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U.S. Fish & Wildlife Service

Summer 2006

Fish & Wildlife *News*



Beating the Odds /12

Cultivating Conservation /14

Tracking a Killer /18

Ranching 101 /22

Departments

News Briefs / 2

Faces in the Field / 24

Science & Technology / 25

Fish Tales / 27

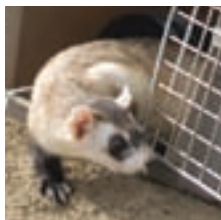
Our People / 28

Transitions / 28

Honors / 31

In Memoriam / 33

Features

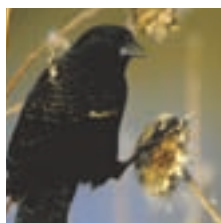


Beating the Odds / 12

The black-footed ferret's remarkable journey from the brink of extinction.

By Valerie Fellows

Photos by Ryan Hagerty



Cultivating Conservation / 14

Cooperative farming on the Bosque del Apache National Wildlife Refuge benefits people and wildlife.

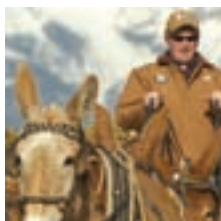
By Ben Ikenson



Tracking a Killer / 18

The Service is among several agencies on the lookout for highly pathogenic avian influenza.

By David Eisenhauer and Bruce Woods



Ranching 101 / 22

Mitch King gets a taste of the ranching life through the Walk A Mile In My Boots program.

By Perry Backus

On the cover: A black-footed ferret at the National Black-footed Ferret Conservation Center in northern Colorado.

RYAN HAGERTY / USFWS

Editor's note: You may notice some changes in this issue of *Fish & Wildlife News*. While we haven't changed our scope of coverage, we have adopted a magazine-style format (specific departments, more feature-length stories, larger photos, color) to help make the News more inviting to read. We welcome your feedback. Send comments or suggestions to: David Eisenhauer <David_Eisenhauer@fws.gov>.

H. Dale Hall



A Window of Opportunity

As fish and wildlife managers, we have learned that we must be realists and deal with circumstances as they arise to take advantage of opportunities for improved conditions for the resource. The tragedy that occurred on the Gulf Coast last fall with Katrina, Rita and Wilma injured and devastated both people and the wetland resources for which we care so deeply. But out of the tragedy came an unexpected opportunity; the understanding that wetlands provide protection for people and property in storm events.

As I travel across the country, I take every opportunity to push the message that “wetlands protect levees and levees protect people.” Wetlands are important wherever they occur, but attention is focused on the Gulf Coast and we need to take advantage of that interest. U.S. Geological Survey scientists have said that, on average, for every 2.7 miles a hurricane travels across marshes, the storm surge is reduced by one foot. In the case of Louisiana, we have lost hundreds of square miles of marsh through subsidence, salt water intrusion and physical dredging.

In my view, we need to expand public perception of the role of wetlands beyond fish, wildlife and water quality values to include storm protection.

A reasonable comparison can be made between Hurricane Camille in 1968 and Hurricane Katrina in 2005. Both were Category 5 storms and both followed similar paths as they came on shore. However, when Camille hit Biloxi and Gulfport, Mississippi, the old homes along the gulf shore weathered the storm and lasted until Katrina. When Katrina came on shore, both Biloxi and Gulfport were nearly cleared of structures along the shoreline. So, why did these

two storms of nearly equal magnitude and trajectory have such different results? The answer can be argued in the more than 1,000 square miles of marsh loss between 1968 and 2005.

Many discussions are taking place at all levels of government on how to go about rebuilding the Gulf Coast. We must do our best to ensure that in every discussion there is substantial recognition that the wetland resources must be restored and increased if the public’s financial interest in structures is to be assured. This will no doubt raise questions from non-coastal states and their elected representatives as to why substantial funding should be directed — as they may see it — away from their states to help Gulf states. When given the opportunity, I ask each of you to help send the messages that *where* wetlands are being restored is not the most important issue. The important issue is to change the paradigm that wetlands are only mitigation for structures that provide flood and storm protection to one that *recognizes wetlands in and of themselves as storm damage abatement structures*.

In my view, we need to expand public perception of the role of wetlands beyond fish, wildlife and water quality values to include storm protection. The recognition that coastal wetlands helped reduce the storm damage last fall opens a door to make people aware of the role of floodplain wetlands and barrier islands in reducing flood damage and storm strength. In 1993, General Jerry Galloway led an effort to document the damages from the Missouri River flood and emphasized many of these same contributions of floodplain bottomland hardwoods. Unfortunately, public interest soon waned. By using the storms of last fall and the human devastation that occurred, we have another opportunity to resurrect the Galloway findings by connecting the upstream river with the downstream building of marshes.

I hope you’ll join us in taking advantage of the opportunity before us and move the current mindset of wetlands conservation beyond mitigation.

Gulf Coast Recovery

Secretary of the Interior Dirk Kempthorne in July announced \$256 million in new Federal funds to restore vital Gulf coastal wetlands on national wildlife refuges, rebuild Interior facilities, and undertake other hurricane recovery projects.

"We stand with the people of Louisiana and other Gulf states as they seek to rebuild their communities and restore their coastal ecosystems," Kempthorne said. "This includes providing new funding to restore national wildlife refuges, national parks and other Interior facilities in Gulf Coast states that were devastated by hurricanes Katrina and Rita."

Kempthorne emphasized that wetland restoration is paramount to both the people and wildlife of the Gulf Coast region.

"More than 118 square miles of coastal wetlands and marshes on the southeastern Louisiana coast were turned into open water by the storms," he said. "The damage to this coastal ecosystem has accelerated wetland losses, endangering communities across the coast and threatening nationally significant fish and wildlife resources and important on-shore facilities."

President Bush signed legislation in June providing \$256 million for Louisiana, Alabama, Mississippi, Texas and Florida. The funds are in addition to \$70.3 million provided in Dec. 2005



Secretary of the Interior Dirk Kempthorne (left) at Bayou Sauvage National Wildlife Refuge in Louisiana, with Service Southeast Regional Director Sam Hamilton (center) and Southeast Louisiana Refuge Manager Ken Litzenberger.

Combined, the two appropriations provide a total of \$162.4 million to restore national wildlife refuges, many of which were severely damaged by the storms; \$74.4 million to help national parks, which also were hard hit; \$31 million to assist the Minerals Management Service, which had to relocate its regional headquarters; and \$15.5 million to enable the U.S. Geological Survey to replace stream gauges and other vital water monitoring equipment. The appropriations also include \$43 million for grants to states for historic preservation.

The funds are being used to remove debris and clear canals; repair levees, docks, bridges, roads, campgrounds, and trails; restore damaged or destroyed buildings; replace lost equipment, vehicles, and boats; and restore damaged cultural artifacts. The restoration funding also will generate millions of dollars in purchases, create thousands of jobs, and help to revitalize the region's economy.

"People cannot live there if the Delta dies. It's as simple as that," Kempthorne said. "This is a national challenge that requires all of us to work together to solve. Restoring a sustainable wetland ecosystem must be a part of any rebuilding plan if we are to address future risks to human safety."

Louisiana contains 45 percent of the nation's coastal wetlands, including 10 national wildlife refuges and one national park, covering more than 310,000 acres.

"Our national wildlife refuges and national parks contribute to the larger solution by restoring their levees, clearing their marshes and wetlands of debris, and working with state and local partners on long-term, common-sense solutions to halt the accelerated loss of coastal wetlands," Kempthorne said.

"Nearly \$80 million of the funding for the Fish and Wildlife Service will be used on national wildlife refuges and other Service facilities in Louisiana," he said. "We'll be ready when Louisianans are ready to seek outdoor recreation."

Earlier in the day, Kempthorne took a helicopter tour of some of the devastation and visited Bayou Sauvage National Wildlife Refuge where he saw the impacts of salt water intrusion into the refuge and the loss of important marshes inside the levees. Many acres of trees in the refuge were once a beautiful hardwood oasis for songbirds and refuge visitors alike. Today, because of the saltwater intrusion, the trees are dead.

"Without a self-sustaining coastal wetland ecosystem, not only are fish and wildlife resources at risk, but the coastal communities, infrastructure and industries will surely face increasing risks as the protective wetlands, barrier islands and other natural features are converted to open water," he said.

Kempthorne commended refuge employees for their extraordinary efforts in responding to last year's storms and rebuilding their communities and refuges.

"U.S. Fish and Wildlife Service employees have served, and continue to serve, the American public in so many ways, and I just want to thank them for a job well done," he said. □

DOI Communications

'On-The-Ground' Conservation

Administered by USDA's Farm Service Agency, the voluntary Conservation Reserve Program is just one way the Farm Bill works to deliver conservation on the ground. The Conservation Reserve Program—or CRP—has helped create thousands of acres of habitat to benefit wetland and grassland birds and other species.

According to Dave Walker of the Service's Partners for Fish and Wildlife Program, the CRP has various levels of benefit to wildlife and habitat depending on the area of the country. The Service's eight-state Midwest Region is a major player in the CRP, and the wildlife of the region sees big dividends.

Nearly 22 percent of the national acreage enrolled in CRP is in the Midwest Region. More than 90 species of birds have been reported using CRP lands in the Midwest, including large numbers of grassland birds.

In the Midwest Region, national wildlife refuge staff—especially through the region's 11 wetland management districts—work to restore habitat on CRP

lands, which Regional Refuge Supervisor Jim Leach calls “valuable components of our watersheds on refuges and waterfowl production areas.”

Restoration of lands enrolled in CRP helps stabilize lands near refuges and waterfowl production areas, reducing erosion and “providing a direct benefit to water quantity and quality on refuges,” Leach says. And of course, more lands with grass cover provide a benefit to refuges and the wildlife that use them.

Leach calls the CRP restoration projects “complementary to [conservation on] our national wildlife refuges.”

With so many acres enrolled in CRP, Midwest Region biologists are grateful for assistance in prioritizing the areas most in need. The region's Habitat and Population Evaluation Team office, located in Fergus Falls, Minnesota, produces “Predicted Duck Pair Accessibility Maps,” commonly known as “Thunderstorm Maps” because of their perceived resemblance to a Doppler radar image of a thunderstorm.

These thunderstorm maps display predictions of the number of upland nesting ducks pairs—mallards, blue-winged teal, gadwall, northern pintail, and northern shoveler—that could potentially nest in the upland portion of every 40-acre block of the Prairie Pothole Region of Minnesota and Iowa.

The key data in thunderstorm maps are used to help identify priority sites for the protection or restoration of grassland habitats for breeding waterfowl. The maps are also useful in identifying priority wetland complexes to be protected through acquisition and easements, and to be enhanced by private land wetland restorations—many of them through CRP.

The benefits of the CRP are not limited to wildlife. Landowners who participate in CRP recognize the wildlife values of their restored lands. In a survey of CRP participants funded by the Farm Service Agency, more than 75 percent of respondents believed the CRP benefits to wildlife were important, and nearly 60 percent reported noticing the increased opportunities to observe wildlife on their restored lands.

In the Midwest, CRP participants specifically pointed to the positive effects on wildlife and habitat and benefits to sportsmen and sportswomen, water and air quality as reasons they were happy to have enrolled their lands.

More importantly, nationwide, many who responded to the survey said they derived satisfaction from doing something beneficial for the environment. □

Rachel F. Levin, External Affairs, Fort Snelling, Minnesota

Native Treasures

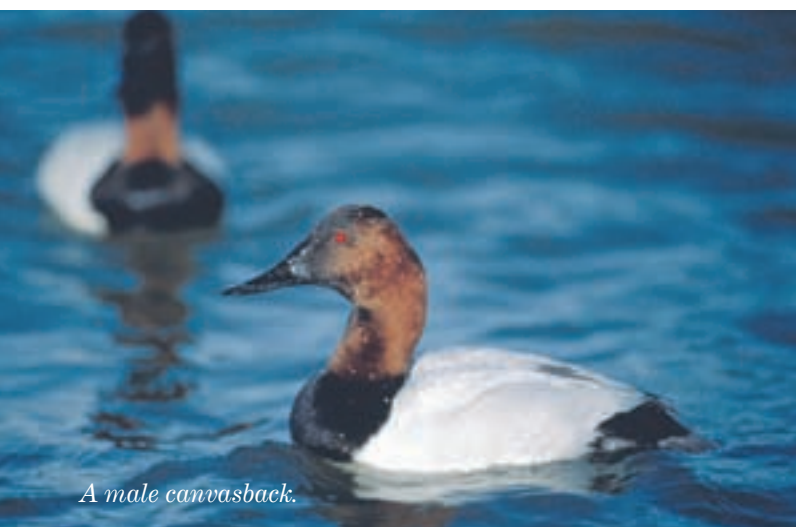
For many Native Americans, eagles are not simply revered because they seem majestic, or because they have a regal bearing or a fearsome face. Because eagles are believed to fly higher than any other bird, they are viewed as the only creature to have seen the face of God.

That is why eagle feathers are important to so many Native American cultural and religious rituals—and why it can be frustrating to tribes when they encounter long waits for feathers or eagle parts from the National Eagle Repository in Denver.

The Repository is where eagle feathers and parts are collected by the Federal government for distribution to Native Americans. The procedure was an outgrowth of extensive legislation protecting the birds when their populations spiraled into serious decline several decades ago.

Feathers and eagle parts are collected from dead birds that are sent to the Repository, where they are subsequently cataloged and eventually distributed to tribal members as requests are received and as inventory will allow. But the Federal government recognizes nearly 600 tribes and the demand for feathers far outstrips the supply, and some requests can take years to fill.

It was that dilemma that moved the Zuni tribe in southwestern New Mexico to build an eagle aviary on their reservation in 2000, where members would care for injured eagles that could not be reintroduced into the wild. There, feathers would be gathered when the birds molted each year, between June and September. >>



A male canvasback.

(Native, continued)

It was the Zuni example that in turn moved the Iowa tribe in northcentral Oklahoma to follow suit and build their own eagle aviary—and to take the Zuni project a step further: the Iowa would not only care for non-releasable eagles, but they would nurse those eagles that might be able to return to the wild, and eventually release them.

With \$250,000 from the Fish and Wildlife Service and \$50,000 from the tribe, the Iowa build their own eagle aviary, dubbed the Bah Kho-je Xla Chi (Grey Snow Eagle House). It was dedicated in January 2006. And in just a little more than four months, the tribe released an eagle that had overcome a gunshot wound—the first ever to be rehabilitated and released from an Indian facility.

For the Iowas, it was a profoundly emotional moment.

“Hopefully, this eagle will carry the message back to the Creator,”

said Iowa wildlife manager Victor Roubidoux, “and maybe we will get some blessings. This is a great honor for us. This means a great deal to us. In Indian culture, we believe the eagle is the only creature to have seen the face of God.”

John Antonio, the Native American Liaison for the Service’s Southwest Region, said it seems likely that more tribes will follow the example of both the Zuni and the Iowa, who have taken logical and practical steps to ease the shortage of eagle feathers and parts.

