawning grounds. But the development of human population, with its associated pollution, silt and runoff was probably just as fatal to the sturgeon as anything else.

The Maryland Department of Natural Resources released approximately 3,200 Atlantic sturgeon in the Nanticoke River, a tributary of the Chesapeake Bay. These sturgeon were reared in the Service's Northeast Fishery Center hatchery in Lamar, Pennsylvania. This technique could possibly be used to repopulate rivers that have been fished out.

A multi-tiered effort of research and cooperation between state and federal agencies—with the support and cooperation of both the commercial and sports fishing communities—may enable these sturgeon of the Tidewater and the Chesapeake Bay to return someday to their rightful place in the food chain.

Editor's note: Hal Moore is a freelance writer who lives in Virginia. This article originally appeared in Chesapeake Angler magazine. It is reprinted here with permission.

Roll On: Refuge Takes Various Approaches to Combat Invasive Weeds



Under control. *This roller chopper, pulled by the Service's Natalie Niederost, helps control prescribed burns. FWS photo: Doug Broce.*

Aransas National Wildlife Refuge has tried various seasonal burns to combat dense thickets of live oak that have overtaken portions of the Texas coastal savannah. In late 2000, the refuge experimented with restoring these areas to prairie using roller-chopping. Over the last nine months, the refuge has learned a lot about combining roller-chopping and prescribed fire. Here's a look at the project's progress and its future goals.

A roller-chopper is a large metal drum with plates welded lengthwise around the drum. It resembles a paddle wheel off an old riverboat except that the plates are staggered. These plates serve as teeth that chop the vegetation as the drum is pulled behind a bulldozer.

"The biggest improvement with roller-chopping is reduced risk to fireline personnel," said Doug Broce, the refuge fire management officer. "Shorter flame lengths in the roller-chopped areas are easier to work around. The roller-chopper also provides a more continuous fuel bed that gives a more uniform burn within the thickets."

The dense thickets of brush within a unit are roller-chopped in a pattern that spares large live oaks and their understory vegetation. These "mottes" provide food and shelter to both migratory birds and resident wildlife and need to be protected. Roller-chopped brush is cleared away from the edges of the mottes before burning.

Partnership will restore habitat on former superfund site. *Dr. Mamie Parker, the Service's Northeast regional director, speaks at Peterborough Town House, New Hampshire, as U.S. Senator Bob Smith of New Hampshire (right), and John Berry, executive director of the National Fish and Wildlife Foundation, look on. Senator Smith, formerly chairman of the Senate Environment and Public Works Committee, presented a \$40,000 check to the Peterborough Conservation Commission, to purchase 40 acres of wildlife habitat on the Contoocook River as compensation for natural resources degraded by contaminants from the South Municipal Wellfield Superfund Site. The Peterborough Conservation Commission applied for the competitive grant through the National Fish and Wildlife Foundation. FWS photo.*



Rare Wyoming Toads Found, Hatchery Reintroduces More

The chopped vegetation causes lower flame heights which in turn decreases the likelihood that a fire will carry across the cleared area and into the mottes. About 70 percent of the mottes located within the roller-chopped units have been successfully protected with this technique. The refuge has roller-chopped and burned three units in what appears to be a winning combination that would not have been possible without some help.

"If it wasn't for the ability of the regional office to acquire funds, the projects would never have been completed," said Broce.

Building on this success, the refuge plans to evaluate several roller-chopping techniques. One unit this year will be roller-chopped after acorn development and burned in the fall in the hopes that some acorns in this unit will be available for wintering whooping cranes. The refuge also plans to use roller-chopping to reduce hazardous fuels.

"Our first impression after roller-chopping a burn unit is that this looks very good," said Refuge Manager Charles Holbrook. "We believe that the savannah pattern we are creating with open areas and mottes will help reverse the decline in prairie dependent migratory birds. With cooperation between the fire management and biological programs, we will continue to evaluate the benefits of roller-chopping on the refuge."

*Kelley Hays, Aransas NWR,
Austin, Texas*



Rare find. *Ed Stege, Saratoga National Fish Hatchery Manager, and Linda Fleming, a Wyoming Game and Fish Commissioner, provide cover for juvenile Wyoming toads released at Mortenson Lake National Wildlife Refuge. FWS photo: Amy Hopperstad*

During a spring "toad search" at Mortenson Lake National Wildlife Refuge near Laramie, Wyoming, Service biologists counted 52 yearling and 4 adult Wyoming toads, considered one of the most endangered amphibian species in North America.

Mortenson Lake is last remaining place, which has been protected by the Endangered Species Act since 1984, where this aquatic species can be found. During last year's surveys at the site, 156 adult Wyoming toads were counted in the spring and 62 toads were found in the fall, as their dormant season was beginning.

After surveying the existing population, Service biologists involved in a captive breeding program at Saratoga National Fish Hatchery released about 1,300 dime-sized "toadlets" and another 1,900 late-stage tadpoles into the area.

The tadpoles were brought from the hatchery to the lake site earlier in the week and kept in "headstart" swimming pools of lake water to help them acclimate to their new home in the wild. The tadpoles, which have been developing for almost 4 weeks, will change to toadlets in the lake within several days, depending upon water temperature.

Of the seven attempted breedings to date at the Saratoga NFH, five so far have resulted in about 9,000 tadpoles.

"Our Fisheries program plays an instrumental role in supporting the recovery of aquatic species, be they Colorado River fishes, Wyoming toads or warm springs riffle beetles in Montana," said regional director Ralph Morgenweck.

Saratoga NFH is one of several facilities across the nation raising Wyoming toads, all planned for reintroduction at the Mortenson Lake site. The other captive populations are being raised at the Wyoming Game and Fish Department's Sybille Research Unit and at zoos in Omaha, St. Louis, Toledo, Cincinnati, Detroit and Houston as well as the Central Park Zoo in New York City. Cheyenne Mountain Zoo in Colorado Springs, Colorado, has also been involved in the breeding program.

Continued on page 24

Scholarship Opportunity

Anheuser-Busch and the National Fish and Wildlife Foundation are seeking applications for the 2001 Budweiser Conservation Scholarship Program. The scholarship program supports and promotes innovative research or study that responds to today's most pressing conservation issues.

Under the Budweiser Conservation Scholarship Program, twenty scholarships of up to \$10,000 each will be awarded to cover

students' expenses for tuition, fees, books, room and board and other direct expenses related to their studies. Awards will be made bases on merit and will take into conservation the student's academic achievements and their ability and commitment to develop innovative solutions that are designed to address real and pressing issues affecting fish, wildlife, and plant conservation efforts.

