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Protecting natural resources on the front lines of immigration.

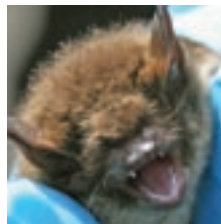
By Jose Viramontes and Nancy Brown



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Pearl Harbor National Wildlife Refuge provides a living classroom for local school children.

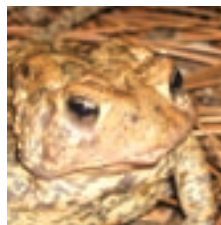
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By Ben Ikenson



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By Ashley Spratt

On the cover: *A black-footed albatross chick on Laysan Island in the Northwestern Hawaiian Islands, which supports one of the largest albatross populations in the world.*

MARC ROMANO, USFWS

Single Gains

On a beautiful spring morning last April I had the pleasure of helping unveil the Ira N. Gabrielson historical marker in Oakton, Virginia. This event was special not only because it recognized Dr. Gabrielson—the first Director of the Fish and Wildlife Service, who was aptly called “Mr Conservation” for his contributions to the profession—but also because it reminded me of the Service’s long tradition of overcoming adversity.



Director Hall and Carla Ferris, great granddaughter of Dr. Ira N. Gabrielson, unveil Gabrielson’s historical marker in Oakton, Virginia.

Dr. Gabrielson was both resourceful and visionary. In the midst of the Depression and the waning years of drought and Dust Bowl, he oversaw a huge expansion of the Refuge System—from 63 refuges when he took over as Director to 210 by the time he retired—a nearly fourfold increase. In 1939, Dr. Gabrielson helped create the Patuxent Research Refuge—the only wildlife refuge dedicated to research; he oversaw production of the first Refuge Manual in 1942, which established

uniform policies and practices on refuges; and in 1943 Dr. Gabrielson wrote *Wildlife Refuges*, the definitive book on the Refuge System. In the book, he wrote, “The conservation battle cannot be a short, sharp engagement, but must be grim, tenacious warfare—the sort that makes single gains and then consolidates these gains until renewed strength and a good opportunity make another advance possible.”

Despite today’s threats—climate change, invasive species, land conversion and a host of other challenges—the Service continues to make “single gains” that advance our conservation mission.

I was recently reminded of this at a breakfast honoring federal employee finalists for the Service to America Medals program. One of the finalists was our own Greg Neudecker, Partners for Fish and Wildlife biologist at Benton Lake, Montana. I was proud for Greg and the Service that his work on the Blackfoot Challenge—a program where private landowners and public agencies find common ground in keeping

large landscapes and rural lifestyles intact—was recognized at this high level. The honor vindicated our philosophy of working with private, state and federal land stewards to move the needle forward for fish and wildlife conservation, and it says volumes about what the public and others expect of federal government.

I began to think about all of you out there making single gains every day with no regard for recognition or praise.

I thought of people like Patrick Leonard, who is creating ecosystem approaches to threatened and endangered species instead of one species at a time; of Scott Schliebe, who has worked diligently for decades to understand the polar bear and provide critical information that helped influence our decision to list the species; of Gail Carmody, who is working tirelessly to understand the impacts of water management in Georgia, Alabama and Florida so intelligent Service positions can be established based on good science; of Mike Bryant, standing his ground with good science that countered the Navy’s proposal to establish an Outlying Landing Field next to Pocosin Lakes National Wildlife Refuge in North Carolina, an action that would have been unacceptable for the migratory birds we hold so dear; of Caroline Peterschmidt and her staff at Makah National Fish Hatchery, who are helping to restore salmon; of Phil Thorpe, who spends months away from his family up in Canada so we have the best information possible upon which to establish migratory waterfowl hunting bag limits each year; of John Rogner, who day in and day out is making a huge difference in Chicago and is largely responsible for the tremendous working relationship we have there.

I could literally go on and on with specific examples of all of you who are truly making a significant difference, but suffice it to say I am aware of your good work and I am humbled by it. Each and every one of you makes me honored to occupy the seat I am privileged to have.