Antonio called the eagle release by the Iowas “a historic event,” and said a number of eagles—golden as well as bald—are euthanized each year because of a lack of facilities to care for birds that can live out their life but cannot be released back into the wild. Now there are two such facilities. □

Ken Burton, Public Affairs, Washington, DC



Victor Roubidoux (foreground), wildlife manager for the Iowa Tribe in southcentral Oklahoma, watches an eagle rehabilitated in the tribe’s first eagle aviary, dubbed the Bah Kho-je Xla Chi (Grey Snow Eagle House), released into the wild.



Deb Burger, manager of the Chattahoochee Forest National Fish Hatchery in Georgia, feeds trout with two young volunteers.

Rainbow Trout by the Numbers

A new peer-reviewed study by economist Dr. James Caudill of the Fish and Wildlife Service shows that when you toss a lure toward a rainbow trout produced by a National Fish Hatchery, you’re also fueling an economic engine that can drive for the long haul.

Caudill’s research was based on stocking information from 11 National Fish Hatcheries producing the largest quantities of rainbow trout among the 70 National Fish Hatcheries across the country.

In 2000, those hatcheries raised 9.4 million rainbow trout, providing nearly four million angler-days on the water. Retail sales on items associated with fishing for rainbow trout—such

as food, gas, lodging, rods and reels, and bait and tackle—amounted to \$172.7 million. That spending provided employment for 3,502 people and an income of \$80 million. Those wage earners contributed back to public treasuries—\$2.9 million in state income taxes, and \$10.6 million in Federal income taxes. The bottom line is that fishing for rainbow trout generated a total economic output of \$325.1 million in one year.

Taxpayers fund the National Fish Hatchery System and they paid \$5.4 million to produce those rainbow trout. This means that every dollar spent on rainbow trout production translates to \$32.20 in retail sales and \$36.88 in net economic value.

Chasing Rainbows

National Fish Hatcheries with significant responsibilities in rainbow trout production.

Alchesay-Williams Creek NFH, Arizona

Chattahoochee Forest NFH, Georgia

Dale Hallow NFH, Tennessee

Ennis NFH, Montana*

Erwin NFH, Tennessee*

Garrison Dam NFH, North Dakota

Greers Ferry NFH, Arizona

Hotchkiss NFH, Colorado

Jones Hole NFH, Utah

Neosho NFH, Missouri

Norfork NFH, Arkansas

Willow Beach NFH, Arizona

White Sulphur Springs NFH, West Virginia*

Wolf Creek NFH, Kentucky

*Brood stock hatcheries.

For more information, visit www.fws.gov/species/rainbowtrout.

Trout are not created equal. Hatchery-bred rainbow trout express the imprint of scientists in the differing features of the various strains and they are not as generic as you might believe. These strains and their specific fisheries management purposes help biologists meet specific needs in the modified habitats where they are stocked. One strain under development now at Ennis National Fish Hatchery in Montana shows a promising resistance to Whirling Disease.

And not all rainbow trout are meant for a quick put-and-take. Some grow to trophy size in only a few years. The Arlee and Shasta strains, named for waters from which they were developed, are the largest of rainbows, reaching 30 pounds in four years. Garrison Dam National Fish Hatchery, in partnership with the North Dakota Game and Fish Department, puts rainbow trout in 46 waters across the state with a dozen of those lakes and rivers turning up two-foot-long trout, tipping the scales at five to 15 pounds.

Anglers in nearly every state in the Union pursue rainbow trout, and when they do, you know that the effects are being felt by mom-and-pop businesses, as well as in the corporate board room.

Read the report online at www.fws.gov/southeast/fisheries/RainbowTrout-05.pdf. For additional information, e-mail rainbowtrout@fws.gov. □

Craig Springer, Fisheries and Habitat Conservation, Albuquerque, New Mexico

Learning to Fly

On June 22, two whooping crane chicks hatched at the Necedah National Wildlife Refuge, Wisconsin. This historic event marks the first time in more than 100 years that a whooping crane has hatched in the wild in the Midwest.

The two chicks are offspring of a whooping crane pair from the ultralight-led crane class of 2002. The pair nested earlier this spring at the refuge, but their eggs were lost—likely because of predators. They renested and began incubating on May 23.

“With the hatching of the first two wild chicks from the migratory whooping crane reintroduction, another chapter in wildlife history has been made. The journey took six long years of dedication, vision and believing it could happen—as well as the blood, sweat and occasional tears of the many partners that worked on the project,” said John Christian, co-chair of the Whooping Crane Eastern Partnership (WCEP).

“This is truly the start of a new generation of wild things and a symbol for restoring our wild places.”

In May, another “first” occurred when two whooping crane chicks from a nest in the wild hatched in captivity. WCEP biologists removed the two eggs from a nest at the Necedah NWR after their parents wandered away from the newly laid eggs for a long period

of time. The chicks were hatched at the Patuxent Wildlife Research Center in Laurel, Maryland. They will join the crane Class of 2006, which will learn the migration route between Necedah NWR and Chassahowitzka NWR in Florida this fall by following Operation Migration’s ultralight aircraft. □

Rachel F. Levin, External Affairs, Fort Snelling, Minnesota



RICHARD URBANEK / USFWS



WCEP

Above: Adult whooping cranes with chicks.

Left: Young whooping cranes are led south each year behind ultralight aircraft.

A Step Forward for Wetlands

This spring, through a series of carefully formulated and executed levee breaches, the Fish and Wildlife Service re-introduced San Francisco Bay water to a set of ponds known as the Island Ponds near Alviso, California. The effort heralded a major step forward in the ambitious 15,100 acre South Bay Salt Pond Restoration Project, the largest wetland restoration project on the West Coast.

"Three years ago, I stood along the Bay to announce an historic public-private partnership—moving 16,500 acres from Cargill Salt to the California Department of Fish and Game and the U.S. Fish and Wildlife Service," said Senator Dianne Feinstein, who in March joined Deputy Secretary of the Interior Lynn Scarlett, California Resources Secretary Mike Chrisman and other officials and supporters to honor the three year anniversary of the restoration project.

"I said at the time that I'd like to see the restoration completed in my lifetime," Feinstein said. "And today, we are seeing major progress toward that goal. So far more than 12,000 acres of wetlands have begun the restoration process, including the 479 acres of salt ponds opened to Bay water. This is a major milestone in the largest wetlands restoration effort in California history."

The visit to the Don Edwards San Francisco Bay National Wildlife Refuge marked the first time several of the former Cargill Salt Ponds have been restored to San Francisco Bay tidal action in more than 60 years. Feinstein

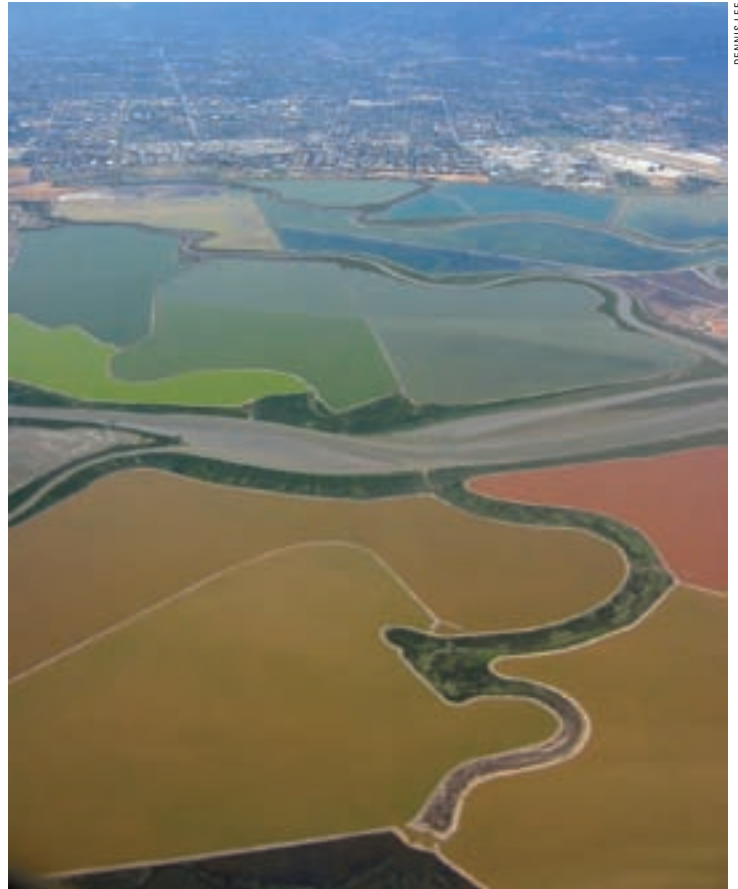
and other Federal and state officials were briefed on the Salt Pond Restoration Project and reviewed the results of one of the controlled levee breaches of the Island Ponds near Alviso.

They also met with project managers to review the progress of the long-term restoration planning process—a process which culminated in January with the release of three long-term restoration alternatives for the project. Those alternatives are currently undergoing environmental review.

"San Francisco Bay is a site of international significance, providing habitat for fish and wildlife including millions of birds and other species," Scarlett said. "This largest tidal wetlands restoration project on the West Coast is critical to ensuring the vitality of this region and the Pacific Flyway. We are just beginning to reap the benefits of this unprecedented effort, which will ultimately restore more than 15,000 acres of wetland habitats."

The partnership includes the Fish and Wildlife Service, U.S. Geological Survey, U.S. Army Corps of Engineers, the California Department of Fish and Game, the Coastal Conservancy, the Santa Clara Valley Water District, the San Francisco Bay Joint Venture, and many other organizations.

Since the initial restoration activities have begun and pond salinity has been reduced, Refuge staff have already observed a 100 percent increase in waterfowl and a 130 percent increase in shorebirds' use of these ponds.



DENNIS LEE

Long-term planning for the Salt Ponds Restoration Project began in 2003. The ponds were purchased from Cargill using state, Federal and private foundation funds. In addition to planning for long-term restoration, the Fish and Wildlife Service, and the California Department of Fish and Game have been implementing the Initial Stewardship Plan (ISP) for the salt ponds. The goal of the ISP is to gradually reverse the salt making process at the project site, in preparation for launching the first phase of restoration in 2008.

The restoration planning process is a broad based effort involving technical consultants, scientists with both local and international expertise, and the active participation of local stakeholders who meet regularly to provide input on the design of the project. The three goals of the long-term restoration plan are to restore habitat, improve flood protection and increase public access and wildlife-dependent recreation in the South Bay.

For more information about the South Bay Salt Pond Restoration Project, please visit the project web site at <www.southbayrestoration.org>. □

DOI Communications



A Voyage to Paradise

In April, PBS aired the two-part "Voyage to Kure," featuring Jean-Michel Cousteau. Filmed in 2003, the 2,500-mile journey explores the tiny coral islands and expansive coral reefs of the Northwestern Hawaiian Islands, which have escaped most of the impacts of human life and are protected today by the Fish and Wildlife Service, State of Hawaii and NOAA's National Ocean Service.

In June this year, President George W. Bush used his authority under the Antiquities Act to designate the area as a national monument.

Described by Cousteau as a "glimpse of paradise before people," this vast chain of islands and reefs—stretching more than 1,200 miles or the distance from Washington, DC, to Wichita, Kansas—was set aside for protection by President Theodore Roosevelt in 1909. Midway Atoll, also part of the Northwestern Hawaiian Islands chain, was put under the U.S. Navy's protection

in 1903 to prevent the slaughter of seabirds. It was established as a national wildlife refuge in 1988, and also designated the Battle of Midway National Memorial by Secretarial Order in 2000. President Bill Clinton further protected the marine environment in 2000 by establishing the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve.

Three Service employees accompanied Cousteau's team on the voyage through the Hawaiian Islands and Midway Atoll National Wildlife Refuges and several others were interviewed onsite at islands along the journey. Each of the employees work for the Hawaiian and Pacific Islands National Wildlife Refuge Complex, which includes 19 Refuges scattered across a vast area stretching more than 3,000 miles north to south and 5,000 miles east to west.

The film provides a glimpse of the operational complexity of the Pacific Remote Island refuges, where access is available only by

boat or, in a few cases, aircraft (there's no driving between field stations here!). Like many other coastal refuges, weather, wind and currents play a huge role in management operations. Illegal fishing, marine debris and invasive species all impact the native ecosystem. Many natural resource sites are also important cultural or historic sites, doubling the importance of their conservation.

Though the project was filmed when fewer seabirds were on

the islands, it still captures the beauty of the islands and their unique and diverse wildlife. The stunning underwater footage showcases the largest and most pristine coral reef ecosystem in America. A preview of the documentary and additional information is available at <www.pbs.org/oceanadventures> and at <www.oceanfutures.org/kure>. □

Barbara Maxfield, External Affairs, Honolulu, Hawaii

Service Awards Nearly \$8M in Tribal Grants

The Fish and Wildlife Service in May awarded nearly \$8 million to help Federally recognized Indian tribes conserve fish and wildlife on their lands.

The Service awarded the grants under two programs: the Tribal Landowner Incentive Program and Tribal Wildlife Grants Program. The Tribal Landowner Incentive Program supports Federally recognized Indian tribes to protect, restore, and manage habitat for species at risk, including Federally listed endangered or threatened species, as well as proposed or candidate species on tribal lands. The Service is providing more than \$2 million to help fund 15 Tribal Landowner Incentive projects.

About \$6 million will help fund 28 projects under the Tribal Wildlife Grants program. These grants are awarded to Federally recognized Indian tribes to benefit fish, wildlife and their habitat, including species that are not hunted or fished.

"The Service's Tribal Landowner Incentive and Wildlife Grant programs provide financial

resources and encourage cooperation while supporting the authority of the tribes to manage their resources," said Service Director H. Dale Hall. "The flexibility of the programs allows the tribes great latitude in funding natural resource management actions that are driven by their conservation priorities."

Since 2003, the Service has put more than \$38 million to work for tribal conservation efforts through the two grant programs.

Indian tribes have a controlling interest in more than 52 million acres of tribal trust lands and an additional 40 million acres held by Alaska Native corporations. Much of this land is relatively undisturbed, providing a significant amount of rare and important fish and wildlife habitat.

Among the funded Tribal Landowner Incentive Program grants are the following awards:

- The Nez Perce Tribe in Idaho will receive \$141,108 to support basic research on pollination and herbivore impacts on the three rare plant species, Jessica's aster, Palouse goldenweed, and the listed Spalding's catchfly. >>



French Frigate Shoals, Hawaiian Islands National Wildlife Refuge.

(Tribal, continued)

■ Sisseton-Wahpeton Oyate of the Lake Traverse Reservation in South Dakota will receive \$141,171 to implement their Comprehensive Fish and Wildlife Management Plan and specifically to increase mallard and teal production within their reservation.

■ The Stillaquamish Tribe in Washington will receive \$117,000 to enhance and expand salmon spawning areas along the North Fork of the Stillaquamish River.

■ The Pueblo of Santo Domingo will receive \$148,348 for removal of invasive salt cedar and Russian olive trees and planting of native vegetation to improve habitat.

Funded Tribal Wildlife Grants include:

■ The Peoria Tribe of Indians of Oklahoma will receive \$249,997 for the reintroduction of the Oklahoma endangered mussel and the Neosho mucket into the Spring and Neosho Rivers, and research into the

artificial propagation of a Federally threatened fish, the Neosho madtom.