To apply, students must complete an application at www.nfwf.org and submit an essay of no more than 1500 words describing

their academic objectives. In preparing the essay, students are encouraged to focus on a specific issue affecting the conservation of fish, wildlife and plant species in the United States and the research or study they propose to address the issue. The essay should specifically discuss the broader conservation benefits of the student's work.

The complete application package must be submitted to the National Fish and Wildlife Foundation and be postmarked no later than January 18, 2002.

Hatchery Reintroduces Rare Toad (continued)

"We don't want to put all of our eggs in one basket," said Mary Jennings, toad recovery coordinator for the Service. The current total broodstock population of Wyoming toads in captivity is about 200.

The Service's Fisheries, Ecological Services and Refuges staffs in partnership with Wyoming Game and Fish, University of Wyoming, and American Zoological Association are implementing the Wyoming toad recovery plan. Conservation measures include improving the survival rate at reintroduction sites and eliminating threats and further habitat degradation in the wild.

"We are doing everything we can, working in partnership with other agencies and organizations, using the best science available, to recover this species," said Morgenweck. "We are facing quite a challenge, even with such a successful captive breeding program."

The Wyoming toad was discovered in 1938 and is thought to be a glacial relic found only in the Laramie Basin. It originally lived at many sites in the floodplains of the Big and Little Laramie rivers. As a result of changes in the toad's habitat caused by irrigation, by 1980 only one population of the toads remained.

"Our fight to save the Wyoming toad underscores the need for public and private land owners to work together," said Morgenweck. "By implementing appropriate conservation measures for other species in advance of such a dire crisis, we can avoid reaching these points of possible no return."

Staff at Saratoga NFH also assisted Wyoming Game and Fish in a search for boreal toads on national forest land in an unsuccessful attempt to find wild broodstock for a new program at the hatchery. The hatchery is developing a broodstock program and on-site refuge for that declining toad species. Many species of toads world-wide have been experiencing population declines, often for reasons not yet understood by biologists.

Karen Miranda Gleason, External Affairs, Denver, Colorado

The Race is On to Save the Sonoran Pronghorn, a Species on the Edge



On the lookout. John Hervert (left) and Steve Sunde (right) of the Arizona Game and Fish Department conduct pronghorn survey flights in a Cessna with radio telemetry antennae affixed to the wings. FWS photo: Dario Bard.

Sunday, June 24, 5 a.m.

A Cessna 182 with radio telemetry antennae affixed to its wings takes off from the Yuma airport in the southwestern corner of Arizona. Steve Sunde sits at the controls with John Hervert next to him, consulting a map. Both work for the Arizona Game and Fish Department and on this Sunday, like many others before it, they will fly across the vast Sonoran desert looking for North America's fastest land animal, the endangered Sonoran pronghorn.

At a full sprint, Sonoran pronghorn can reach speeds of 60 m.p.h. As adults, they weigh up to 130 pounds and measure as much as 55 inches from head to tail. They are hardy animals, found only in the harsh Sonoran desert, a land of cacti, brush and rugged mountains where summer temperatures top 120 degrees and rainfall maxes out at 9 inches annually. In this hot, dry environment, they survive by supplementing their scarce water supply with what little moisture they can draw from the insides of cacti and other plants.

Despite their toughness, Sonoran pronghorn are in trouble. Development has fragmented their habitat and livestock is giving them stiff competition for scarce forage and water. Today, according to the latest estimates released last December by Arizona Game and Fish, only 98 adult pronghorn remain in the entire United States.

"We've got 10 pronghorn collared," says Hervert, "one in each of 10 different groups."

Using maps from previous surveys, he directs Sunde over Cabeza Prieta National Wildlife Refuge to the place where he expects to find the first collared pronghorn. Once overhead, he switches on the telemetry tracking device and as its beeps grow louder, Sunde dips his right wing and begins to circle, gradually tightening the loop while maintaining his altitude at 1,000 feet, in order to not disturb the wildlife.

"There's five of them down there," says Hervert, grabbing his binoculars to verify the count and the gender of each animal. He jots down his observations and they move to the next site.

A little after 9 a.m., the Cessna touches down back at Yuma. Hervert spotted 21 pronghorn in 7 groups that day. He took special notice of three females with fawns that covered distances of between 20 and 30 miles in just one week's time.

"That tells me that there are some pretty healthy fawns out there," he says. "We've had good rains this summer and the outlook is very good. I expect we'll see 50 to 60 new pronghorn this year."

Even with such promising predictions, the total population numbers remain low enough to cause concern among wildlife conservationists.

"We've got to worry about inbreeding, fawn survival rates, an aging breeding population, and predation by coyotes, mountain lions, and bobcats," says Dr. John Morgart, refuge biologist at Cabeza Prieta.

With the species in such a precarious situation, the refuge and the Arizona Game and Fish Department are not taking any chances.

"On average, adult pronghorn die off at a rate of 22 percent per year," explains Hervert. "In extreme drought years, all the fawns die and adult mortality is higher."

Return of the River Natives



Sonoran pronghorn. FWS photo.

To boost pronghorn survival, Hervert has begun to trudge water into the refuge on an experimental basis. He takes midnight hikes through the desert to fill tub-like containers with five gallon jugs.

Morgart, meanwhile, looks to Mexico for help. On the other side of the border, another 350 Sonoran pronghorn roam the desert. At one time, the Mexican and U.S. pronghorn roamed together, but today they are divided by a border fence and by Mexico's Highway 2.

Both Mexico and the United States classify the Sonoran pronghorn as endangered. To save the species, U.S. conservationists and agencies formed the Sonoran Pronghorn Recovery Team, which Mexican conservationists later joined.

The U.S. federal agencies on the team manage lands in southern Arizona that provide good Sonoran pronghorn habitat. At the center of this network of federal lands lies the Cabeza Prieta NWR. The 860,000-acre wildlife refuge provides the very best Sonoran pronghorn habitat in the United States.

Just across the border lies El Pinacate Biosphere Reserve, 1.7 million acres of mixed-use land, the best hope for the species in Mexico. With these sizable remnants of habitat and less than 500 pronghorn, the recovery team explores the available options.

"The ideal solution would be to enable the U.S. and Mexican pronghorn to intermingle, like they have historically," says Morgart, "but ideas on how to make that happen have proven either ineffective or too expensive."