Throughout the history of the Service, our employees have always stood for integrity and professionalism. That is still true today. Like Ira Gabrielson and others before and after him, we will no doubt endure trying times. But I come to work each day with the comfort of knowing that you—the men and women of the U.S. Fish and Wildlife Service—are up to the challenge. Thank you for everything you do every day for the Service, our natural resources and the American people. □

Natural Prescription for Health

The U.S. Department of the Interior and the National Institutes of Health's We Can! program—a national science-based education program developed to help children ranging from 8–13 years old maintain a healthy weight—are partnering to encourage children and families to get outside and play at a nearby national park or national wildlife refuge.

Increasing physical activity is a primary goal of We Can! (Ways to Enhance Children's Activity and Nutrition). We Can! is a program of the National Institutes of Health (NIH), a component of the U.S. Department Health and Human Services. The program provides tips and resources for parents, caregivers, and community organizations to help children and their families make better food choices, increase physical activity and reduce the amount of time they devote to sedentary activities such as video games. The program is now underway in more than 800 community sites in all 50 states and 10 countries.

The government partners are joining 40 other national partners in support of We Can! National wildlife refuges and national parks also provide ideal settings for family activities such as a walk in the woods, bike riding, fishing, canoeing or a wildlife watching trip. Emerging research shows that children who feel connected to nature have better physical, mental and emotional health. And sharing the outdoors together can build strong family bonds and create lifelong memories.



A family pauses during a hike in Alaska.

"We're very pleased to partner with NIH and help make the nation's fisheries and wildlife refuges and national parks a welcome and exciting resource for youth, parents and caregivers to promote a love of nature and the great outdoors," said Secretary of Interior Dirk Kempthorne. "With more than 181 million acres of public land in the National Wildlife Refuge System and National Park System, we can provide numerous opportunities for families. We need to get children and their families out of cyberspace and into open spaces. To put down their BlackBerries and go pick blackberries. To stop channel surfing and go wind surfing. To shut off the Web casts and cast a line for a trout." □

For a list of activities that families can do together, visit wecan.nhlbi.nih.gov.

Valerie Fellows, External Affairs, Arlington, Virginia

Supporting Science in a Changing Arctic

The Circumpolar Biodiversity Monitoring Workshop, a wide-ranging partnership of international experts and others with a stake in the changing arctic, recently met to lay the foundation for informed research into, and management of, natural resources in this changing portion of the globe.

The event, held in March at the World Wildlife Fund's Washington, DC headquarters, was organized by a steering committee chaired by Dr. Janet Hohn of the U.S. Fish and Wildlife Service and included members representing the Circumpolar Biodiversity Monitoring Program (CBMP), the International Union for the Conservation of Nature's USA Multilateral Office, and the Service. In attendance were representatives from a variety of government agencies (from the U.S. and other Arctic nations), academia, and international non-governmental organizations and foundations. The goal of the

diverse coalition is "to harmonize and enhance monitoring across the Arctic to improve detection, understanding, and reporting, and to strengthen efforts to conserve biodiversity."

In working toward this objective, the meeting achieved short-term goals and, perhaps more importantly, established a groundwork to effectively guide future shared conservation and monitoring efforts across the circumpolar Arctic. Looking forward, the products of this workshop will provide an international climate-change early-warning system, and inform policy and decision-making at the global, national, regional, and local levels.

As defined by the Conservation of Arctic Flora and Fauna Working Group (CAFF), the circumpolar Arctic covers some 14.8 million square kilometers of land and 13 million of ocean. While this huge region has relatively few species

The Arctic's contributions to world biodiversity—particularly in the form of the wealth of migratory bird and marine mammal species, such as walrus, that depend upon the area's brief but productive summers—are substantial.



in comparison to the richly diverse tropics, its contributions to world biodiversity—particularly in the form of the wealth of migratory bird and marine mammal species that depend upon the area's brief but productive summers—are substantial. In fact, the Arctic supports more than half of the planet's shorebird species, more than three-quarters of the world's geese, millions of reindeer and caribou that are essential to northern human communities, and more than a quarter of the world's commercial marine fish harvest.