■ Chevak Native Village of Alaska will receive \$239,883 to collect data on natural resource assets and develop a Coastal Land Conservation and Protection Plan for tribal coastal lands bordering the Bering Sea.

■ The Menominee Indian Tribe of Wisconsin will receive \$196,782 to conduct research on black bear populations and habitat, and to study sturgeon and timber wolf reintroduction.

■ The Wampanoag Tribe of Gay Head (Aquinnah) of Massachusetts will receive \$145,040 to purchase critical equipment (Larval Identification and Hydrographic Data Telemetry instrument) for their Bay Scallop Enhancement Program.

A complete list of awards can be found at www.fws.gov/home/feature/2006/tribal_grants.pdf. □

Patrick Durham, Native American Liaison, Washington, DC

Interpretive Trail Replaces Words with Art

In early November, condensed fog drips silently from the trees, the air is cool and moist, and the forest is silent except for the gurgling sounds of water running over the gravel bars and cascading over fallen logs in the shallow stream. Suddenly, dark ribbons shoot through the water, fins and backs break the surface and staccato water-slaps of fanned tails announce that chum salmon have returned to spawn.

Until 2003, salmon had been absent from this stream flowing through Washington state's Willapa National Wildlife Refuge for 65 years. Well-intentioned efforts to transform the tidal marsh at the mouth of the stream into a freshwater "display pond" when the refuge headquarters was built in the 1940s led to installation of a tidegate that blocked fish passage.

Restoration work has transformed this small, degraded stream into prime spawning habitat for chum salmon and cutthroat trout. Five years following restoration, 500 chum salmon returned, cutthroat could be found in every pool, and juvenile chinook and coho salmon were using the stream as rearing habitat. Salamander and frog species absent for years reappeared.

The restoration provided a tremendous opportunity to tell a good news story to refuge visitors—and perhaps inspire landowners to do the same with degraded streams on their land.



Steel salmon swim through the trees, reminding Salmon Trail visitors of the interconnectedness of fish and forests in the Pacific Northwest.

The challenge was how to get the visitors close to the salmon and other stream wildlife without damaging the habitat or scaring away the fish—and to do it in a memorable way.

In 2002, the refuge charged students of the Public Art Program at the University of Washington with the task of designing a trail that is artistic in approach but interpretive in function. The result is the Salmon Trail—600 feet of nature-inspired art, which opened in 2003.

The trail starts beside a sculpture of a 20-foot chum salmon skeleton. The beginning of the trail is an accessible boardwalk across tideflats—the former display pond—where fish move between Willapa Bay and the stream.

But this isn't the typical boardwalk that goes from start to end in a straight line. The Salmon Trail boardwalk meanders, widens, narrows and divides, inviting visitors to linger. Frogs cast in bronze relief decorate the boardwalk railings.

Other Duties as Assigned

Fish and Wildlife Service employees often are called upon to pitch in and do work outside their regular job descriptions. Since many of these jobs also make great stories, *Fish & Wildlife News* invites you to share your most unusual and unsavory tasks in a series called "Other Duties as Assigned."

Please send a detailed description of your most memorable "other duties" (between 300–500 words) to: David Eisenhauer, Editor, *Fish & Wildlife News*, 1849 C St. NW, Room 3360, Washington, D.C. 20240. Fax: 202/219 2428, <David_Eisenhauer@fws.gov>



Interpretive panels are replaced by student-created art: for example, 50 steel salmon silhouettes whimsically swim through the trees above the stream, reminding visitors of the close relationships between salmon and forests in the Pacific Northwest. The art engages visitors, leaving them with the message that chum salmon die when they spawn, their remains returning nutrients to the forest.

Because this message isn't handed to them on an interpretive panel, visitors must find the meaning on their own. The visitor owns the discovery, and the extra effort should lead to better appreciation of the resource and retention of the message.

The trail shields trailside views of office and equipment buildings, while providing places where visitors can get close to the salmon without scaring them away. An "Amphibitheater" provides an outdoor setting for interpretive talks presented by refuge volunteers. The trail is a work in progress; additional art pieces will be added as funds permit. □

Susan Saul, External Affairs, Portland, Oregon

Service Special Agent Honored

With the echo of Native American drums and the mournful wail of bagpipes, the Department of the Interior (DOI) remembered three of its own at a May 10 ceremony marking National Police Week.

Special Agent Tom Cloherty of the FWS Office of Law Enforcement (OLE) and two National Park Service officers, all of whom died on duty last year, were honored at the Washington, DC event and at other observances that paid tribute to the Nation's "fallen officers." The DOI memorial ceremony, which included a formal wreath laying, also recognized the important contributions of law enforcement professionals to the Department's mission.

"Every law enforcement officer is aware that each day they report for work may be their last. Yet they still report for duty...ready to serve and protect," said Acting Secretary Lynn Scarlett, who addressed those gathered at the ceremony.

Other speakers, including Deputy Assistant Secretary for Law Enforcement and Security Larry Parkinson, National Park Service Director Fran Mainella, and FWS Deputy Director Marshall Jones, also offered tributes, praising both the department's three fallen officers and their many colleagues who continue to serve the Nation.

"Tom Cloherty called being a Fish and Wildlife Service special agent his dream job," noted Deputy Director Jones.

"His energy and enthusiasm for the work were matched only by his gratitude for having the opportunity to protect wild things and wild places."

Cloherty, who was stationed in East Orland, Maine, died of cardiac arrest on December 7, 2005, while participating in OLE's agent fitness program. A former Coast Guard officer and tall ship mariner, he joined the Service in 2004 and had recently completed OLE's on-the-job agent training program.

Cloherty was also honored at other Police Week events. His name was added to the Peace Officers' Memorial at the Federal Law Enforcement Training Center in Georgia where he had completed criminal investigator training and the Service's Special Agent Basic School. Cloherty's name was also engraved on the marble walls of the National Law Enforcement Officers Memorial in Washington, DC along with the names of 154 other law enforcement officers who died on duty in 2005.

All of these fallen officers were remembered at a candlelight vigil at that site on May 13 and at the 25th annual National Peace Officers' Memorial Service, which was held May 15 on the West Front of the U.S. Capitol. That convocation featured a

keynote speech by President Bush and the traditional "roll call of heroes."

"Hearing those names brings home the meaning of Police Week," said Special Agent in Charge Kevin Garlick, who represented the OLE at the Capitol event. "All law enforcement officers should be proud to see the Nation honor their service and sacrifice." □

Sandy Cleva, International Affairs, Washington, DC



Chief Kevin Adams (left) and Senior Wildlife Inspector Roland Marquis lay a wreath honoring Special Agent Tom Cloherty and other fallen FWS officers during the Interior Department's 2006 Law Enforcement Memorial Ceremony.

LAVONDA WALTON / USFWS

Workshop Connects IT Experts

An information technology (IT) workshop held earlier this year at the National Conservation Training Center in Shepherdstown, West Virginia was the first Service-wide IT gathering since 2001. Nearly 200 people attended the workshop, including Service staff, vendors and guests from other agencies.

The workshop had something for everyone, ranging from spyware cleanup tactics to the latest and greatest technology tools. Sessions focused on hot topics such as "Homeland Security Presidential Directive 12" (a mandatory, government-wide standard for secure and reliable forms of identification issued by the Federal government to its employees and contractors) to IT security.

Participants discussed their daily activities and challenges in a session with Service Information Technology Manager and CIO Mike Howell and Deputy CIO Hope Mentore-Smith. They also attended the first-ever "IT Makeover" banquet—complete with Caribbean cuisine, entertaining skits and a presentation of "You Made IT Happen" awards—and enjoyed IT jeopardy and "war stories" contests, as well as other social events.

NCTC staff used the workshop to demonstrate new communications technologies. For the first time, people unable to attend the workshop could view some sessions via Webcast. Nine plenary sessions were

videotaped and Webcast live from NCTC's Byrd Auditorium.

Howell urged participants to share knowledge, provide practical tools and skills to improve service to customers, keep an open mind to new ideas, and cultivate professional relationships. At the workshop closing, he asked everyone if the workshop met these objectives. Everyone agreed they had.

The majority of participants said they enjoyed brainstorming between sessions and gave the workshop high marks for subject topics and quality of instructors.

"This was one of the best off-site conferences I've been to," said Julie Rundgren, Enterprise Projects Liaison in Region 9. "As a new Service employee, I got a lot of useful information from it."

"I have been going to IT conferences for 25 years and this conference is definitely on par or better than most put on by professional conference organizations," said Devin Olson of the Bureau of Land Management.

Howell summed up the workshop by saying it "has to be one of the most rewarding experiences in my 30 year professional career." The next IT workshop is tentatively scheduled for February 2008 at NCTC. □

Diane Knudson, IT Training Coordinator, NCTC



Volunteers Ron and Nell Harwood with the Natchitoches NFH 75th Anniversary display.

Natchitoches National Fish Hatchery Celebrates 75 Years

Natchitoches National Fish Hatchery (NFH) celebrated its 75th anniversary in May, drawing a crowd of public officials, area citizens and businesspeople eager to show their support for the Louisiana facility. Speakers included Louisiana Congressman Jim McCrery and Joe Moran from the Washington Office of the Division of the National Fish Hatchery System. Both men spoke about noteworthy contributions the hatchery makes in the economy—local and national—and to the larger cause of conserving America's fisheries.

Natchitoches NFH had its genesis in providing game fish for waters both public and private, principally largemouth bass, channel catfish, and sunfishes, in what eventually became known as the Farm Pond Program. The facility was constructed at a time of increasing awareness in conservation, and an emerging land ethic. As the Soil Conservation Service (today's Natural Resource Conservation Service) encouraged rural landowners to conserve topsoil and water, farm ponds sprung up in the rural landscape.

Natchitoches NFH, with a host of many other such Federal hatcheries, was there to supply fish.

Over time, the conservation needs of America's fisheries changed, and so has the work of Natchitoches NFH. While game fishes are still produced there, the hatchery's scientists now engage in restoring the striped bass and paddlefish—two species with commercial and recreational value—as part of a national program. Scientists also raise a fish with tremendous intrinsic value, the endangered pallid sturgeon. Two other aquatic species benefit from facility's scientific expertise—the endangered Louisiana pearlshell mussel and the alligator snapping turtle, are propagated at the station.

Expect to see more anniversaries in the near term; the average age of the 86 facilities in the National Fish Hatchery System is 62 years. □

Craig Springer, Fisheries and Habitat Conservation, Albuquerque, New Mexico



Measuring Research Capacity

Ten years after the Service's research arm left for the proposed National Biological Survey, a survey of more than 4,000 professional series employees shows that the Fish and Wildlife Service retains a significant capacity to conduct and apply scientific research.

"We remain, at our core, a scientific organization. I think the survey points out that our employees are highly trained, with a significant plurality of our professionals possessing advanced degrees," said Service Science Adviser Dan Ashe. "We are publishing, and we see scientific capacity and credibility as foundational to our mission success."

Results of the survey, carried out at the Service's request by Dr. Joan Ratz at the U.S. Geological Survey (USGS) Fort Collins Science Center, were presented to a meeting of the Directorate in March.

Some of the survey highlights:

- Of 4,435 professional series employees, 11 percent published in peer reviewed scientific journals between 1995 and 2004.
- Forty-one percent agreed that the Service encourages them to get involved with research while 33 percent disagreed.

■ Forty-five percent of respondents said they were satisfied with supervisory support for research while 34 percent reported they were dissatisfied.

■ Some 55 percent were not satisfied with the financial support received for research and 58 percent were unhappy about the amount of time set aside for research.

Despite those findings, USGS researchers concluded the Service retains a research capacity, and has been measurably successful in past research efforts.

Ashe said the Service requested the survey to better understand its existing capacity to conduct and apply science and better target efforts to "strengthen scientific foundations."

The completion report is available at <www.fort.usgs.gov/products/publications/21528/21528.pdf>.

The survey data report is available at <www.fort.usgs.gov/products/publications/21583/21583.pdf>. □

Eric J. Taylor, Service liaison to The Wildlife Society

Art Lesson



Deputy Secretary of the Interior Lynn Scarlett is schooled on the finer aspects of waterfowl art by a second grader from Washington DC's Hyde Elementary School at the 2006 Federal Junior Duck Stamp Contest. The contest was held in April at the South Interior Building in Washington, DC. Rebekah Nastav of Amoret, Missouri won the competition with her acrylic portrait of a single redhead duck.

Beating the

*The black-footed
ferret's remarkable
journey from the
brink of extinction.*

By Valerie Fellows

Photos by Ryan Hagerty

It could be considered one of the greatest comebacks of all time. At one point, there were only 18 black-footed ferrets left in the wild. A species that ranged throughout the Great Plains—from Saskatchewan to Mexico and Kansas to Utah—was nearly gone.

Decades of prairie dog eradication programs primarily sponsored by the U.S. government wiped out most of the ferret's habitat and prey base. Remaining ferret populations suffered from prairie dog town fragmentation and diseases such as sylvatic plague and canine distemper.

When the nocturnal carnivores were deemed extinct in 1979, the only native North American ferret seemed lost forever. But fate gave them one more chance.

A ranch dog in Meeteetse, Wyoming found a dead black-footed ferret and brought it to its owner, which led to the discovery of a colony of ferrets nearby.

Researchers monitored the population and gained considerable knowledge about

the species. But they also noticed ferret numbers had begun to decline. As a last resort to save the species from extinction, 18 individual ferrets were captured and moved to facilities in southeast Wyoming, starting one of the country's most intense breeding programs to save an endangered species.

Thanks to genetic management, captive breeding facilities since have produced more than 5,200 kits. There are currently five zoos that have captive breeding programs for the ferret, including the National Zoo, Cheyenne Mountain Zoo, Louisville Zoo, Toronto Zoo and Phoenix Zoo. More than half of the population is housed at the Service's new National Black-footed Ferret Conservation Center (FCC) located in northern Colorado. The Service managed the former FCC in Wyoming from 1996 to 2005.

odds



"After 25 years, I'm cautiously optimistic," says Paul Marinari, a Service biologist with the black-footed ferret recovery program who is on-site manager of the new breeding facility. "We've made great progress through an extremely successful captive breeding program, which forms the core for recovery."

Captive-born black-footed ferrets began their return to the wild in 1991. To date, more than 2,200 kits have been released on prairie dog complexes in Arizona, Colorado, Montana, South Dakota, Utah, Wyoming and northern Mexico. Many of the ferrets released into the wild have successfully reproduced. Wyoming and South Dakota are home to the majority of wild black-footed ferrets while other reintroduction sites continue to document reproduction and maintain smaller



Paul Marinari (left), a Service biologist who is on-site manager of the National Black-footed Ferret Conservation Center; says captive breeding is the core of the black-footed ferret recovery program.

populations. Drought, habitat degradation, political/social issues and disease still threaten recovery.

Sylvatic plague, spread by fleas, is akin to the bubonic plague that devastated humans in Europe in the Middle Ages. Both ferrets and prairie dogs are highly susceptible to plague, and entire dog towns can be eliminated quickly. Ferrets are also susceptible to other diseases, including rabies, tularemia and human influenza, but these are not considered serious threats.