For instance, the construction of overpasses and underpasses for the pronghorn's use might at first seem like a good way to overcome the highway issue, but experiences with other subspecies of pronghorn have shown that they do not use them. Another thought—to convert Highway 2 into a tunneled road—is financially prohibitive. And the highway represents just the first obstacle between the U.S. and the Mexican pronghorn. The issue of the border fence adds a political hurdle that is even more difficult to clear.

A substitute idea is to re-locate a few males from Mexico to the United States to diversify the gene pool. Meanwhile, the recovery team is weighing the need for a more drastic measure—captive breeding. Last April, Morgart and his colleagues visited Baja California Sur, where Mexican conservationists have started a captive breeding program to rescue the Peninsular pronghorn, a closely related subspecies. Based on what he saw in Baja, Morgart believes captive breeding holds great promise for the future of the Sonoran pronghorn.

Last April, at a meeting of the Trilateral Committee, an international body comprised of Canadian, Mexican and U.S. wildlife management officials, Morgart presented the findings of the latest aerial surveys and reported on his visit to Baja. Following his presentation, the committee directed the recovery team to develop a captive breeding proposal for consideration at the next committee meeting in a year's time.

Meanwhile, on Sunday mornings, at the crack of dawn, Hervert and Sunde are treated to a rare sight, a wonder of nature few might ever see. From the passenger-side window of a Cessna, they spot a few of the last remaining Sonoran pronghorn still surviving in the wild.

*Dario Bard, Public Affairs,
Washington D.C.*



Sacred ground. John Leivas and Terry Shaffer at the 'Ahakhav Native Plant Nursery on the Colorado River Indian Reservation. FWS photo: Dario Bard.

To the Chemehuevi and the Mohave of the Colorado River Indian tribes, the mesquite tree represents life. It provides cradle boards at birth, shelter and food during one's lifetime and a funeral pyre at its conclusion.

But throughout much of the Colorado River Indian Reservation, the mesquite tree no longer grows where it once did. In its place stands what may be considered its opposite: salt cedar, a transplant from Eurasia that is thirstily sapping the very life from the earth.

The reservation straddles both the Colorado River and the Arizona-California border, in a region where water supply issues are becoming increasingly contentious. The Colorado River is an important water source for major metropolitan areas, including Phoenix, Los Angeles, San Diego and Las Vegas, as well as Sonora, Mexico, reaching down into the Sea of Cortez. In this setting, salt cedar is earning a reputation as a glutton.

Based on a 1994 Bureau of Reclamation study, salt cedar consumes water at a rate of 2.3 acre feet per year compared to 1.6 acre feet per year for mesquite, a difference of more than 225,000 gallons per year per acre.

Ironically, salt cedar was once intentionally planted along the Colorado. During the first half of the 20th century, its long roots were counted on to stabilize river banks and control soil erosion during dam building. Largely due to its ability to grow more quickly than the native vegetation and the absence of biological controls in its new

Return of the River Natives (continued)

environment, salt cedar has quickly spread up and down the Colorado.

"This all used to be mesquite and cottonwoods," said John Leivas, a game warden with the tribal Department of Fish and Game, sweeping his hand out in front of him across a field thick with salt cedar. Leivas and his colleagues would like to see the native vegetation reclaim this and many other areas just like it throughout the reservation. It is a wish shared by many natural resource managers in the area, including the Service.

Havasu National Wildlife Refuge, up river from the reservation, operates a cottonwood and willow nursery. This nursery has become the grandfather of all native plant nurseries in the region. From cuttings and seeds originating at Havasu, nurseries have sprung up at Imperial and Cibola national wildlife refuges.

In 1996, one sprung up at the Colorado River Indian Reservation as well. With stock gathered at the Havasu refuge and from local environs, the tribes began a nursery in the then newly established 'Ahakhav Tribal Preserve.

"When the tribes established the preserve, it was over 80 percent salt cedar," said Terry Shaffer, a natural science educator at the preserve. "The nursery enabled us in restoration efforts for over 250 acres of land and 250 acres of aquatic habitat."

The tribal nursery grows mesquites, cottonwoods, willows, saltbush, wolfberry, inkweed and many other native species important to habitat restoration efforts.

"Our plants have been used to restore habitat on the Cibola and Imperial national wildlife refuges," Shaffer said. "We've also sold trees for replanting to the [tribal] Fish and Game Department, the Fort Mohave tribe, the National Park Service, the Arizona state parks, and private landscapers, too."

Shaffer has also been monitoring birds at the preserve for the past five years.

"I've seen well over a hundred different species," Shaffer said. "Around the restored areas, I'm detecting Bell's vireos, Yellow-breasted chats, and other warblers returning, plus many waterfowl in restored wetlands that are not monitored by current transects. Where there's mostly salt cedar, these birds just pass through."

"Salt cedar is really poor quality habitat," agreed Greg Wolf, Havasu refuge manager. The refuge is fighting the same battle against salt cedar that Leivas is at the reservation. In fact, the idea of a plant nursery at Havasu was conceived to supply native trees to replace the Eurasian invader.

Out in the field, Leivas and his colleagues at the tribal Fish and Game Department are taking advantage of two wildfires that burned on the reservation in 1999 and 2000.

"The fires cleared these areas of salt cedar," said Leivas, walking by some sprouting mesquite with miles of irrigation hoses running between them and down into the river. "These trees are about two or three years old."

Keeping salt cedar from returning to a burned area is a labor intensive endeavor. Emerging salt cedar must be cut by hand.

"Once these trees are tall enough, hopefully salt cedar won't be able to grow in their shade," he said.

In an area of the Colorado River Indian Reservation off the main highway lies the remains of a mining ghost town, La Paz. One could very well miss it if not for the interpretive plaque that commemorates the site. Behind the scant ruins stands the largest mesquite bog left in the region. It is a source of pride to the Colorado River Indian Tribes. It outlasted La Paz by centuries and is now reclaiming the site. Just a bit further down the road, in the midst of a field full of salt cedar, a lone mesquite tree stands defiantly over its neighbors.

Dario Bard, Public Affairs, Washington, D.C.

Kids Learn Hunting Skills—Then Put Them to the Test

It came as no surprise that during a duck-calling demonstration last December at Anahuac National Wildlife Refuge, the 100-plus excited children practicing their mallard duck calls did not lure in a single duck. The demonstration served its purpose, 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 Texas, the expo was part of the National Wildlife Refuge System Centennial celebration spotlighting the 100th anniversary of the refuge system. Anahuac is one of three "focus refuges" in the Southwest region chosen to hold special events in 2000 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 underlying purpose of the December 2 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 prizes through a raffle: 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."