Mike Gill, Chair of the Circumpolar Biodiversity Monitoring Program, characterized the workshop's accomplishments: "With the help of some of our existing partners," he said, "we were able to leverage new strategic partnerships in several key areas of the program. The program is very well positioned to deliver on the key products and activities planned over the next five years. We are confident that our vision of expanded and enhanced Arctic biodiversity monitoring and improved conservation and adaptation decisions for the Arctic will be achieved." The CBMP is the primary tool which CAFF will use to respond to the recent Arctic Climate Impact Assessment's call for additional long-term monitoring of Arctic biodiversity.

Among other things, workshop participants helped advance a five-year implementation plan, along with specific strategies to deal with shared communications, data management, and "indicators strategies," which involve selecting representative species, habitats, and critical ecosystem

services and functions that will effectively reflect the challenges faced by the Arctic as a whole. Emphasizing the value of these contributions, Dr. Hohn of the U.S. Fish and Wildlife Service noted that "the results of this gathering will make significant contributions to CAFF's 2010 summary report to the Arctic Council Ministers, which will be based on the CBMP indicators."

With these accomplishments as a basis, the Circumpolar Biodiversity Monitoring Program hopes to develop a comprehensive strategy for monitoring Arctic resources; to establish five ecosystem expert teams (focusing on, respectively, marine resources, coastal resources, fresh water resources, terrestrial vegetation, and terrestrial fauna) which will conduct ongoing biodiversity monitoring and collaborate on circumpolar solutions; and to ultimately develop an online database to integrate, synthesize, and report key trends in Arctic biodiversity. Special attention will also be paid to community-based observations, in order to augment scientific-based monitoring with valuable traditional ecological knowledge.

Just as the many of the natural riches of the circumpolar world are not restricted by international boundaries, so will the challenges that this region faces require cooperation among a diverse assortment of nations and other stakeholders. The Circumpolar Biodiversity Monitoring Workshop provides a platform upon which those future successes can be built. □

*Bruce Woods, External Affairs,
Anchorage, Alaska*

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Reeling In Lapsed Anglers

In an effort to recruit anglers nationwide, the Recreational Boating & Fishing Foundation (RBFF) recently developed and launched a direct mail marketing program to help state agencies communicate with their lapsed anglers and get people back out on the water.

The nationwide recruitment and retention program, which all states can use to help increase fishing license sales, kicked off in March 2008 with 30 state agencies. The program is designed to increase participation in boating and fishing and generate awareness about the connection between fishing license sales and aquatic conservation efforts.

Postcards, self-mailers and letters featuring creative elements from the national Take Me Fishing™ campaign will reach millions of anglers nationwide this year. RBFF is placing local radio and online advertisements to correspond with individual state campaigns. Each state also received a public relations toolkit to help communicate about the program and promote local efforts.

"Anglers across the country will be reminded to buy their fishing license and take their friends and family out on the water," said RBFF President and Chief Executive Officer Frank Peterson. "We know that state conservation projects are funded in part by fishing license sales and tax monies generated from equipment sales and motor boat fuel. Consumers are playing a critical role in supporting local conservation efforts and protecting their waterways when they go boating and fishing."

Participating states include: Alabama, Alaska, Arkansas, Colorado, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia and Wisconsin.

More information about the RBFF program, including links to press announcements, quotes from participating states, and the Direct Mail Marketing kit is available online at <RBFF.org>. □

*Stephanie West, Recreational
Boating and Fishing Foundation,
Alexandria, Virginia*

Partners Promote Pollinators

Pollinators are critically important to both the ecosystem and the U.S. economy. More than 75 percent of flowering plants rely on pollinators, and honeybees are responsible for an estimated \$15 billion worth of pollinator “services” to U.S. agriculture.



USFWS

Pollinators are also critically important to the conservation and management of plants at risk of becoming endangered or threatened. Most plants rely on animal pollinators to carry pollen from one flower to another so they can produce the seeds vital to reproduction. For their part, the pollinators usually receive a nectar reward.

Recent evidence indicates that certain pollinators may be declining. People from nonprofit organizations, government, industry and academia are working together through the North American Pollinator Protection Campaign (NAPPC) to promote pollinator conservation

and education. In celebration of Pollinator Week, June 22–28, the Service, other federal agencies, and NAPPC provided a variety of conservation and educational tools and materials to promote pollinator awareness.