“Plague is an exotic disease so ferrets and prairie dogs didn’t get to evolve with it. It will always be an obstacle to ferret recovery,” Marinari says. “There are some sites where black-footed ferrets have been released that are completely wiped out now—both ferrets and prairie dogs—because of plague. We continue to work on a vaccine, which could be used as a management tool. It would help safeguard the captive breeding population, but it’s unrealistic to vaccinate every ferret born in the wild.”

When the kits are born, they remain with the mother and are cared for inside the facility. At 60 days, some are moved into outdoor head-start pens—the transition area before they are released into the wild. There in the head-start pens they are fed

live prairie dogs and get used to living in a controlled prairie dog burrow systems. Then at 120 days, they are released into the wild at reintroduction sites dispersed throughout their historic range.

Marinari, who says he fell in love with biology “after writing a report about sea slugs in 5th grade,” today is the on-site manager of the new breeding facility. In addition to working closely with zoo partners and their breeding efforts, he also works with genetic advisors to develop a captive breeding management strategy which maximizes diversity while at the same time maximizing production of kits.

“Growing up I had no idea what a black-footed ferret was,” Marinari says. “In graduate school at the University of Wyoming I had to choose to either write a grant for funding a soil microbe study or pursue a study of guidelines for detecting black-footed ferrets using spotlighting. I chose the latter.”

Today his graduate school pursuit has evolved into a passion. In addition to his duties as FCC manager, Marinari created and currently oversees the Ferreteers—volunteers that assist Service Biological Science Technicians Terry Quesinberry and Jennifer Bowers with animal husbandry of the captive colony. FCC staff also work on education and public outreach programs about the black-footed ferret and the prairie dog ecosystem, which is home to countless species in trouble. Since the facility is closed to the public to decrease the spread of diseases to the ferret colony, the staff has developed a mobile ferret display to take their educational show on the road.

Their work is paying off. Biologists estimate that 500 to 600 ferrets are living in the wild. Ultimately, the goal for recovery is to create self-sustaining populations with a total of 1,500 breeding individuals.

Marinari recently celebrated the birth of the first litter of kits in the FCC.

“Every day, I get to make a difference and give something back,” Marinari says. “Watching the kits explore their head-start pens for the first time and experience the great outdoors never gets old.”

For more information on the black-footed ferret recovery program visit www.blackfootedferret.org. □

Valerie Fellows is a public affairs specialist in Washington, DC



Pop-goes-a-ferret at the new Black-footed Ferret National Conservation Center in northern Colorado.

Cultivating

Farmer Felix Padilla and his staff farm more than 1,000 acres on the Bosque del Apache National Wildlife Refuge. Per a cooperative agreement, Padilla harvests 75 percent of his own crop choice and grows 25 percent of the refuge's choice crop—primarily corn—for use as an important management tool for wintering waterfowl and cranes.



Conservation

Cooperative farming on the Bosque del Apache National Wildlife Refuge benefits people and wildlife.

By Ben Ikenson

Editor's note: Deb Davies, the former Deputy Assistant Manager at Bosque del Apache NWR who is quoted in this story, died in June after a brief illness. Her obituary is found in the In Memoriam section, page 33.

Bosque del Apache means “woods of the Apache,” named for the Indians who routinely camped in the riverside forest. Just 80 miles south of Albuquerque, New Mexico, Bosque del Apache National Wildlife Refuge offers one of the most spectacular settings in North America.

About nine miles wide and 10 miles long, the refuge straddles the waters of the Rio Grande, which have been diverted 30 miles upstream to create extensive wetlands and crops throughout the valley. Beyond the plains, the refuge spreads out into some 30,000 acres of surrounding foothills which slowly rise like protective spirits to the Chupadera Mountains in the west and the Little San Pasqual Mountains in the east.

Encompassed by the rust-colored peaks that point into the azure, the valley appears Eden-like. But it is not the hand of God alone that makes the place so idyllic. The refuge practices unique land management techniques that combine wildlife conservation with an agricultural tradition that has been alive since the Piro Indians first inhabited the fertile valley more than 700 years ago.

Come January, an updated tradition will be formally honored when Felix Padilla renews his agreement with the refuge to begin a sixth year as its primary farmer. In addition to his own farm of about 1,000 acres and 100 head of cattle in the neighboring town of San Antonio, New Mexico, Padilla and his staff of five will continue farming more than 1,000 acres on the refuge. While Padilla maintains all labor and operational expenses related to the work, the refuge offers water and much of the acreage for the benefit of Padilla's business.

Per the agreement, Padilla harvests 75 percent of his own crop choice, namely alfalfa, which he sells in 600 pound bales to feedlots and dairies as hay. In exchange, he grows 25 percent of the refuge's choice crop, namely corn, which is subsequently used as an important management tool for wintering waterfowl and cranes.

“I'll do this as long as I can,” Padilla says, taking a break from tractor-hauling a ripper over a field in preparation for a first

year corn planting. “It's been working out for me pretty well, but it's been a tough few years.”

The market for hay at dairies in particular is very specific; there's a dramatic difference in pay for good hay and great hay, explains Refuge Operations Specialist Bernard Lujan. Lujan, who himself comes from a farming background, serves as a kind of liaison between Padilla and the refuge. Lujan understands the precarious nature of the farmer's livelihood, the tremendous impacts of rising diesel and fertilizer costs, and the many possible natural and biological blights and diseases that can threaten an entire season's hard work.

“And farming,” Lujan says, “is all hard work—from mechanical repair to welding to running the machines and plowing the fields.”

“Yeah,” Padilla jokes, “I work 18 hours a day but Bernard here, he'll probably just go on back to his office after lunch and take a nice long nap.”

Joking aside, the farmer and the fed indeed appear to enjoy a good sense of camaraderie. Lujan is confident that Padilla will stick with it and hopes he prospers. Padilla may have had a few tough years, but he's also had some good years. Such is a fact of life with small farmers. After Padilla started five years ago with a barebones fleet of machinery, those good years enabled him to double the amount of his equipment, which now includes tractors, plows, discs, seeders, balers, and rippers.

For its part, the refuge can't complain. The 250 or so acres of corn Padilla grows are critical to managing birds. Lujan cites the words of a former refuge colleague who referred to corn as a “hot food.” It's high in carbohydrates and protein, which helps birds thermally regulate themselves and build up energy.



JOHN AND KAREN HOLLINGSWORTH / USFWS

A red-winged blackbird, one of several of bird species that thrive at Bosque del Apache. The refuge is considered among birdwatchers as “one of the best spots in the Western Hemisphere.”

Also, corn grows to a height of about eight to 10 feet, which affords the refuge optimal control over feeding. Birds cannot just come up and enjoy a free-for-all; the refuge closely monitors and controls the crop in order to manage the migratory bird populations, encourage their movement, and discourage epidemics—such as avian cholera—often triggered by overpopulation.

Ongoing tradition

While some of the science may have changed over the years, the cooperative farming program at the refuge has, in fact, been ongoing since the 1980s. From that time, at least one private farmer has been working the land on the refuge. Felix Padilla's is the current face on an experimental partnership that began when refuge staff realized they simply could not conduct all of the required farm work with so much else to do on the land.

“The refuge is tasked with a very long laundry list of activities that make the place so wildlife-friendly,” says Deb Davies, Acting Refuge Manager. >>



(Conservation, continued)

Historically, the Rio Grande, influenced by snowfall in the Rocky Mountains and summer monsoons, periodically flooded and replenished natural marshlands that occurred along the river. Today, however, many of those marshes have been lost and the river no longer meanders.

“A lot of what we do with our water,” Davies says, “is try to imitate the ebb and flow of the Rio Grande before it was channelized and dammed up.”

Water levels in impoundments are manipulated to create moist-soil fields that promote growth of native annual and

The refuge is an ongoing flurry of activity, from the work of biologists, fire technicians, heavy equipment operators and farmers, to—most importantly—the curious ways of wildlife.

perennials such as millet, smartweed, chufa, bulrush and sedges, which offer food and habitat for birds and other wildlife. Moist-soil management is rotated so varied habitats are always available. Dry impoundments are aerated or burned, then reflooded, to allow natural marsh plants to grow. When mature marsh conditions are reached, the cycle is repeated.

Other management activities include constant efforts to thwart the spread of invasive species. Salt cedar, or “tamarisk,” originally introduced as an ornamental plant and for erosion control, has taken over vast areas of the refuge. In order to restore native bosques that have higher value for wildlife, salt cedar is being cleared by machinery, herbicide, and prescribed fire, and many areas are being planted with cottonwood, black willow, shrubs, and other understory plants. In irrigation ditches, parrot feather—an aquarium plant—has been clogging drains and impeding the flow of water. The waterways are routinely cleared of this nuisance by excavator.

The refuge is an ongoing flurry of activity, from the work of biologists, fire technicians, heavy equipment operators and farmers, to—most importantly—the curious ways of wildlife.

And here, birds speak louder than words.

Bringing it back home

If the refuge is acknowledged as one of the best land management operations in the Southwest, it is considered among birdwatchers “one of the best spots in the Western Hemisphere.” Established in 1939 to provide a “refuge and breeding ground for migratory birds and other wildlife,” the refuge offers sanctuary to cranes, bald eagles, and snow geese flying south during winter. In summer, the refuge attracts nesting songbirds, waders, shorebirds, and ducks. And in fall, tens of thousands of birds—including sandhill cranes, Arctic geese, and ducks—make the valley their home.

Each November, the refuge hosts the annual “Festival of the Cranes,” drawing huge scores of people to witness the spectacles of a timeless, albeit somewhat orchestrated, ritual. Like the massive numbers of visitors on the ground, thousands upon thousands of migrating waterfowl and sandhill cranes descend on the refuge; they sail over the sleepy town of San Antonio, over Felix Padilla’s farm and onto floodplains suffused in golden hues of autumn foliage.

On still-verdant fields of alfalfa and corn, patches of stubbled earth, and surrounding marshes and wetlands, the birds cackle, swim, feed, rest and play. Seems they’ve returned to a favorite spot, paying no mind to the gawking humans in the distance. Occasionally, a thousand pairs of wings will abruptly flap as one, taking leave of a frustrated coyote prowling the neatly-layered rows of corn.

Of his visit to the refuge years ago, the late Charles Kuralt remembered: “I heard their triumphant trumpet calls, a hundred or more sandhill cranes riding south on a thermal above the Rio Grande Valley, and that day their effortless flight and their brassy music got into my soul.” □

Ben Ikenson is an author and freelance writer based in Albuquerque, New Mexico.

*The refuge practices unique land
management techniques that combine
wildlife conservation with an agricultural
tradition that has been alive for centuries.*





The northern pintail is among several migratory bird species at the top of the surveillance list.

TRACKING

Anthing that isn't still frozen is wet. Hip boots or waders, fitted at the ankle for support, are the footwear of choice. This is not country for high-dollar hiking boots.

On the coast, the retreating tides draw back to reveal vast expanses of mud flats. Made up of fine silt, these are treacherous. Stand in one place too long and you won't get out on your own without, at the very least, leaving your footwear behind. A bit further inland and the terrain might be hummock tundra. To get an idea of the difficulties encountered in traversing such country, pack a room loosely with bowling balls and then add water. A long walk in this stuff will cover very little distance.

Depending upon where you are in Alaska—a key area where the Service and its Federal and state cooperators have been monitoring wild birds for highly pathogenic avian influenza (HPAI)—the lingering summer sunlight can burn unprotected skin to blisters, and yet you still might find a skin of ice atop an unfinished cup of coffee left out overnight. The daily weather can vary from sunshine to rain squalls blown horizontal by winds that cause the best set tents to flap and bellow.

When the wind blows at least the bugs stay down, hiding in the shelter of low foliage. When it stops they can rise around you in clouds, a constant whining dance at the edges of influence of whatever repellent you use.

These hardships are not unusual to sampling teams on the front lines of a national effort to screen wild birds for HPAI H5N1, also known as “bird flu.” Their efforts are part of an interagency surveillance plan (see sidebar page 21) to strategically sample live birds for the deadly virus, as well as hunter-killed birds, sentinel flocks and the environment used by these populations.

The interagency plan focuses on Alaska because it is a flyway crossroads for migratory birds. Testing also is being carried out in the Pacific Islands, elsewhere in the Pacific flyway and in other migratory bird flyways in cooperation with other Federal and state agencies.

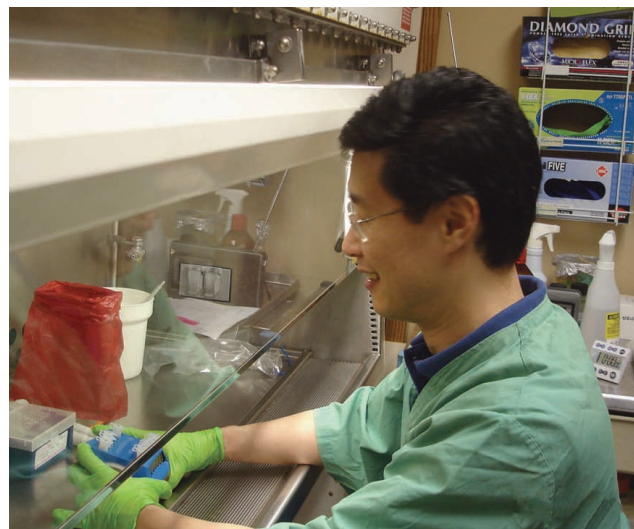
Working together, Interior agencies, the U.S. Department of Agriculture (USDA) and state cooperators plan to collect 75,000 to 100,000 samples from wild birds in 2006. Those samples will be screened at the U.S. Geological Survey (USGS) National Wildlife Health Center in Madison, Wisconsin and other National Animal Health Laboratory Network facilities across the country. Screening results that are suspect for the H5 form of avian influenza will then be sent to the USDA testing center in Ames, Iowa for definitive diagnosis.

Alaska leads the way

In Alaska, experts within the Fish and Wildlife Service, USGS Alaska Science Center and Alaska Department of Fish and Game, along with USDA and Native Alaskan organizations, are sampling about 27 species of migratory birds at more than 50 sites across the state. In addition, USDA will also be doing some environmental sampling of water and fecal material.

The Service is among several agencies on the lookout for highly pathogenic avian influenza.

By David Eisenhauer and Bruce Woods



Analysis of an avian influenza sampling.

a Killer

While the pace of monitoring has accelerated, this isn't a new endeavor. Some 12,000 bird samples were collected in Alaska between 1998 and 2005. No trace of H5N1 was found.

Of the \$7.4 million allocated to the Service for HPAI H5N1 monitoring this year, some \$4 million is being spent in the Alaska region. The agency has hired about 75 field technicians and enlisted some 20 volunteers to help sample up to 15,000 birds. As of late August, more than 11,000 samples had been collected and sent to the National Wildlife Health Center for testing. As of the Fish and Wildlife News press deadline, none of the samples had tested positive for HPAI H5N1.

Birds are captured, depending upon species and time of year, in mist nets, nest traps, hand nets (during the flightless molt season), and even by hand in the case of brants and eiders that will often hold tight enough on a nest to be captured this way. Cloacal swabs are the sampling method for all but environmental samples. The swabs are stored in small vials and kept on ice until they can be frozen and transported from the camps back to Anchorage in liquid nitrogen cooled canisters. They remain frozen until delivered to the lab for testing.