Grab Some Popcorn for Refuge Videos



Calling all ducks. *These schoolchildren practice their goose calls at Anahuac NWR at the Youth Waterfowl Expo 2000. FWS photo: Michele Hannon.*

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 this year, the refuge received seed money 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 Refuge Manager 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



Coming soon to your VCR... *These refuge videos are—or will be—available through NCTC.*

National wildlife refuges are getting a "jump start" on the upcoming 2003 refuge centennial celebration by having the National Conservation Training Center produce visitor videos that highlight the best features of each refuge as we approach the 100th anniversary of the system.

Among the latest in refuge visitor videos that have recently premiered or are scheduled to debut this year are visual tours of Aransas and Matagorda Island refuges, Philadelphia's John Heinz refuge, North Carolina's Pocosin Lakes NWR, Alaska's Kenai NWR, Alabama's Eufaula NWR, Indiana's Big Oaks NWR and Wisconsin's Horicon NWR.

Individual sample copies of completed refuge videos are available to other refuges and field stations considering the use of video in their public use and outreach programs. Sample videos, by individual title, can be requested by Service employees from NCTC's image library at 304/876 7675.

Non-Fish and Wildlife Service readers can obtain ordering information about refuge system videos from Video Transfer, Inc., of Rockville, Maryland, at 301/770 9131. Additional information about video production capabilities at NCTC is available from George Gentry at 304/876-7671.

David Klinger, National Conservation Training Center, Shepherdstown, West Virginia

Saratoga NFH Helps Restore Great Lakes Fishery

A charter boat full of clients giddy with excitement pulls from a Lake Huron dock early in the morning. Their breath plumes in the early morning orange light as they gab about their quarry. Deck hands ready for a busy day. In a matter of moments, the passengers will deploy the down riggers for getting the bait deep—lake trout live deep. The biggest trout in North America, known to reach 100 pounds, is usually hauled up from an abyss 300 feet below.

Opportunities for catching lake trout in the Great Lakes have ebbed and flowed. Commercial fisheries were substantial, but over-fishing took a toll. The invasion of parasitic sea lampreys literally sucked the life blood from the fish. Lake trout populations bottomed out, but the tide is turning the other way again through the concerted efforts of the Service.

Saratoga National Fish Hatchery, tucked away in southern Wyoming, figures prominently in improving the lake trout's lot. The hatchery serves as a brood stock facility



Carrying on the lineage. Service fish health biologist Ken Peters hangs on to a Lewis-strain lake trout. The Bozeman Fish Health Center examines ovarian fluid from wild lakereels to detect diseases. FWS photo: Dave Erdahl.

producing fertile fish eggs to be hatched elsewhere, grown out and stocked. Remarkable, the source for the Saratoga brooders is right in Wyoming.

In the 1890s, railcars transported lake trout eggs from Lake Michigan to Cinnabar, Montana and pack horses took them the rest of the way to Lewis and Shoshone lakes in Wyoming. Descendants of the Lewis Lake transplants were the eventual seed for a brood stock that's helping recover the species in far-away Lake Huron. Lake trout are spawned every five years or so at Lewis Lake, and the eggs taken back to the hatchery to keep the brood stock robust and viable.

It's apparently working. Over the last 15 years, Lewis Lake-strain fish have been stocked in Lake Huron with measured success according to Jerry McClain, whose Alpena Fishery Resources Office in Michigan monitors the Huron fishery.

"They're surviving well," said McClain. "They're avoiding sea lamprey, reaching adulthood and showing up on spawning reefs."

There's another place Lewis Lake-strain fish are showing up—the ice chest. McClain notes that based on tagging studies, 75 percent of lake trout angled from parts of Huron originally came from the Saratoga hatchery.

McClain adds, "Charter boat operators like them, and the states and tribes want to bring back the lake trout. This natural top-predator of the Great Lakes is a great fit."

A great fit indeed—a natural fit, in fact.

Craig Springer, Division of Fisheries, Albuquerque, New Mexico

Fly Away! Rebecca Eckert releases a Canada goose near a float plane in Alaska. Eckert was a summer participant in the Student Career Experience Program, which offers high school, college and graduate students the opportunity to get "hands-on" experience in one of a number of federal agencies. This photo ran in the July 25 Anchorage Daily News. Photo: Bill Roth.



Fighting Fire with Borderlands Training

For four days in April, Southwest Region fire personnel Mark Ruggiero and Ernesto Reyes conducted Basic Wildland Fire Training for students and employees of the Tamaulipas Department of Natural Resources in Ciudad Victoria, Tamaulipas, Mexico.

The state of Tamaulipas borders large portions of the Lower Rio Grande Valley and Santa Ana refuges in Texas. Many fires develop in this region along the Rio Grande River on both sides of the border. Often, fires in Mexico jump the river and start burning on U.S. soil.

“The intent of the training,” said Ruggiero, “was to provide the crew with wildland fire training consistent with our training and standards to allow Mexican fire fighting forces to combat wildland fires more safely and to integrate more easily with U.S. forces along the border, and especially along the Rio Grande.”

Ruggiero and Reyes taught techniques used worldwide to manage all types of incidents including floods and fires. Reyes’ ability to teach and translate came in handy.

“I was a bit concerned on how the translation was going to go,” said Ruggiero. “Ernesto’s knowledge of basic wildland fire, and his knowledge of Spanish and of the people made the course go very smooth. Ernesto did a great job in translating all I had to say.”

The group spent several hours in the field with hands-on training, using hand tools, practicing line construction and making fire shelters. The Mexican fire crew will now be able to support fires on both sides of the Rio Grande.



Cross-border. Mexican crews learn to help fight fires south of the Rio Grande. Tamaulipas Department of Natural Resources photo.

“We will be starting the paper work to bring the crew into the United States to fight fires in the Rio Grande Valley and nationwide during fire season,” said Ruggiero. “The crew can be in McAllen [Texas] within 5 hours, ready to fight fires.”

The training was part of a Borderlands Agreement to protect the ecosystem on both sides of the Rio Grande from fire. Currently, the United States and Mexico are working on an agreement to allow American firefighters to cross 10 miles into Mexico

to help fight wildland fires occurring south of the border. In July 2000, a separate agreement was finalized between Mexico and the Department of Interior that addressed efforts to increase the efficiency of bi-national fire fighting.