Species of birds have been prioritized for surveillance based on several criteria linked to potential risk of HPAI. These species risk factors include size of the population that winters in or migrates through Alaska, proximity to known sources of HPAI H5N1 in Asia, and the ability to obtain a sufficient sample number for sensitive detection.

The migratory bird species at the top of the surveillance list include Steller's eider, pacific golden plover, northern pintail, bar-tailed godwit, emperor goose, dunlin, and black brant.

"This is not a hit or miss effort," says Karen Sullivan, who recently retired as Assistant Regional Director for External Affairs in Alaska. "The surveillance plan was designed in such a way that if the HPAI H5N1 virus is present in Alaska, and we are able to obtain all the samples we plan for, we will have approximately a 95 percent chance of finding HPAI H5N1 if it is present in even as little as 1.5 percent of the sample population." >>

Safety Guidelines

The USGS National Wildlife Health Center in Madison, Wisconsin has issued guidelines for hunters and Service personnel or volunteers handling wild birds. Precautions for Service personnel or volunteers handling wild birds begin with basic good hygiene include:

- Work in well ventilated areas indoors, or upwind to the extent practical outdoors.
- Wear rubber or disposable latex gloves while handling birds.
- Use protective eyewear or a face shield when possible while handling birds.
- Disinfect work surfaces and instruments between locations.
- Do not eat, drink or smoke while handling birds.
- When handling birds from mortality events, wear coveralls, boots, particulate mask, eye protection and gloves that can be disinfected or discarded after use. Containment of infectious material, including proper disinfection before leaving the site and disposal of carcasses and other infective material, is essential.

(Killer, continued)

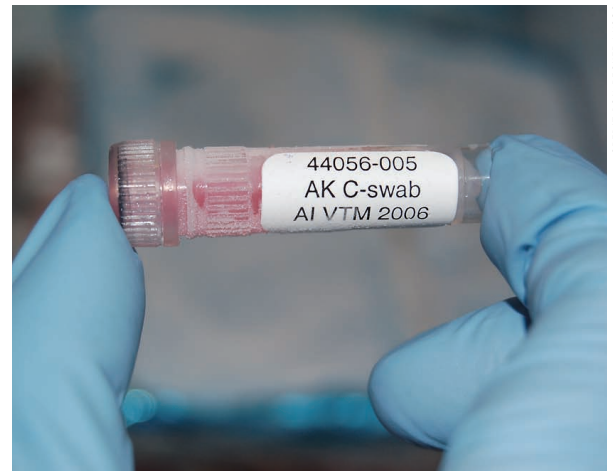
Expanding the search

More recently, staff from the Service's Pacific Region and California/Nevada Operations Office have been collaborating with state wildlife agencies, the USDA-Animal and Plant Health Inspection Service and USGS to develop plans for monitoring birds this summer in the Pacific Flyway and Pacific Islands.

The Service has finalized cooperative agreements with California, Hawaii, Idaho, Montana, Nevada, Oregon, Utah and Washington and provided \$1.9 million to implement monitoring strategies for HPAI H5N1. The strategies were developed cooperatively among DOI, USDA and the states to ensure that priority species are sampled comprehensively throughout the southern Pacific Flyway and Pacific Islands.

The state surveillance plans provide details on species and locations for wild bird monitoring, define personnel needs and identify approved testing labs used by each state. Some of these surveillance activities will occur on national wildlife refuges, although the majority of the work will occur on state wildlife areas. Refuge managers have updated disease contingency response plans and caches of personal protective equipment are being assembled at key field stations for use by employees who may be asked to respond to a disease outbreak.

Sampling efforts identified in the plans have begun with preseason duck banding in California



A bird swab vial used for avian influenza testing at the Alaska Science Center in Anchorage.

and Oregon, and live-trapping of shorebirds in Washington, Oregon, California and Nevada. In addition, USDA has begun collecting fecal samples identified in these plans. Sampling of birds brought through hunter check stations will begin with the opening of waterfowl seasons this fall. Morbidity/mortality events in wild birds are also being monitored and samples taken to test for avian influenza as part of the Service-funded plans.

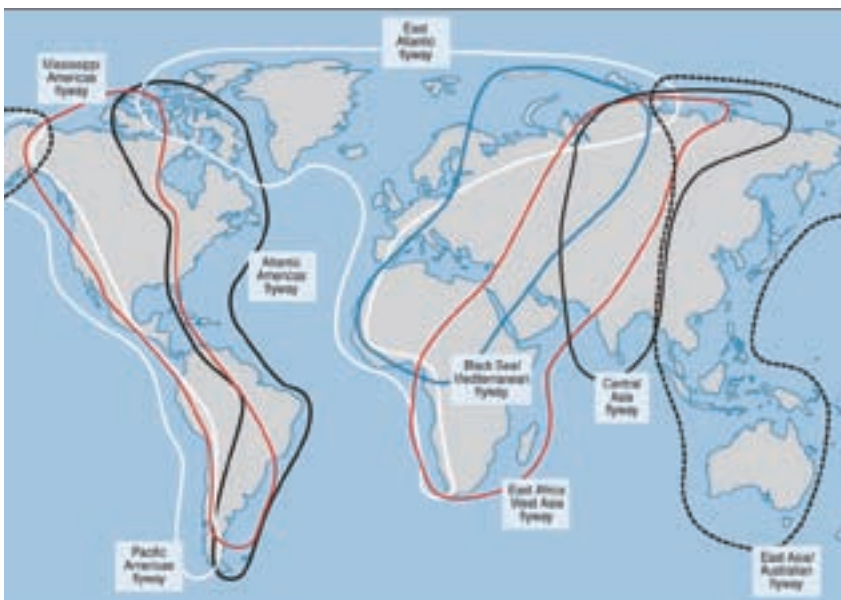
As in the Pacific Flyway, each of the remaining three flyway councils will step down the interagency strategic plan for early detection surveillance for application within their respective flyway. Most states will further step down those flyway plans to identify specifically where and when the sampling should occur and what entities will do the work.

Understanding HPAI

Avian influenza is a disease caused by a virus that infects domestic poultry and wild birds (primarily geese, ducks and shorebirds). Each year, there is a bird flu season just as there is for humans and, as with people, some forms of the flu are worse than others. Avian influenza viruses can be divided into two groups based on the pathogenicity of the virus (the ability of the virus to produce disease) in poultry and into many groups based on two surface proteins, hemagglutinin (16 H subtypes) and neuraminidase (9 N subtypes)

With rare exception, the thousands of flu isolates found in wild birds have been low pathogenic avian influenza and have rarely caused signs of illness. Scientists expect that low pathogenic viruses, including those of the H5N1 subtype, will be found during the monitoring effort.

One specific strain—the highly pathogenic H5N1 that has been found in more than 30 countries—is the focus of North American migratory bird surveillance. There are a number of ways that HPAI H5N1 could potentially reach the United States. These include wild bird migration, illegal smuggling of birds or poultry, travel by infected or contaminated people or people traveling with virus-contaminated articles from regions where H5N1 already exists.



Migratory birds can be infected with the virus and in some specific situations have moved the virus to new locations, but the role of wild migrating birds in establishing infection at new sites on a global scale is unknown. Some believe that migratory birds from Asia, breeding in Alaska or mixing with North American birds in Siberian breeding grounds, could move the virus to North America, with its first appearance likely in Alaska.

A bird disease

So far, HPAI H5N1 remains a threat primarily to domestic poultry. Since the virus was first detected in Hong Kong in 1997, about 200 million domestic poultry have either died from the disease or have been culled in attempts to eradicate it.

The strain doesn't easily spread to humans but it is often lethal when it does. Between 2003 and July 2006, HPAI killed more than half of the 231 people who were reported as contracting the virus, according to the World Health Organization.

Though the federal government has initiated advance planning efforts to prepare for a possible human pandemic, wildlife health experts caution that HPAI H5N1 is still a bird disease.

To prepare for a possible outbreak of HPAI in wild migratory birds, the Service has assembled a Directorate-level ad hoc working group on HPAI, which is developing a comprehensive plan for Service preparedness and response. This plan will include guidance on employee safety, as well as internal and external communications strategies and actions that different programs and offices should take in the event of an outbreak.

Service headquarters and regional external affairs staffs are working with state and federal counterparts to coordinate HPAI H5N1 communications efforts and share key messages. The Service also has a Web site that provides information on wild bird management and monitoring issues and links to other HPAI resources.

Should the virus be detected in wild birds, says Dr. Tom Roffe, Chief of Wildlife Health for the Service's Mountain-Prairie Region, surveillance will shift based on the location, timing, and species affected to target detection where opportunities are best. "The purpose of detection will be to define the spatial, temporal and species distribution to protect poultry and minimize potential for human infection—primarily from that poultry interface," he says.

Meanwhile, Roffe says Service employees and others who handle or observe wild birds should practice

routine hygiene "irrespective of HPAI. There are lots of other zoonotic diseases that are transmissible from animals to people." For safety guidelines, visit the USGS National Wildlife Health Center Web site at: www.nwhc.usgs.gov/publications/wildlife_health_bulletins/WHB_05_03.jsp. □

David Eisenhauer is a public affairs specialist in Washington, DC. Bruce Woods is acting Assistant Regional Director for External Affairs in Alaska. Additional reporting by Karen Leggett and Brad Bortner, Pacific Region Division Chief for Migratory Birds.

Other Resources

www.pandemicflu.gov

Fish and Wildlife Service avian influenza page: www.fws.gov/home/avianflu

USGS National Wildlife Health Center avian influenza page: www.nwhc.usgs.gov/disease_information/avian_influenza/index.jsp

USDA avian influenza page: www.usda.gov/wps/portal/usdahome?navtype=SU&navid=avian_influenza

Fish and Wildlife Service Alaska Region: alaska.fws.gov/media/avian_influenza/index.htm



Avian influenza sampling of live shorebirds at the Anchorage Coastal Wildlife Refuge. Birds were captured in mist nets and live traps.

Interagency Plan for Early Detection

The Alaska and Pacific Flyway surveillance programs are based on national surveillance strategy developed by the Departments of Interior, Agriculture, and Health and Human Services:

Investigate disease outbreaks in wild birds. Wild bird mortality events will be examined for presence of HPAI H5N1 virus. In the event HPAI H5N1 virus is detected in wild birds, federal officials will monitor domestic poultry and swine operations and minimize contact between wild birds and domestic animals. FWS surveillance efforts emphasize detection and investigation of avian mortality events.

Expanded monitoring of live wild birds. This year, FWS and its cooperators expect to sample up to 18,000 live wild birds in the Pacific Flyway and on the Pacific Islands, including some on refuges associated with banding operations and research projects.

Monitoring of hunter-killed birds. Hunter killed birds will be sampled during the Alaska subsistence harvest beginning this spring (2006) and also during the general sport hunting season in the fall (2006) throughout the Pacific Flyway.

The National Interagency Plan also calls for using poultry flocks raised in backyards for noncommercial purposes and duck flocks placed in wetland environments as sentinels for early detection of the virus. Additionally, in 2006, 50,000 samples of water or feces will be collected from high-risk waterfowl habitats. All of the monitoring data will be placed in a national database, which will be accessible to participating agencies, organizations and policymakers, including scientists who are trying to better understand and track the spread of such viruses.



Ranching 101

Mitch King gets a taste of the ranching life through the Walk A Mile In My Boots program.

By Perry Backus

Calf wrestling isn't nearly as easy as it looks. Mitch King, Regional Director for the Fish and Wildlife Service's Mountain-Prairie Region, learned that lesson firsthand as part of his weeklong introduction to cattle ranching Montana-style on the Mannix Brothers Ranch in the Blackfoot Valley.

"The biggest thing I've learned so far is when you're holding a calf down, don't ease up at all," says King, who is based in Denver. "I didn't realize they'd seem to know just when to struggle.

"I had to resort to a basic wrestling pin," he says.

This spring King learned the ropes from ranchers in the Blackfoot Valley and along the Rocky Mountain Front as part of the Fish and Wildlife Service's "Walk A Mile In My Boots" program, which opens the door to cattle ranchers and FWS employees to spend a few days seeing how the other one lives.

During the exchange, cattle ranchers can visit government offices, work on refuges, labs or even travel to Service national headquarters in Washington, DC. Government employees have the opportunity to visit cattle operations and get hand-on experience working the ranch.

It didn't take long for David Mannix—King's host for the first few days—to know he'll not be seeking any high-ranking government position.

"I'm happy that I don't have his job," Mannix says. "I think I have issues; I can't even understand the breadth of the issues that he has to deal with. I'm just glad they're his problems, not mine."

Both agreed the experience has been eye-opening and valuable.

"I live in my own rut. This is just a good opportunity to be reminded that there are two sides to every issue," Mannix says. "If you can understand the other side, then you can begin to learn to trust.

"Really what we're doing here is building trust so we can deal with the tough issues when it comes time to face them," he says. "You get some small wins under your belt, and then you can work together when the bigger battles come around."

The concept for the Walk A Mile In My Boots program was developed by the National Cattleman's Beef Association several years ago. The Service's Greg Neudecker, Assistant State Coordinator for Montana Partners for Fish and Wildlife, helped get it off the ground.

"The ranchers felt that Service employees would have a better understanding of the issues they face on a daily basis if we could spend some time working side by side,"

Neudecker says. "From our point of view, we often find ourselves in a tough position when it comes time to make decisions. We thought if they understood our rationale, then maybe that would help build some trust and better relationships."

The program now includes partnerships with the National Association of Conservation Districts and the USDA Natural Resources Conservation Service.

There's probably no better place to demonstrate the value of a good working relationship than the Blackfoot Valley. For decades, ranchers have put aside their differences with state and Federal agencies to protect the open spaces that both sides seek to preserve.

"Ranchers need open space to stay in business and wildlife needs open space to stay alive. If we were to lose this valley to subdivision, ranching and wildlife would both lose," Neudecker says. "We're just fortunate that landowners living here 30 years ago saw that this was a special place and got ahead of the development crunch.

"We're reaping the benefits of what they did 30 years ago," he says.

King and Mannix hoist themselves up on a large round hay bale where the remains of a pair of unlucky calves were lying.

"Whew. These things are ripe," King says, as he bends over to grab a hoof. Mannix grabs the other half.



King (left) learns the ropes of cattle ranching from host rancher Dusty Crary. In addition to visiting the Mannix ranch, King spent the day on Crary's ranch near Choteau, Montana. Among other tasks, he assisted with spring calving and learned how to drive a team of mules. In return, Crary visited the Service's Washington, DC office in June.

A moment later, the dead calf flies through the air to land on the back of a flatbed truck parked next to hay bale. The second carcass follows in a hurry as part of King's hands-on introduction to the Blackfoot Challenge's Carcass Pick-Up Program.

The carcass pickup program is just one example of how public and private interests are working together in the Blackfoot Valley to create an environment where livestock producers and wildlife can coexist.

Traditionally, ranchers dumped dead livestock in bone piles near their ranch buildings.

But the carcasses are a magnet for grizzly bears, wolves and other predators. And once a bear becomes habituated to humans, its chances for long-term survival drop dramatically.

Since 2003, a partnership that included the Blackfoot Challenge, Montana

Fish, Wildlife and Parks, Fish and Wildlife Service, Missoula's Allied Waste Management and local ranchers started picking up the dead critters between February and May—the time when grizzlies emerge from their winter dens.

The first year, the program picked up 63 carcasses. In 2004, the numbers grew to 204. Last year, 340 carcasses were removed.

At the same time, human-grizzly bear conflicts appeared to drop in the Blackfoot watershed.

So far, the Mannix brothers have been lucky enough to avoid close encounters with either grizzly bears or wolves. But they certainly aren't opposed to keeping that track record running.

"This program really just helps the risk for us," Mannix says. "Every little bit helps."

King crawls down from the hay bale after the loading job was done. The experience has been a "touch of reality" from his normal world of conference calls and meetings, he says.

It's also been a chance to see firsthand the importance of maintaining places like the Blackfoot Valley. "It's to our benefit to do what we can to help maintain operations like David's, versus seeing it carved up in 20- or 30-acre homesteads," King says. "The Service and ranchers are natural partners. We both want to manage land so it remains healthy and functional for people and for wildlife. Keeping ranchers on their land helps to conserve wildlife habitat and supports traditional economies."

For more information on the Walk A Mile In My Boots program, contact Angela Graziano at the National Conservation Training Center at <angela_graziano@fws.gov> or visit <www.walkamileinmyboots.org>. □

Editor's note: In July, Harvard University awarded its prestigious Innovations in American Government Award to Montana Partners for Fish and Wildlife for its community-based cooperative conservation efforts to restore the state's Blackfoot River Watershed. The award, presented by the Ash Institute for Democratic Governance and Innovation at Harvard's Kennedy School of Government and the Council for Excellence in Government, recognizes the program for working with a variety of state, local and community partners.

Perry Backus is a writer for the Missoulian. This article was reprinted with permission from the Missoulian. Heather Johnson, Assistant Regional Coordinator for the Partners for Fish and Wildlife Program in Denver, Colorado, contributed to this article.



Denise Stockton

Hopper Mountain National Wildlife Refuge Complex

By Joshua Winchell

Denise Stockton is Outdoor Recreation Planner for Hopper Mountain National Wildlife Refuge Complex, which holds Service lead responsibilities for the California Condor Recovery Program. Stockton was born and raised in Bakersfield, California—hometown of country music legends Buck Owens and Merle Haggard. She is a former Peace Corps volunteer, having served as a small business adviser for a women's knitware cooperative in Uruguay. After returning from South America, Stockton volunteered for the condor program, where her husband Mike worked as a biologist. She eventually moved into outreach and media work and today is based out of the refuge office in Ventura.

What was your most intimate contact with a condor?

DS: When I volunteered I had to haze them when they were going to homes, trying to shoo them away. I would go with my husband and he would send me off to track them or chase them off.

So your husband made you chase these large birds of prey while he sat back and took notes?

DS: Yeah (laughter). And he made me help him get carcasses—we would feed the condors stillborn calves. We would go to this dairy that was close to where we were keeping condors and see if they had stillborn calves. I was always happy when they didn't because when they did, I would have to help Michael pick them up, put them in the truck, take them back, wash them off and put them in the freezer.

Is it merely a myth that condors are famous for their projectile vomiting?

DS: That must be another species. Condors don't really do the projectile thing, but they do regurgitate when they are frightened or upset. This happened one time I was filming a trapping. Condors are quite a handful, and it takes

one person to hold the body, another person to hold the head and another to hold the feet while the fourth person takes blood samples and changes radio-transmitters. The guy holding the head was having difficulty keeping the head still and the condor was regurgitating pieces of calf liver and all the good stuff it loves.

If you could pick out the single most wonderful moment with condors, what would it be?

DS: The one that stands out it my memory was when I was volunteering and my husband and I were working on our anniversary. He had to work that weekend, so I went out with him. We went up to some houses on the mountain top where the condors liked to perch. My husband sent me off to shoo some off a balcony. They circled over me—I don't think they were more than 50 feet over my head—and I could hear the wind in their wings. It was a very awesome thing. They are just so graceful in the air, and to be able to hear them cutting through the wind...I was totally blown away. I'd heard about them so much over the years, but on that day that I really appreciated them." □



Faces in the Field regularly features Service employees whose work is rarely publicized but is critical to the Service's mission. Send your profile suggestions to:

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Beating the Heat

Carbon sequestration is an innovative conservation tool that is benefiting wildlife and their habitat one tree at a time.

By Kyla Hastie

Since 1999, a little known Service program has been making a difference for the future of our planet. On more than 30 national wildlife refuges, an innovative conservation tool known as “terrestrial carbon sequestration” has added and reforested land to the National Wildlife Refuge System to provide better wildlife habitat.

Approximately 40,000 acres have been acquired and more than 75,000 acres of cleared agricultural lands have been reforested. That amounts to some 22 million trees planted. The program has provided suitable habitat for hunting deer, turkey, and waterfowl, as well as protecting rare species like the swallow-tailed kite, Swainson’s warbler and the Louisiana black bear. And it’s been done at almost no cost to taxpayers.

The majority of the land acquisition and reforestation is funded by utility and oil and gas corporations, whose contributions are valued at more than \$20 million. But it’s not just environmental stewardship that has motivated the companies to invest so heavily in refuges. Their investment is also driven by the hope that one day they will receive credits for the atmospheric carbon these trees will absorb as they grow.

To understand how this program works, think back to junior high science and the carbon cycle. Carbon dioxide (CO₂), a greenhouse gas, is a normal component of our atmosphere. CO₂ is produced when we burn fossil fuels in cars, power plants and our manufacturing plants. CO₂ is also absorbed by plants, soils, and oceans—known as “carbon sinks.” The problem is, levels of CO₂ emissions have increased dramatically during the last 60 years and sinks have decreased through deforestation for agriculture and other

land uses. The current amount of carbon sinks can’t keep pace, and scientists contend that rising levels of CO₂ are trapping heat in the earth’s atmosphere and ultimately may result in a host of environmental consequences.

Scientists, policy makers and industry are working on ways to control carbon levels through improved technologies at the source of emissions, the use of low-

carbon fuels, and through absorbing, or “sequestering,” current atmospheric carbon. New high tech methods to sequester carbon are being explored, such as oceanic deep well injection, “microbial genome sequencing,” and increased storage capacity in geologic formations.

But back to junior high science class. Scientists know that trees can also sequester carbon.

“Terrestrial carbon sequestration is low-tech and is currently the least expensive sequestration method,” says Keith Taniguchi, the Service’s Southeast Region Carbon Sequestration Program Coordinator who serves on Federal committees for climate change science and technology. “And it can be done right now—without waiting for these high tech methods to be developed and proven.”

But how much carbon can a tree absorb? How much difference can one tree make?

In the 1990s, scientists set out to determine the answer. They studied the bottomland hardwood ecosystem of the Lower Mississippi River Valley. >>



Foresters ready their supplies for planting trees at Tensas NWR, one of the refuges where carbon sequestration has helped to reforest thousands of acres of agricultural lands.



Louisiana black bears are one of a number of species that are benefiting from the reforestation work resulting from terrestrial carbon sequestration partnerships.

(Heat, continued)

Not only is the ecosystem fertile and fast-growing, but it is also in dire need of restoration. From the 1950s to the late 1970s, approximately one-third of the valley's bottomland forests were converted to agriculture. Estimates of land in need of reforestation range from five million acres to 20 million acres.

Scientists were able to calculate that one acre of native trees in these swampy forests will absorb approximately 400 tons of CO₂ from the atmosphere in 70 years and 450 tons of CO₂ in 100 years. This information made it possible for scientists and industry to calculate the amount of carbon sequestered by each acre replanted.

The result: industry can plant trees, calculate how much carbon those trees will sequester, and then report that amount to the Department of Energy—betting that one day their reported amount will provide them offset “credit” in a carbon trading market.

Armed with this science, the Service and partners like The Conservation Fund and the Trust for Public Land began to promote deforested lands in the Lower

Mississippi River Valley on or adjacent to national wildlife refuges as places to restore as a carbon sink.

“National wildlife refuges are the perfect fit for carbon sequestration,” says Pete Jerome, a Southeast Region refuge supervisor and the driving force behind carbon sequestration on refuges. “Many refuge lands are old agricultural lands in need of reforestation. And companies know that reforested national wildlife refuge lands will be maintained as forest land in perpetuity, which is well beyond their project terms for sequestering the carbon.”

A key partner in the effort has been Environmental Synergy Inc (ESI), a science-based company that specializes in reforestation and quantifying the carbon sequestered by the trees they plant.

“Once a company decides to offset their carbon emissions through reforestation, they are eager to work with conservation agencies such as the Fish and Wildlife Service,” says Dr. Joe Wisniewski, CEO, Environmental Synergy, Inc. “National wildlife refuges are an ideal place for this type of partnership.”

Seven years later, five individual corporations, as well as consortiums representing about 50 power companies, have been involved with terrestrial carbon sequestration projects on national wildlife refuges. And during the next 70 years, the 22 million trees that have been planted will sequester more than 30 million tons of carbon.

DTE Energy, the most recent power company to partner with the Service, has agreed to invest \$5.5 million to purchase land and plant nearly 7,200 acres of trees in Mississippi and Louisiana.

The result? A future that is looking brighter—one tree at a time. □

Kyla Hastie is a Partnerships Coordinator in Atlanta, Georgia

Guidelines for Photo Submissions



Because many images submitted to *Fish & Wildlife News* are in digital format, here are a few guidelines that can help you take better photos. A high-quality digital camera (preferably 4 megapixels or higher) can produce a print-quality photo as long as you use the highest resolution and largest dimension settings.

Settings will differ depending on the camera, but you should be able to easily select the right ones (high resolution is sometimes labeled as “superfine”). If you are not sure whether your digital camera can produce high-resolution images, please use a conventional camera with slide or print film. We will return your photos as soon as possible.

Thanks for spreading the word to your staff and for helping us maintain quality FWS publications.



Lynette "Squeaky"
Fromme

A (Manson) Family Affair

It isn't just *any* President who would take a bullet for a national fish hatchery manager.

But when Gerald Ford experienced a narrow brush with assassination and was spirited out of Sacramento's downtown Capitol Park by nervous Secret Service agents early that September morning in 1975, neither America's 38th President—nor perhaps few others—realized then just who may have been the true target of waif-like Lynette "Squeaky" Fromme's misdirected rage.

Affable, easy-going Carson Fish Hatchery manager Jerry Grover.

The harrowing tale of bullets and bureaucrats dates back to the "dark side" in the waning years of the Age of Aquarius, to the infamous 1969 Tate-Labianca murders in Los Angeles provoked by Charles Manson's bizarre hippie cult, detailed vividly in prosecutor Vincent Bugliosi's subsequent bestseller, *Helter Skelter*.

Twenty-seven-year-old Fromme had cavorted with Manson's motley band of female camp followers at isolated Spahn Ranch, a former movie set in California's arid scrub country. Their counter-culture antics soon took a sinister turn, evolving into a vague plot to incite a West Coast race war through the murders of prominent business people and government officials. Nearly 300 people ended up on their "hit list"—fish culturist Grover and about 15 other western Fish and Wildlife Service employees among them.

An undated Associated Press article of the era reports FBI agents telephoning thousands of persons to alert them after the 1975 assassination attempt on Ford that their names had been found in Fromme's apartment on a so-called "threat list."

How Service hatchery managers wound up on the execution roster was never determined. "We once tried to figure out a common denominator among us. How did we make the list?" Grover, retired since 1997, said recently in an interview from his home near Portland, Oregon. "A common thread we could never come up with was how to explain why we were marked for assassination as 'enemies of the people.' Heck, there were high-powered people like oil company executives on the list, with their six-figure salaries. I was just a practicing conservationist."

Grover was never directly informed of the plot by the FBI. Word trickled back to him through the wife of the sheriff of tiny, woodsy Skamania County, Washington, after a Federal agent had made discreet local inquiries about Grover's friends and general character. A private word with the county sheriff confirmed Grover's name on the Manson family hit list.

Says fellow retiree Brent Giezentanner, now living in Colorado Springs, "I remember quite clearly the day at Washita Refuge in 1975 when a man in a dark suit and a thin black tie came in the refuge office, asked for me, and went into my office and shut the door. He was FBI and showed me a letter with a list of refuge managers' names on it, mine included, written by Squeaky. We speculate she was upset because we allowed hunting on refuges or some such nonsense. It did raise the hair on the back of my neck since I had just finished Bugliosi's book."

Wan-faced, red-robed Fromme had desired to confront President Ford, according to one contemporary news account, to protest "man-made destruction of the Earth"...intending to back her demand up with a .45-caliber Colt automatic. Her stunt earned her a life sentence in prisons in California, West Virginia, Kentucky, and finally in the Federal Medical Center in Carswell, Texas.

Grover went on to the Service's Jacksonville area office and became chief of fish hatcheries in Washington, DC in the mid-1980s. He now serves on the agency's heritage committee and is a board member and newsletter editor of the Association of Retired Fish and Wildlife Service Employees.

"I look back and laugh it off. It sure sticks in my mind, but I was never really worried, although relieved once it was determined to be just the Manson family and not a wider conspiracy...and that they were locked up," recalls Grover. "My wife Judy did ask me at the time if I had any extra life insurance." □

This is the second in a series of short features about little-known aspects of the Fish and Wildlife Service by David Klinger of the National Conservation Training Center, Shepherdstown, West Virginia.



Jerry Grover,
former Carson
Fish Hatchery
manager.

transitions

Headquarters Region

Refuge System Chief **Bill Hartwig** retired from the Fish and Wildlife Service June 3, having started his career with the Department of the Interior in 1977. Michigan Congressman John Dingell paid tribute to Hartwig on the floor of the House of Representatives, thanking him for his invaluable help in creating the Detroit River International Wildlife Refuge when he was Midwest regional director. Congressman Dingell noted that Hartwig's career touched an "incredible variety of issues from land management to migratory bird conservation." In 1988, Hartwig, who also had served as Chief of Realty for a number of years, received a Meritorious Service Award from the Interior Department. "The single thing I will miss the most is the people," he wrote in a letter to Service Director H. Dale Hall. "We have the smartest, hardest working people in the world. I am lucky to have spent some time working with each of them."

Pam Matthes is Deputy Assistant Director for Migratory Birds and Wildlife and Sport Fish Restoration programs. Matthes previously served as a Special Assistant for the Division and has had a long and successful career in a number of programs within the Fish and Wildlife Service and the National Park Service.

Jim Greer is Chief of the Division of Federal Assistance. Greer previously served as Deputy Chief of the Division and director of the Oregon Department of Fish and Wildlife.

Roger Helm is Chief of the Division of Environmental Quality in the Washington Office. For the past 12 years, he has served as the Branch Chief for Natural Resource Damage Assessment and Restoration (NRDAR) and Spill Response in Portland, Oregon.

Pacific Region



Dave Allen retired August 3 as Pacific Regional Director. Allen's Service career spanned 35 years, beginning at a research laboratory in Leetown, West Virginia.

"I didn't start with the notion that I would be here with the Service this long, but you can't help but keep doing what you enjoy and believe in," he said.

Allen came to the Pacific Region from the Service's Alaska Region, where he was Regional Director for 12 years. He also served as Deputy Regional Director in the Service's Southeast Region; Assistant Regional Director for fishery resources for the Service's Northeast Region; and worked for the Service's Division of Fishery Research.