*Ben Ikenson, External Affairs,
Albuquerque, New Mexico*

Fish Biologists Go Trolling in the Gene Pool



Fishing for answers. *The Region 7 Fishery Genetics Laboratory staff—left to right, Wally Buchholz, Steve Miller, Blair Flannery, Bill Spearman, Erica Kruger and Steve Klosiewski. FWS photo.*

Scientists at Service's Fish Genetics Laboratory are angling for data that could revolutionize the ways we manage wildlife.

The "Steves"—Steve Miller and Steve Klosiewski are biologists at the Anchorage lab and are simply mad about DNA. Their enthusiasm for their work is simultaneously infectious and befuddling. They all but trip over one another in their eagerness to deliver information about their research, a rush often leaves the listener far behind.

It's not that they aren't willing to translate the basic principles of genetic science into words of no more than three syllables. It's more as if they know their field of study is expanding so rapidly that, should they slow down too long in explaining it, they might never catch up.

One of the primary responsibilities of the genetics lab is to provide the technical expertise needed to allow Region 7 (Alaska) staff to contribute to negotiations involving the allocation of salmon harvests between the United States and Canada. Salmon are serious business in the Pacific Northwest, enough so to have sparked international incidents, and genetic studies can develop tools to defuse that conflict.

For instance, these studies may allow researchers to accurately identify the home spawning waters, American or Canadian, of salmon caught at sea. However, lab biologists have found that the implications and applications of their work might be far larger—and more complex and valuable—than even the task of untying the knot of American and Canadian fisheries interests.

With recent returns ranging from the disappointing to the disastrous, the Yukon River fall chum salmon runs could present additional opportunities for the Steves' practical genetic testing. In a recent project, biologists took tissue samples from chums harvested by subsistence users below the Yukon's confluence with the Tanana River. Genetic analysis not only demonstrated that non-Tanana River fish migrated through the Yukon River study area earlier than those that would finish their journeys upstream via the Tanana, but that the different populations actually tended to follow opposite banks of the river.

This study hints that the Service might some day be able to optimize fishing opportunities while protecting genetically distinct populations by focusing not only on how many fish are harvested, but also on when—and even on which side of a river—that harvest takes place.

Although most of the efforts of the genetics laboratory have focused on salmon, understanding of other fish and even mammals has benefitted from the lab's work. Recent studies on the Kenai River, for example, combined genetics and radiotelemetry to identify individual populations of rainbow trout in Alaska's largest recreational fishery. This research proved that the Kenai's rainbows could be grouped into a number of genetically distinct populations.

Such understanding can help biologists and wildlife managers develop more informed and therefore more successful, management practices.

Genetic research can be used to identify adaptable fish populations and, when needed, can be a valuable tool in establishing protection and designing restoration plans. Recent genetic studies indicate, for example, that Alaska sea otters are not a single population. The implication is that this small marine mammal, recently named a candidate for listing under the Endangered Species Act, might benefit if management plans were tailored to meet the specific needs and advantages of each of its separate populations.

The Steves envision a day when a simple, inexpensive and portable sort of a home pregnancy test for genetics will be developed. (Miller likes this analogy; Klosiewski just rolls his eyes.) When such technology becomes widespread, they say, the amount of data available to genetic researchers will mushroom, leading to increased practical applications of genetic science.

One day soon this on-the-spot testing, coupled with profiles of the different populations that inhabit or move through a fishery, may allow managers to base their daily decisions on the fish that were in the water yesterday rather than how the run looked to be shaping up on the same date a year or more in the past.

Bruce Woods, External Affairs, Anchorage, Alaska

Exploring Our Past



A Prologue to Pelican Island

As this is written in August 2001, Pelican Island National Wildlife Refuge's centennial anniversary rests quietly on the horizon, 19 months in the future. Celebrating 100 years of involvement at Pelican Island will highlight several important aspects of America's federal commitment to land conservation for fish, wildlife, plant and habitats. It's an historic moment that current and retired refuge employees eagerly anticipate.

As the months pass, bringing March 14, 1903 into sharper focus, it is also important to recognize that the creation of the first unit of the current Refuge System was not an instantaneous brainstorm of President Theodore Roosevelt, as astute as he was. More than a century ago work was underway and events occurring that ultimately contributed to T.R.'s bold action: the initial commitment to an American wildlife and habitat conservation system.

In 1900, Frank Chapman—bird curator at the American Museum of Natural History, author of bird books and editor of *Bird Lore*, the magazine of the Audubon Societies—spoke to Theodore Palmer about having someone buy Pelican Island, thereby assuring protection for the island and its wildlife. Chapman was an active member of the American Ornithologist's Union. He had visited Pelican Island in 1898 and 1900 (the 1898 visit coincided with his honeymoon; his bride was enlisted to skin and prepare a pelican series) to photograph its brown pelicans and pursue important studies of the nesting attributes and success of the colony.

Palmer was an assistant chief in the Division of Biological Survey (a forerunner to the Fish and Wildlife Service) charged with implementing the recently enacted Lacey Act to protect birds. Palmer was also a key member of the Audubon Committee on the Protection of North American Birds and involved in the resurgent Audubon Societies movement that was committed to halting the wanton slaughter of innocent bird life for the markets.

Chapman asked Palmer to look into procedures for purchasing the island from the state of Florida (Chapman's assumption about state ownership was in error; the island was federal public land).

In April 1901, William Dutcher, chairman of the Audubon Bird Protection Committee, asked Palmer to go to Tallahassee to meet with the Florida legislature about passing the "Audubon Ornithologist's model law" to protect non-game birds. Prior to 1901 only five states had satisfactory laws for non-game birds. The committee, essentially



Inhabitant of the first national wildlife refuge. FWS photo.

Dutcher and Palmer, gained passage of adequate measures in 11 states, including Florida, in 1901.

Palmer, considered an expert in wildlife legislation, frequently was called upon to make adjustments in the model law to accommodate individual legislatures' needs. Florida's new law was enacted June 4, 1901, and with its passage the Audubon committee hired wardens to protect the most important bird colonies. Those nurseries were being systematically devastated by hired gunners paid by middle-men merchants making a living selling feathers, birds, and parts, mostly to New York markets.

One of those wardens would be charged with protecting the brown pelican colony at Pelican Island in Florida's Indian River. But Chapman, in his congratulatory letter to Palmer, made it quite clear that he still wanted the island purchased and he wanted Palmer to investigate.

William C. Reffalt, now retired, was chief of Refuges from 1980–1982.

*By Bill Reffalt
Special to Fish & Wildlife News*

Fish & Wildlife Honors

Two Service Teams Win Interior's 2001 Environmental Achievement Award

Using green building design and construction practices, the Service's **Cusano Environmental Education Center Design Team** created an educational oasis at the John Heinz National Wildlife Refuge at Tinicum in Philadelphia, demonstrating the importance of the natural world to children and inspiring visitors to become responsible stewards of the environment. The building is designed to use energy efficiently; natural daylighting is supplemented with high-efficiency lighting systems. Recycled newsprint cellulose is used as insulation. A geothermal heating and cooling system draws water from a series of wells; in the winter, the building will draw heat from the water and in the summer, the water takes heat away. An innovative wastewater treatment system—the Marsh Machine—demonstrates how bacteria and other organisms work to purify water. **Jean Diehl**, president, Friends of John Heinz NWR at Tinicum; the **Honorable Donald Cook**, mayor, Prospect Park; **Dick Nugent**, refuge manager, John Heinz NWR at Tinicum; **Tom Kelsch**, director of conservation education, National Fish and Wildlife Foundation; **Jackie Burns**, outdoor recreation planner, Canaan Valley NWR; **Sarah Nicholas**, watershed protection coordinator, Alliance for the Chesapeake Bay; **Cathleen Short**, assistant director, Fisheries and Habitat Conservation; **Jim Kurth**, chief, Division of Refuges; and **Susan Maxman**, owner of Susan Maxman & Partners Architects, accepted the award.

The Service's **Division of Federal Program Activities** also received a 2001 Interior Environmental Achievement Award for its outstanding effort in creating a report entitled *Status and Trends of Wetlands in the Conterminous States 1986 to 1997*. Mandated by the Emergency Wetlands Resources Act, the report to Congress required the collection of information on the extent of wetlands from over 4,000 sample plots across the country. Using remote sensing technology, satellite imagery from 1986 and from 1997 were compared to determine any change in wetlands in each 4 square mile plot. Cartographers and wetland specialists from the Water Resource

Division of the U.S. Geological Survey helped in this analysis. The results of these studies were used to project the status of wetlands nationwide. The report concluded that the rate of wetlands loss had declined substantially. In the 1980s, wetlands were disappearing at the rate of approximately 290,000 acres per year. **Dr. Benjamin N. Tuggle**, chief, Division of Federal Program Activities; **Thomas Dahl**, wetlands biologist; and guests **John Cooper**, **Craig Faanes**, **Bill Knapp**, **Monica Farris**, and **Stephen Ambrose** accepted the award.

The Council for Excellence in Government recently selected **Thomas P. Baca**, chief of the Planning Division for the National Wildlife Refuge System in Region 2, as an Excellence in Government Fellow. The nonpartisan, nonprofit council works to improve the performance of government at all levels and government's place in the lives of American citizens.

Marshall Jones Honored

John Berry, president of National Fish and Wildlife Foundation, thanked acting Service Director **Marshall Jones** for leading the Service through a smooth transition of power. At the July reception on the Hill, Berry praised Jones for his leadership, service, and talent while serving as acting director. "(Marshall) has handled every issue in the book, but none has been more challenging or important than the leadership he has provided over these past eight months," said Berry. "His wisdom, coolness under fire, evenhandedness, concern and understanding of his troops, and his unshakable integrity, rock solid as the Constitution itself, has kept this agency on course and helped the new administration to assume its own leadership role."



his company, J.M. Associates, which has produced many features highlighting refuges for ESPN outdoor programming. Ruth Stanbridge (second from left) took home an award for her work to acquire key tracts of land to protect the Pelican Island NWR, restore habitat, combat development pressures and plan special public use facilities that will showcase this historic site. Stanbridge is the county commissioner for Indian River County where Pelican Island is located. DOI photo: Tami Heilemann.

A Hero's Photo. Interior Secretary Gale Norton (center) and the Service's acting director Marshall Jones (second from right) pose with this year's Refuge Heroes at the annual National Wildlife Refuge ceremony on Capitol Hill. Refuge Heroes for 2001 were: George Berkclacy, (middle right) retired chief of Public Affairs for the National Park Service, for his role in crafting the Centennial Campaign, the biggest communications effort the Service has ever undertaken; David Healy (far left), a television producer from Little Rock, Arkansas, who accepted an award for

Transitions... Who's Coming and Going

Dr. Ralph Morgenweck was awarded the Presidential Rank Award by **President George W. Bush** in October. Morgenweck was recognized for his exemplary professionalism, innovative approaches to fish and wildlife management, and an unusual dedication to the people of the Service. His accomplishments included the development of partnerships to manage the Missouri, Colorado and Platte River systems. The Presidential Rank Award recognizes and celebrates a small group of career Senior Executives. Winners of this prestigious award have demonstrated their ability to lead a government that delivers great service, fosters partnerships and community solutions to achieve results, and continuously pushes itself to get the job done more effectively and efficiently.

Paul Gaston received a meritorious service award for his leadership, dedication and innovations to fish and wildlife conservation, and for his contributions to the National Fish Hatchery System. Gaston's award cited his work developing the Atlantic salmon program at White River National Fish Hatchery supporting restoration in the Connecticut River. He changed the focus of the Lamar Fish Technology Center, Lamar, Pennsylvania, program to culture, nutrition, and management of Atlantic salmon and other interjurisdictional species and worked to upgrade the fish disease classification to disease-free at the Northeast Fishery Center at Lamar. In addition, Gaston authored the Atlantic salmon culture manual; initiated energy savings at Green Lake NFH; and oversaw planning and construction on the new \$12 million hatchery complex at Craig Brook NFH.

Service retiree and fish parasitologist, **Dr. Glen L. Hoffman** was awarded with an honorary professorship at the National University Federico Villarreal in Lima, Peru.

Five Service special agents, two state officers, and a federal prosecutor who teamed to break up one of the largest poaching operations ever encountered in Alaska received a **National Award for Group Achievement from the Federal Law Enforcement Officers Association**, a national professional organization representing enforcement officers from more than 57 federal agencies. Service officers honored for their work on the case, which involved an illegal big game guiding operation working out of Lake Clark National Park, include Special Agent **Jim Fuller**, who now works in Bay City, Michigan; Region 7 Special Agents **Jill Birchell**, Anchorage, and **Sam Friberg**, Juneau; Region 3 Senior Resident Agent **Dick Dickinson**, who is stationed in Minneapolis; and **Merton Cox**, a former Region 7 Service investigator who is now a special agent/pilot with the U.S. Customs Service. Lt. Franco D'Angelo and Sgt. Charles Beatty, Alaska Division of Fish and Wildlife Protection, and Assistant U.S. Attorney Steven Skrocki, District of Alaska, were also recognized for their contributions to this successful effort to safeguard wildlife resources. The federal/state investigation documented at least 12 years of commercial wildlife poaching and secured guilty pleas from 16 individuals charged with federal wildlife crimes. The defendants, who participated as guides or clients in the illegal hunting of moose, caribou, Dall sheep, and bears, paid fines totaling \$224,000 and were sentenced to serve a total of 22 years of federal probation. The State of Alaska received \$18,850 in restitution from the defendants, and two airplanes were forfeited along with dozens of illegal big game trophies.