Allen's leadership philosophy emphasizes conservation through cooperative efforts. He represented the Service and the United States internationally with the Conservation of Arctic Flora and Fauna Program involving eight arctic nations, the United States-Russia Area V Conservation Agreement, and in treaty negotiations to conserve migratory birds with Canada and polar bears with Russia.

"The Service has evolved as an organization that recognizes that we can't do the conservation for this country alone. We have to do it with other partners," he said. "We have to continually find new ways to be more supportive and collaborative with states and reach out to find more ways to establish more grass-roots conservation partnerships."

While in Alaska, Allen served as one of the first chairmen of the Arctic Council's Working Group on the Conservation of Arctic Flora and Fauna. He forged local and international partnerships that are credited with changing the face of conservation in the Arctic. Allen's

commitment to elevating Alaskan Natives' role in managing marine mammals and migratory birds resulted in the establishment of three Native Commissions to assist the Service with the management of polar bears, walrus and sea otters. He also achieved a bilateral agreement with Russia for the joint management of shared stocks of polar bears that recognizes the integral role of Alaskan Natives. Those negotiations were completed in 1998, but Congress has recently taken final steps to authorize the United States-Russia treaty.

"It is gratifying to see that work coming together," Allen said.

Under Allen's leadership, the Service acquired more than 350,000 acres of in-holdings in Alaska's national wildlife refuges. For these and other accomplishments, Allen received a Meritorious Service Award from Interior Secretary Gale Norton for outstanding contributions and leadership.

Allen believes future leaders in the Service must work to engage the citizens in outdoor activity and conservation. "The public is becoming more and more urban

in its thinking," Allen said. "I hope we in this country can value conservation as integral to this whole fabric of society. It is one of the elements that will allow us to endure as a society."

Ren Lohofener, Assistant Director for the Service's Endangered Species Program in Washington, DC, will serve as Acting Regional Director of the Pacific Region until a final selection is made for Dave Allen's replacement. Lohofener assumed his new position August 7.

Lohofener, 56, joined the Fish and Wildlife Service in 1989 after working for six years as an ecologist for the National Marine Fisheries Service. Before that, he was a Research Associate and Adjunct Professor at Mississippi State University. Since joining the Fish and Wildlife Service, Lohofener has been a field biologist, the agency's Texas State Administrator and Assistant Regional Director of the agency's Southwest Region. While in the Southwest, he worked with 11 National Wildlife Refuges, four National Fish Hatcheries, two Fisheries Management offices and the Ecological Services program.

Batter Up



Service Director Dale Hall prepares to throw out the first pitch at a June 24 Baltimore Orioles game. Hall's appearance was part of International Migratory Bird Day at Camden Yards, an annual event coordinated by the Division of Migratory Bird Management. The event has been held at Camden Yards since 1997. (Dale swears he threw a strike.)

Susan Saul recently retired as an Outreach Specialist for the Refuge System in the Pacific Region after serving 20 years for the Service. During her career she helped plan the Refuge System Centennial celebration and guided the commemoration of the Lewis and Clark Bicentennial. She also was involved in the region's communications planning for avian influenza.

Southeast Region



Mike Elkins, assistant special agent in charge of the Southeast Region's Law Enforcement, retired in June. Elkins served as a YCC

Awareness Coordinator and work crew leader on Pee Dee National Wildlife Refuge in North Carolina. In 1978, he joined the Service in a full-time capacity as a refuge manager trainee on Blackbeard Island National Wildlife Refuge in Georgia. He also worked as assistant refuge manager of Pea Island National Wildlife Refuge in North Carolina and Cross Creeks National Wildlife Refuge in Tennessee, before transferring to Law Enforcement in 1983 as a special agent in Portland, Oregon. Before he joined the Regional Office staff in 1998, Mike worked in Sacramento, California, Washington DC, and Nashville, Tennessee.

Dave Holland, Deputy Assistant Director for Business Management and Operations retired on July 3 after an exceptional Federal career of 33 years. As a leading financial management expert, Holland exemplified the seasoned career professional, providing top-notch technical guidance to clients throughout the Service and the Department. During his career with the Office of the Secretary, Holland distinguished himself and the Department by developing

the conceptual framework, applications, and training program for the Department's internal control program, in line with the newly enacted Federal Manager's Financial Integrity Act of 1982. This groundbreaking work netted Holland recognition and awards from the President's Integrity Council, OPM and the Association of Government Accountants.

Holland served as Finance Officer for the Bureau of Land Management where he oversaw implementation of the Federal Financial System and improved financial statement reporting. He moved to the Fish and Wildlife Service in 1995 as Finance Officer and was promoted to Deputy Assistant Director for Business Management and Operations. His keen grasp of evolving complex financial management issues made him the definitive resource for financial processes.

Northeast Region



Terry Tarr retired earlier this year with more than 33 years of state and Federal service in law enforcement. Tarr worked for the

Service in Missouri, Kansas and Albany, New York. He also worked on investigations and details throughout the country, including 23 days on the Klamath River in California protecting spawning salmon. His investigation of groups smuggling parrot eggs from Australia became a major component of an international investigation.

During the week Tarr accepted a position as special projects officer in the Northeast Regional office, the assistant special agent in charge accepted another assignment, leaving Tarr in line for that position. Tarr hired, trained or supervised 14 resident agents in charge as well as many special agents and

wildlife inspectors. He helped develop three generations of the national law enforcement database, participated in developing asset forfeiture procedures and co-authored a book on the Division of Law Enforcement. As chairman of the security committee, Tarr ran the first regional office continuity of operations plan test.



John Meehan retired earlier this year after 11 years in charge of the Newark law enforcement office. For three decades, Meehan helped

stem the tide of illegal wildlife trade through Northeast ports and directed a host of law enforcement investigations including illegal hunting, pesticide misuse and interstate wildlife traffic. Meehan started his Service career as a wildlife inspector at the port of New York. Just 18 months later, he was selected as a special agent. His first duty station was Harrisburg, Pennsylvania. Assignments in Newark, New Jersey, and New York followed, and then Meehan was selected resident agent in charge of the Newark office.

His assignments varied from firearms instruction to teaching wildlife investigative techniques in Thailand to exposing a Pennsylvania farm and hunting preserve that killed protected hawks. Meehan worked undercover as a hunter to investigate a guide service in an isolated Virginia island community that sanctioned illegal waterfowl hunting. The nearest backup, if they could be reached, was a long boat ride away. He investigated corporations smuggling caiman (an endangered South American reptile) hides into the United States. Most of the investigations involved from 1,000 to 11,000 illegal skins.

As resident agent in charge, Meehan oversaw Port of Newark wildlife inspections. One success was the first criminal prosecution for smuggling shahtoosh shawls woven from endangered Tibetan antelope hair. After 9/11, Meehan organized a team of Service special agents for security as well as search and rescue at the World Trade Center site. He also worked as a U.S. marshal on a detail at Boston's Logan Airport.



Sam LiBrandi retired from the Service earlier this year after 28 years as a wildlife inspector at the Port of New York and then

as a special agent. As a wildlife inspector, LiBrandi became the Service liaison with special agents and Federal inspection agencies at the airport. He helped develop one of the first endangered species identification manuals, and he provided endangered species training for other agencies. As a special agent, LiBrandi investigated caviar smuggling and elver export and worked on piping plover protection. He worked undercover throughout the region investigating commercial waterfowl guides, poachers and other miscreants. He was the lead agent on an international smuggling investigation, and he traveled to Florence, Italy, to provide information to the leather trade on U.S. import laws. After 9/11, LiBrandi worked on security teams at Ground Zero and at the Boston airport. He also worked on security for the 2002 Winter Olympics. LiBrandi helped train more than 20 special agents whose initial duty station was New York, including three of the current special agents in charge. >>

(Transitions, continued)

Great Lakes Region

Recent retirements in the Great Lakes Region include: **Richard Tolbers**, RO-Federal Assistance; **Lawrence Zellar**, Seney NWR; **Kenneth Lammers**, Reynoldsburg FO; **William Kurey**, Reynoldsburg FO; **Robert Stifter**, RO-ABA; **Sharon Groenwoldt**, Upper Miss. Savanna District; and, **Jean Hinkle**, Cypress Creek NWR; **Janet M. Smith**, Green Bay FO and **Harold R. Carter**, Necedah NWR; **Brian Norris**, RO-External Affairs; **James D. Brown**, McGregor District; **Stuart L. Burnside**, Swan Lake NWR; **Randolph A. Tate**, Fergus Falls WMD; **John R. Lindell**, McGregor District; and **Lee E. Newman**, Ashland FRO.

Southwest Region

Refuge Chief **Dom Ciccione** retired this summer and Assistant Regional Director for Fisheries **Lynn Starnes**,

retired in January. **Chris Pease** succeeds Ciccione. Pease is formerly acting Chief of the Division of Natural Resources in the national office. In addition to his Federal service with FWS, Pease served five years as a habitat biologist for the New Mexico Department of Game and Fish. He has a bachelor's degree in biology from Corpus Christi State University.

Greg Pratschner has been selected as the new Assistant Regional Director for Fisheries. Pratschner is a native of Fargo, North Dakota and has extensive experience in fisheries and endangered species. He began his career with Alaska Department of Fish and Game on Kodiak Island. Throughout his 30-year career, Pratschner has worked on a variety of fishery resource issues as a hatchery manager and as a fisheries program supervisor. He previously served as the Mountain-Prairie Region Fisheries Program Supervisor for Montana, North and South Dakota,

and Nebraska. He has a bachelor's degree in fisheries and a master's degree in salmon genetics from the University of Washington. Other retirements in the Southwest Region include: **Jack Dodd**, Wichita Mountain NWR; **David C. Frederick**, RO-Ecological Services; **Ramon Gurule Jr.**, RO-Realty; **Martin Jackle**, Arizona-Ecological Services FO; **Gary Montoya**, RO-Refuges; **Juliette Moore**, RO-Law Enforcement; and **Rita Pruitt**, Houston Ecological Services FO.

Alaska Region

Karen Sullivan, who retired in May, 2006, joined the U.S. Fish and Wildlife Service in 1990, launching a productive 16-year career. Notable career accomplishments included helping to shape the National Coastal Program while working on the Delaware Bay Estuary Project, designing public involvement and outreach programs for the Endangered Species Program in Washington DC, and negotiating the Endangered Species Agreement between Canada and the U.S. For the past eight years she primarily worked as the Assistant Regional Director for External Affairs in the Alaska Regional Office in Anchorage.

Jerry Stroebele retired March 2006. His career with the Service began when he received a job offer by telegram in 1963. In the forty-odd years of government service that followed, Stroebele worked in Oregon, Montana, and Colorado before coming to Alaska in 1976. Between 1967 and 1970, he took a hiatus from his Fish and Wildlife work while serving as an Army captain in Vietnam. When he retired, Stroebele was refuge supervisor for Alaska's eight northern refuges. He plans to remain in Alaska, a state that he admits can be cold and remote, but which is also, in his words, "a fabulous, wild, wonderful challenge."

Leslie Kerr retired in early June in Alaska where she spent most of her career with the Service. Kerr began her more than two decades of service to the Alaska Region as a

planning team member on Alaskan refuges early Comprehensive Conservation Plans (CCPs) during the 1980s, where her efforts earned national recognition. She became Regional Chief of Planning in the Anchorage Regional Office before transferring to remote Selawik Refuge north of the Arctic Circle as Refuge Manager in 1995. In 2001, Kerr became Refuge Manager at Kodiak Refuge where her planning expertise expedited completion of that refuge's revised CCP. In addition, she played a key role in planning a new visitor center for Kodiak Refuge to be completed in 2007.

Steve Lewis recently retired after a long career with the Service and State of Oklahoma. Lewis received his bachelor's degree in wildlife management and master's in fishery biology from the University of Arizona, before beginning his professional career in 1969 as a fisheries research biologist with the Oklahoma Department of Wildlife Conservation in Norman. After 24 years with the state of Oklahoma, Steve joined the Service as Field Supervisor of the Ecosystem Restoration Office in Klamath Falls, Oregon in 1993. In 2002, Steve was appointed Field Supervisor of the Fish and Wildlife Field Office in Fairbanks, Alaska, where he supervised the fisheries and ecological services programs for the northern two thirds of the state.

Thomas H. Boyd retired in May after 33 years with the Federal government, the last 11 years with the Service. He served most recently as Assistant Regional Director in the Office of Subsistence Management in Alaska where he helped shape the multi-agency subsistence program. While with the Bureau of Land Management he served as a member of the planning team that prepared the initial Federal regulations conceiving the Federal subsistence program. Prior to working with the Bureau of Land Management's Wildlife and Fisheries Program he worked for the Minerals Management Service Leasing and Environment Office.

Hot Shots



TOM MACKENZIE / USFWS

Alex Hardy (left) and Chad Becker keep a blaze under control using a hose along edges of a prescribed fire on private land bordering Blackwater National Wildlife Refuge in Maryland. A crew of seven Fish and Wildlife Service firefighters and one Maryland Department of Natural Resources firefighter successfully executed a controlled burn at the refuge earlier this year. The prescribed fire not only reduces the chance of an unplanned fire coming off the refuge, but also reduces the chance of fire originating from the town side spilling over into the refuge.

Mountain-Prairie Region

After more than 30 years of service with the Federal government, **Gale Green** has retired from his most recent job as regional fire ecologist in the Mountain-Prairie Region. Prior to his career with the Service, Green worked for the Bureau of Land Management in Idaho.

Robert April retired from his job as a Service automotive mechanic in June. He joined the agency in 1983 at the Green Lakes Fisheries Lab in Michigan and transferred to the Mountain-Prairie Region in 1989 to work at the J. Clark Salyer National Wildlife Refuge in North Dakota.

Cheryl Williss recently retired after nearly 30 years of Federal service, most recently as the region's Water Resources Division Chief. She was involved in negotiating creative and fair management of limited water for the Bear River Migratory Bird Refuge, an important migratory stopover for thousands of waterfowl and shorebirds. Williss's knowledge of water law is respected throughout the water law community.

Paul Gertler recently retired as Assistant Regional Director for Migratory Birds and State Programs in the Denver Regional Office. Gertler's government career ranged from a stint in the Peace Corps in South America to helping coordinate clean-up efforts after Exxon-Valdez oil spill in Alaska to serving in the Ecological Services field office in Puerto Rico.

Joanne Covas-Munro recently retired after more than 30 years of Federal service. A cartographer, Covas Munro started out with the U.S. Geological Service and served 14 years with the Fish and Wildlife Service.

Dean Knauer retired after 34 years of government service. Knauer's career with the Service began in 1972. He spent the last 21 years at Upper Souris National Wildlife Refuge and also worked at Squaw Creek, De Soto, and Malheur National Wildlife Refuges.

Bob Coby, who began his Service career at the Bozeman Fish Technology Center in 1988, retired in April. Coby was a research chemist working on safety protocol and analytical equipment at the center.

Patricia Michael, who began her Service career as a payroll clerk in the Denver Regional Office in 1987, retired in June as a Human Resources Specialist.

Terry Sexson retired after a 30-year career with the Service. Sexson began as the managing editor of the *Wildlife Review* and *Fisheries Review*, moving to the Denver Regional Office as the Congressional Liaison and later serving as the ARD of External Affairs, and ending his career as the National and Regional Research Coordinator.