Steve Kopach is the new chief land surveyor for the Division of Realty in the headquarters office in Arlington, Virginia. Kopach replaces **Patrick Carroll** who is now the Region 3 realty officer, in Fort Snelling, Minnesota. Kopach comes to the Service after spending 25 years with the Bureau of Land Management. His responsibilities include the coordination of all land surveying associated with the Division of Realty's land acquisition programs, refuge boundary location and riparian boundary activities relevant to Service lands.

Shane Compton is the new chief of Information Resources Management in the Washington Office. Compton began his Service career in 1999 as chief of the Branch of Procurement and Property Management in the Division of Contracting and General Services. He supervised a staff of analysts and specialists responsible for acquiring and coordinating electronic and information technology systems, as well as the managing and supervising property, fleet and quarters programs for the entire Service. Before coming to the Service, Compton was at the Department of Treasury, where he managed a \$300 million portfolio of information technology and logistic support systems.

Catrina Martin is the new assistant field supervisor for the Ventura Fish and Wildlife Office in California. Her responsibilities include supervising three divisions for the central coastal region of California, where work includes endangered species recovery, habitat conservation planning and interagency consultation. A 10-year veteran of the Service, Martin most recently served as chief for the Division of Listing in the Region 1 regional office in Portland, Oregon. Previous experience also includes service in Washington, D.C., as national coordinator for the Partners in Flight program.

Continued on page 34

Transitions...

Who's Coming and Going

(continued)

Dr. John Galvez has been selected as the new project leader for the Service's Maryland Fisheries Resource Office in Annapolis. Galvez worked for the Service's Gloucester Office of Fishery Assistance in Virginia as a fishery biologist and assistant project leader. Galvez earned doctorate and Master's degrees in fisheries and aquaculture at Auburn University in Alabama. Galvez lived in Colombia, South America, for 20 years, where he earned a bachelor's degree in marine biology at Jorge Tadeo Lozano University.

Mitch Ellis, refuge manager at Imperial NWR, has accepted the Wildlife Branch Chief position in the Natural Resource Division in Refuge System Headquarters in Arlington, Virginia.

Mary Knapp has been named field supervisor for the Ecological Services office in Reynoldsburg, Ohio. She comes to Reynoldsburg from the Service's Arcata Fish and Wildlife Office in northern California, where she served as deputy project leader. Knapp has also served as an assistant fisheries program leader and forest fisheries biologist for the U.S. Forest Service in Washington, D.C. and at Carson National Forest in New Mexico.

Len McDaniel, refuge biologist at the Valentine National Wildlife Refuge, retired in October after 38 years with the Service. Daniel first started working with Animal Damage Control and then the refuge in 1977. First as manager and later as a biologist, Len guided grassland management by studying the effects of grazing, rest, and prescribed fire on wildlife. He is a long time member of both the Wildlife Society and the Prairie Grouse Technical Council.

In Memoriam...

Legendary Service waterfowl biologist Robert H. "Bob" Smith died at his home in Central Point, Oregon, on June 3 at the age of 92. Smith joined the Bureau of Biological Survey, later the Fish and Wildlife Service, in 1936 as a biologist on the White River in Arkansas and Sabine River in Louisiana. After spending three years in Washington, D.C., on the refuge administration staff, Smith returned to the field in 1942 and spent the next quarter century exploring and documenting the waterfowl habitats of North America.

One of his first assignments was to explore the marshes and coast of Canada's James Bay—by canoe. At the time, very little was known about the breeding locations and habits of North America's waterfowl. Smith spent two summers there, using Native American guides and living off the land. After the war, Smith was one of the Survey's first biologists to train as a pilot. Using a surplus military observation plane, he was one of the pioneering biologists who conducted the first aerial waterfowl surveys of waterfowl breeding grounds in the Canadian arctic. With few changes, the survey methods he helped develop are still used by the Service today to estimate waterfowl populations. The data these surveys provide has been critical to helping maintain and increase the continent's waterfowl populations.

In 1946, Smith transferred to Klamath Falls, Oregon, to become the first "Pacific Flyway Biologist," a position he held until his retirement in 1968. From Oregon, he conducted surveys of remote arctic islands. On one of these survey missions in 1952, he discovered the previously unknown breeding grounds for the whooping crane, a species then on the verge of extinction. His efforts greatly aided recovery efforts for the whooper. In his years as a waterfowl biologist, Smith tracked migrating waterfowl from nesting areas in the arctic to wintering grounds in Central America.



Hard work. Pilot Bob Smith takes a break on Artillery Lake Narrows, NW Territories. FWS photo: J Lynch.

After retiring, Smith expanded a life-long fishing hobby to become one of the world's leading authorities on North American native trout. He traveled the length and breadth of the continent to catch and record every species of native trout. In 1994, he published *Native Trout of North America*, a book hailed by *Trout* magazine as one of the best trout fishing books of the past 30 years. It combined a wealth of biological information with passionate and gifted writing to convey the importance of the resource to casual readers.

In recent years, Smith continued his life's devotion to preserving the continent's wildlife by aiding efforts to conserve a rare breed of horse called the Kiger mustang, found only in a remote valley in the mountains of Oregon. When the population outgrew its range and the Bureau of Land Management captured and sold some of the breed in 1999, Smith purchased two mares at auction with the intent of starting his own small band.

Bob Smith was one of those who changed the face of wildlife conservation in the 20th century. The Service, the nation and the continent's wildlife owe him a great debt of gratitude.

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

Fish & Wildlife... In Brief

Literature Search Permanently Available

A Service-wide literature search that gives employees access to up-to-date, peer-reviewed scientific literature moved from pilot project to permanent service on August 1. The decision to create a formal capability for Internet access to citations and abstracts indexed in searchable databases is based on a one-year trial of the service through Cambridge Scientific Abstracts. This service was pioneered by the National Conservation Training Center's conservation library and its chief librarian, Anne Roy. During the pilot test, more than 3,000 employees used the service to conduct 18,000 literature searches. The permanent subscription will include new databases including zoological records, fish and fisheries, and wildlife information that will augment the existing database collections. Access to the literature search service and "frequently asked questions" can be found at http://library.fws.gov/lit_search_serviceinfo.htm.

Additional information is available directly from the NCTC conservation library at library@fws.gov or 304/876 7399.

Partners Orchestrate "Marsh Melodies"

Horicon NWR participated in a unique partnership with various stakeholders to promote its spring season to tourists. A seven-weekend series of special events called "Marsh Melodies" emphasized the various sights and sounds, natural events and moods of the Horicon Marsh that occur throughout the spring season and provide a variety of visitor experiences. Nearby communities and organizations received a \$40,000 reimbursable matching grant from the Wisconsin Department of Tourism's Joint Effort Marketing Program. The Marsh Melodies Committee developed themes and events for each weekend and a slogan—"Horicon Marsh, Where People and Wildlife Come Together." From April 14 through May 27, weekend themes celebrated the marsh's history, the native Americans who once lived there, and the wildlife and habitat that make up the area. Visitor activities included spear-throwing contests, guided canoe tours, guided woodland wildflower hikes, birdwatching, and a multi-media production and display of Marsh Melodies murals in downtown shop windows.

New Web Site Connects "Friends"

As valuable contributors to the National Wildlife Refuge System, refuge support groups—known as "Friends" groups—consist of private citizens who provided invaluable volunteer and financial support to their local refuge or Service facility. There are currently 209 such groups. To facilitate development of Friends groups nationwide, the Service launched a Website at <http://friends.fws.gov>, offering an array of tools and advice for those interested in starting a new Friends group, joining an existing group, or improving the group to which they already belong. Information is available about cooperating associations, helpful publications and Websites, and activities sponsored by the Service and its partners in support of friends groups. From the grants section to the mentoring and training sections, the site provides points of contact to take advantage of everything friends groups have to offer. A special thanks goes to Bob Srdock, a volunteer and Loxahatchee NWR Friends group member, for all of the technical work on the Web site.

Volunteer Group Keeps Watch at Refuge

Crab Orchard National Wildlife Refuge continues to have a dynamic volunteer program; during fiscal year 2000, 181 volunteers contributed 19,431 hours to the refuge. These volunteers perform a variety of tasks in maintenance, resource management, visitor services and education. In January 2001, a new addition to the Crab Orchard volunteer program was formed. The Volunteer Patrol is a dedicated group of 35 volunteers who patrol the refuge's recreational areas in four-hour shifts, greeting visitors, handing out refuge leaflets, conducting recreational use surveys, picking up trash and noting any vandalism or unauthorized activities. They logged more than 1,600 hours patrolling in their first six months. Crab Orchard Refuge has more than 1.2 million visits annually, most of which occur during the summer. With this type of heavy public use, this group of volunteers have their work cut out for them. The Volunteer Patrol is meeting the challenge and the visitors are reaping the rewards.

New Database of Wild Fish Health Information is Unveiled by the Service

An extensive national database outlining the distribution of disease-associated pathogens in America's wild and free-ranging fish populations, viewed as critical to fishery management decisions throughout the United States, was unveiled by the Service. Scientists said it points to "a relatively healthy picture." The National Wild Fish Health Survey is the first effort to develop a readily accessible, reliable and scientifically-sound database that documents the national distribution of specific pathogens in free-ranging fish. The project was prompted in 1996, when whirling disease began killing trout in Montana and Colorado. Whirling disease has also been found in trout populations in 20 other states. The survey is conducted through a partnership of natural resource management organizations, including other federal, Native American, state and private agencies and groups. It is available to fisheries managers and the public on a Website at <http://wildfishsurvey.fws.gov>.

Feeding the community

Fred Pinkney, environmental contaminants biologist and avid gardener, proposed replacing some turf at the Chesapeake Bay Field Office grounds with a vegetable garden. Field office staff volunteered to plant and care for the garden during lunch breaks and after hours. The Chesapeake Bay Field Office is now in its third year with Plant a Row for the Hungry. The idea is simple: most gardeners harvest more than they consume. Through Plant a Row for the Hungry, gardeners contribute extra produce to local organizations that distribute the food. This season the field office expects to harvest and donate roughly 200 pounds of food including peas, squash, tomatoes, cucumbers, peppers, watermelons and cantaloupes! For more information, contact the Plant a Row Campaign at 877/GWAA PAR (877/492 2727) or check out the group's Website at <http://www.gwaa.org/par>.

Moving Forward

This is the first issue of *Fish & Wildlife News* following the tragic events of September 11 and the ensuing national mobilization in aid, reaction and response. Among the many thoughts and emotions that emerge in these trying times, I have found that one of my most predominant feelings is a heightened appreciation for the blessings of my nation, my family, and my work. Now, as a new year begins, and a new Director comes on board, I know that there is no more important message for me to deliver than my heartfelt gratitude and thanks.

I am particularly grateful for the wonderful people I work with, from the policy makers here in Washington, to the regional and field staff in their offices and on our lands, to the support staff that keep all of us up and running day in and day out, and to each and every one of you who works diligently to further the Service's mission.

Collectively, our job is to conserve fish, plants, and animals and the lands and waters they need to survive. We who work for the Service may play different roles, but each one makes an important contribution to the mission. Our work is about the "stuff of life" and I hope we can all find some solace in what we do to conserve the nation's natural heritage of wild places and wild creatures.

In response to the terrorism of September, the news continues to report on the great resurgence of patriotism among the people of the United States. People are seeking ways to strengthen their ties to the nation and its values. Many seek quiet places that offer peace for their souls, where they can reflect on what has happened and hopefully find some solace. The Service is a steward for places of natural beauty filled with the wonder of wildlife. We can offer the people a secluded spot by a stream to dangle a line, to listen to the murmur of running water, to see an eagle soar overhead and to lose oneself in thought.

Even at a time of national hardship, our work for the Service maintains its relevance as a service to the nation. Indeed, what we do has the power to lift the spirits of others. Certainly, I hope it lifts the spirit of each of you. Furthermore, by rededicating ourselves to our work, we honor the memory of those who dedicated their lives to our mission but who are no longer with us. In times of death, we should mourn, but then we should find the will, the strength and the courage to lift ourselves up and to get on with our dedication to conserving the most wonderful blessing in the world...the stuff of life.

Nicholas Throckmorton



Fish & Wildlife News

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