Al Trout retired in May as Refuge Manager of the Bear River Migratory Bird Refuge in Utah. Trout's 35-year Service career started at J. Clark Salyer National Wildlife Refuge in North Dakota. He was recognized for his efforts in building a new world-class Wildlife Education Center at the Bear River NWR.

honors

Fish and Wildlife Service Deputy Director **Marshall Jones** and Assistant Director for Fisheries and Habitat Conservation **Mamie Parker**



Glenn Carowan (right), Refuge Manager of the Year, with former Interior Secretary Gail Norton.

received Executive Leadership Awards from Deputy Interior Secretary Lynn Scarlett, in May 2 ceremonies at the Department of the Interior in Washington, DC. Jones was named deputy director of the Service in 2000. He began his career as a biologist and technical writer in 1975. Since then, he has served as assistant director for International Affairs and Endangered Species division chief in the Atlanta Regional Office. Jones holds degrees from the University of Michigan and Murray State University. Parker, who received a Silver award, began her Service career as a fish health practitioner at the Genoa National Fish Hatchery in Wisconsin and later served as regional director for the Service's Northeast Region. She received the award for her leadership in the Fisheries and Habitat Restoration arena in the development of the National Fish Habitat Action Plan. Parker, who holds degrees from the University of Arkansas, the University of Wisconsin at Green Bay and the University of Wisconsin at Madison, was inducted into the Arkansas Outdoor Hall of Fame in 2005. Jones

and Parker were among 20 members of the Senior Executive Service within the Interior Department who were presented with Presidential and Executive Leadership Awards.

The Friends of the Great Swamp National Wildlife Refuge (below) in Basking Ridge, New Jersey, received the National Wildlife Refuge System's Friends Group of the Year Award, according to Marvin Moriarty, northeast regional director of the Fish and Wildlife Service. The award is given by the National Wildlife Refuge Association and the National Fish and Wildlife Foundation. "The Friends of the Great Swamp National Wildlife Refuge fortifies the refuge's environmental education and outreach programs, service to the public, and its ties to the community," said Moriarty. "This group exemplifies the valuable role these volunteer citizen-based organizations have in advocating for and supporting the National Wildlife Refuge System's wildlife conservation and public use programs."

Glenn Carowan (above), manager of Maryland's Chesapeake Marshlands National Wildlife Refuge Complex, has been selected as Refuge Manager of the Year by the **National Wildlife Refuge Association** and the **National Fish and Wildlife Foundation**, according to Marvin Moriarty, northeast regional director of the Fish and Wildlife Service. As project leader of Blackwater, Martin, Susquehanna and Eastern Neck National Wildlife Refuges, Carowan is credited with employing strong partnerships and sound science to protect and restore wetlands, forests and >>



Friends of the Great Swamp National Wildlife Refuge.

(Honors, continued)

islands. Through a successful collaboration among several agencies, Carowan led a campaign to remove nutria from the refuge and the surrounding Chesapeake Bay area. Native vegetation and wildlife have made a rapid comeback following the removal of these destructive large rodents, which were introduced from South America to the U.S. early in the 20th century.

California Biological Science Technician **Katie Moriarty** and South Dakota Wildlife Biologists **Bridgette Flanders-Wanner** and **Silka Kempema** are Service employees among 10 early career professionals selected to participate in The Wildlife Society Leadership Institute. The institute is geared toward young professionals who are two to three years out of school, currently working in wildlife management or conservation, and active members of The Wildlife Society.

Shirley Miyake received the Professional Service Award for her outstanding contributions to the Service's safety and health program during her tenure as the Mountain-Prairie Region Safety Manager from 1998 to 2005. In particular, Miyake is recognized for her design of a safety audit compliance and tracking system which provides supervisors and project leaders with timely safety audit reports, tracks the correction of findings, and informs management of the status of each audited facility's safety and health compliance. Ms. Miyake's efforts have been successful in reducing the occurrence of accidents in the Mountain-Prairie Region, which consistently has one of the best safety records in the Service.

Kevin Jensen received the Safety Award of Merit for his exceptional efforts as the Federal Interagency Wildland Firefighter Medical Qualifications Program Manager. This position is sponsored by the Service and addresses the medical qualification standards for all Federal agencies involved in

Federal wildland firefighting. Since 2002, Mr. Jensen has successfully managed this program. Largely due to Mr. Jensen's personal dedication and superior facilitation and coordination skills, the Wildland Firefighter Medical Qualifications Program continues to meet or exceed its targeted goals.

Three Service employees and three Service programs were honored May 4 for outstanding contributions to the mission and goals of the Department of the Interior at the 63rd Departmental Honor Awards Convocation. Deputy Interior Secretary Lynn Scarlett presented Deputy Director **Marshall Jones**, who has been with the Service more than 30 years, with a Distinguished Service Award, the highest employee honor bestowed by the Department. Jones served as acting director of the Service for 13 months during two transition periods, is a holder of the prestigious Ira Gabrielson Leadership Award, and only last month received the Senior Executive Service's Executive Leadership Award. **Arthur Kitchen**, with the Service's Wisconsin Private Lands Office in Madison, Wisconsin, received the Secretary's 4 C's Cooperative Conservation Award, recognizing his work on the Pike River Dam Removal and River Restoration Project in Kenosha County, Wisconsin. The project added 25 miles of trout and salmon habitat. **Bridget Nielsen**, of the Service's Nevada Fish and Wildlife Office in Reno, Nevada, also received a Secretary's 4 C's Cooperative Conservation Award for her contributions and achievement in the field of conservation partnerships in Nevada. In addition, Scarlett recognized **Susan D. Haseltine**, Associate Director for Biology at USGS. Haseltine's Federal career has included several research positions in the Service. Service programs honored included the Pacific Region's **Cathlapotle Plankhouse Project Steering Committee** team; the Southwest Region's **Bahia Grande Restoration Partnership**; and the **Maine Atlantic Salmon Conservation Fund**.

Fisheries biologist and writer **Craig Springer** won first place in Outdoor Writers of Ohio Excellence in Craft for best magazine articles for his memoir titled "A Letter from Indian Creek," published in *Ohio Magazine*. The Ohio native, who began his career with the Ohio Department of Natural Resources, also won first place for best online articles for his story "Conservation at the Speed of Light," published in *ESPN Outdoors*.

Julie St. Louis received the 2006 Migratory Bird Surveys Branch Award for her contributions to the program's mission.

The Service presented its Federally Assisted Civil Rights Award for 2005 to the **Arizona Game and Fish Department**. The Federally Assisted Civil Rights Award recognizes the State fish and wildlife agency which has demonstrated a record of excellence in providing equal access for different races, genders and disabilities to programs and services offered to the public.

Service staff at **Big Lake National Wildlife Refuge** received an Outstanding Maintenance Award for the fifth consecutive year from the U.S. Army Corps of Engineers at the Big Lake NWR office located east of Manila. The Big Lake Area Project consists of five structures and a series of connecting channels and levees. These structures and others are part of an extensive network within the Lower Mississippi Valley to provide drainage and reduce flooding. The structures also allow refuge staff to manage water levels and water quality for the benefit of wildlife, fish and plants within Big Lake National Wildlife Refuge and to provide sufficient water levels to flood the Hornersville Swamp Wildlife Management Area and Big Lake Wildlife Management Area during waterfowl hunting seasons.

Rhode Island state Reps. Arthur Handy and Peter L. Lewiss honored **Wendy Edwards** (above), of the Rhode Island National Wildlife Refuge Complex in Charlestown, for her work to help recover threatened piping plovers. Edwards' work as



Wendy Edwards

piping plover coordinator entails monitoring nearly 60 nesting pairs of the tiny shorebirds during the spring nesting season, looking for nest scrapes, counting eggs and then chicks, and working with the state and private landowners.

Members of the Service's **Northeast Regional Office Green Team** received a Fish and Wildlife Service Environmental Leadership Award recognizing significant environmental improvements to the 72,000-square-foot building in Hadley. The award honors outstanding leadership in greening the government through waste prevention, recycling and environmental management. The Green Team began working in 2004 to increase conservation measures in the leased building. Several regional office employees, who helped implement environmental management systems in Service field offices in the Northeast, proposed environmental changes in the regional office to reflect the Service's conservation mission.

Special Agent **Jack Baker**, a criminal investigator with the Fish and Wildlife Service Office of Law Enforcement in Washington, N.C., and Maj. **Bruce Buckson**, who serves as the Florida Fish and Wildlife Conservation Commission's coordinator for manatee law enforcement, have received the National Fish and Wildlife Foundation's 2006 Guy Bradley Award for wildlife law enforcement.

Jerry F. Leinecke received the Department of the Interior's Superior Service award during the Pacific Region's Refuge Project Leaders meeting in February in recognition of his leadership and significant contributions in the Hawaiian and Pacific Islands National Wildlife Refuge Complex. A veteran of 22 years in leadership roles in the complex, Leinecke became project leader in 2001. During the next few years, he coordinated the addition of two new refuges, Palmyra Atoll and Kingman Reef, adding almost 931,000 acres to the National Wildlife Refuge System and bringing the total number of refuges in the Pacific to 19. He dealt with issues ranging from refuge expansions to personal assaults on Refuge staff, destructive typhoons and floods, and an underground fuel release. His work with Federal, state and private partners helped ensure the long-term stewardship of wildlife resources in the Pacific arena, which includes some of the most diverse and biologically complex ecosystems on earth.

in memoriam



Art Hawkins, an early pioneer in waterfowl management and mentor to generations of like-minded students and

conservationists, died in March at the age of 92. As one of the last living students of Aldo Leopold, the father of modern wildlife management, Hawkins helped pioneer waterfowl surveys that spanned North America, and he spent nearly 40 years as a U.S. Fish and Wildlife manager. Hawkins served in the Army from 1941 to 1945 but never saw action overseas because of a foot ailment. In 1946, he joined the Fish and Wildlife Service, where he left his biggest mark on waterfowl management.

Hawkins pioneered aerial waterfowl surveys in the United States and Canada, developing routes for counting waterfowl that are still used today. He developed many of the nation's earliest waterfowl management and research plans, creating a roundtable of biologists from 13 states along the Mississippi Flyway who discuss and set waterfowl seasons and bag limits. Hawkins served as the flyway's chief biologist from 1954 to 1972, when he retired from the Fish and Wildlife Service, though he worked part time until 1983.

Hawkins is survived by his wife of 65 years, Betty; children Amy Dunlin of Lino Lakes, Tex; Hawkins of Winona and Ellen Hawkins Brandenburg of Tofte, MN; and four grandchildren.

Memorial contributions can be sent to two environmental groups: the Madison Audubon/Faville Sanctuary, 222 Hamilton St., Madison, WI 53703 or the Aldo Leopold Foundation, E. 12919 Levee Road, Baraboo, WI 53913.



Robert "Bob" E. Gilmore died April 28 in Point Clear, Alabama. Gilmore began his career in 1954 as a research assistant at the Auburn

Cooperative Wildlife Research Unit in Alabama. During a career that spanned nearly four decades he served as Migratory Bird Program Coordinator, Regional Director for Alaska and the Executive Director for the Gulf Coast Conservation Association. In 1990, he retired from the Service to become Executive Director for the Alabama Forest Resources Center. He received two special achievement awards and the Department of the Interior Meritorious Service Award during his distinguished career. Gilmore also was an accomplished bird/decoy carver and won numerous competitions during retirement. He is survived by his wife, Suzanne

Gilmore; his mother, Dorothy Borden; his children, Steven, Tep and David; and eight grandchildren.

In lieu of flowers, the family requests donations be made in Memory of Robert E. Gilmore to either: Waterfowl Festival Endowment Fund, P.O. Box 929, Easton, MD 21601, or Coastal Conservation Association, P.O. Box 16987, Mobile, AL 36616.



Debra Lynn Davies, former Deputy Assistant Manager and Acting Manager of Bosque del Apache National Wildlife Refuge, died May 26

in Albuquerque, New Mexico. Born in Dayton, Ohio on June 16, 1956, Davies earned a bachelor's degree in agricultural engineering from Arizona State University and master's degree in civil engineering from Washington State University. She was a graduate of the Service's Advanced Leadership Development Program. Davies spent the last 10 years of her career in Socorro County working at both Sevilleta and Bosque del Apache National Wildlife Refuges. Colleagues said, "Deb loved her job, the nature of the Rio Grande Bosque and working to ensure that all aspects of conservation were employed at Bosque and at Sevilleta National Wildlife Refuges. That brought her contentment. To her, it was a labor of love." Davies found the southwest to be the perfect backdrop for her interests. She enjoyed the outdoors as an active hiker, skier, rock climber and kayaker.

In her memory, Friends of Bosque del Apache are pursuing purchase of additional lands associated with Chupadera Peak on the west boundary of the Refuge. Donations may be made to Debra Davies Memorial Fund, c/o the Friends of Bosque del Apache, PO Box 340, San Antonio, NM 87832.

Richard Lowell Hill died November 13, 2005, at age 61 after a lengthy battle with prostate cancer. Richard began his career with the Service in 1975 as a wildlife biologist and retired in 2003 after working in South Dakota, Kansas, Wyoming and Oregon. For the last 13 years of his career, Richard worked in the Endangered Species Program as a section 7 consultation specialist in the Pacific Region. He is survived by his wife, Pamela; daughter, Emily; sister, Anna; and stepfather, Dale Nelson.

William "Bill" Smoke died April 23 in an airplane accident near Palmer, Alaska. Smoke began his career with the Service in 1993 in King Salmon, Tok and Anchorage. During his time in the Alaska Regional Office and on the Alaska Peninsula/Becharof and Tetlin National Wildlife Refuges, he contributed significantly to the construction of Tetlin's headquarters facility in Tok. Smoke was an exceptional woodworker, building fine furniture, homes and barns. He loved flying, fishing, hunting, camping and boating.

Survivors include his wife, Janis Smoke; daughters and son-in-law, Lindy Smoke and Becky and Jason Sander; sons, Alex Smoke and Michael Howard; granddaughter, Kendra Sander; grandson, Andre Sander; mother, Helen McCormick; brother, Russ Smoke; and sisters, Eileen Smoke and Ellen Sime.

Memorial donations for the Smoke children may be made at Alaska USA Federal Credit Union, account 1266801, in the name of Janis Smoke. Condolences may be sent to the Smoke family at P.O. Box 671954, Chugiak 99567.

James O. Keith died May 30 in Centennial, Colorado. Keith worked 37 years for the Service studying the effects pesticides on birds in the United States and Mexico. His work contributed to banning DDT use in the United States. Memorial donations can be sent to Denver Rescue Mission, Box 5206, Denver, CO 80217.



JAMES WATT

French Frigate Shoals, Hawaiian Islands National Wildlife Refuge. In April, PBS aired the two-part "Voyage to Kure," featuring Jean-Michel Cousteau (see story page 7). Filmed in 2003, the 2,500-mile journey explores the tiny coral islands and expansive coral reefs that are protected today by the State of Hawaii, NOAA's National Ocean Service and the U.S. Fish and Wildlife Service. Today, all three government agencies are working together to ensure the continued protection and restoration of this remarkable and little-known part of America.

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