The Service provided outreach materials, including Web site links to a series of podcasts (a digital recording of a radio broadcast or similar program) developed by the Service and other federal agencies on a variety of pollinator topics. The podcasts included such topics as how to help pollinators and native bee inventories in the National Capital area.

The Pollinator Partnership Web site <www.pollinator.org> also includes an Ecoregion Locator that directs visitors to the proper ecoregion based on their zipcode. A pollinator curriculum titled “Nature’s Partners: Pollinators, Plants, and You” can be downloaded from the site without charge. The curriculum was designed to educate third to sixth grade children about pollinators, the important role they play, and ways they can help pollinators survive. It is beautifully illustrated and emphasizes the scientific thinking process.

If you would like to learn more about pollinators and what you can do to help them, visit the Service’s Pollinator Portal at <www.fws.gov/pollinators>. □

Dolores A. Savignano, Division of Environmental Quality and liaison to the North American Pollinator Protection Campaign, Arlington, Virginia

Reducing the Threat of Wildfire



Interior Secretary Dirk Kempthorne (right) inspects lands at Santa Monica Mountains National Recreation Area in California on June 11 that received hazardous fuels treatments to help protect communities from the threat of wildland fire.

Secretary of the Interior Dirk Kempthorne announced in June that the Department of the Interior has reduced the threat of wildfire through hazardous fuels treatments on more than 10 million acres of land, especially in critical areas near towns and communities, and is well-positioned to respond to the 2008 wildland fire season.

“The major factors in determining the severity of this season are hazardous fuel conditions, persistent drought, and the proximity of hazardous fuels to Wildland-Urban Interface areas,” Kempthorne said. “While we cannot influence the drought, we have been very active in reducing fuels that feed wildfires, especially near homes, communities, and resources to slow or stop these fires from threatening these high-value areas.”

“This spring, we have exceeded 10 million acres treated by our four major land management agencies and have assisted their state and local partners,”

Kempthorne said, calling the milestone a significant achievement. “That’s an amount of land larger than the entire state of Maryland.” The Interior agencies are the National Park Service, Bureau of Land Management, Bureau of Indian Affairs and U.S. Fish and Wildlife Service.

From 2001 to 2008, Interior has invested \$1.6 billion to reduce the threat of wildland fires for communities and natural resources. The Department has been especially active in the Wildland-Urban Interface, where \$989 million supported treatments to reduce fuels accumulations. About \$597 million funded fuel treatments in areas outside the Interface.

The number of acres Interior treated annually around and near communities at risk from wildfire has increased 195 percent, from more than 164,000 in 2001, to more than 484,000 planned under the 2009 request. By 2009, Interior agencies will have treated almost four million acres of Interface areas.

Brian McManus, Chief of the Branch of Fire Management in Boise, Idaho, said the Fish and Wildlife Service annually treats about 300,000 acres on and around National Wildlife Refuge System lands.

"About one-half of the acres treated are near homes and communities adjacent to refuges," McManus said. "These treatments are designed to protect communities, lives, property, and natural resources from unwanted wildfires. They usually have the added benefit of improving wildlife habitat, which is naturally of great interest to the Service.

"Reducing hazardous fuels up front is by far the best bang for our buck to minimize the risk of damaging and costly wildfire," he added. "Fuels treatments often cost \$100–\$200 per acre. Wildfires—depending upon circumstances—can generally cost more than three or four times that amount per acre to suppress."

The Service and other Interior agencies will continue to emphasize pre-positioning of equipment and initial attack to keep small fires from becoming large fires during the 2008 wildland fire season, which as of June had already burned more than 1.5 million acres.

More information on Interior and National Interagency Fire Center preparedness can be found at www.nifc.gov. □

DOI Communications. Additional reporting by Karen Miranda-Gleason, National Fire Outreach Coordinator, Boise, Idaho

Learning From Each Other

While the U.S. Fish and Wildlife Service has long collected a wide variety of physical and historic artifacts through its Heritage Program, personal stories—details about Service employees' work experiences, successes and even disappointments—have never been compiled.

These stories are being assembled for the first time in the soon-to-be-launched publication, *Retirees' Almanac*. It will also carry stories from long-time employees who are contemplating retirement in the near future.

The publication will debut in the fall at the retirees' reunion in

Minneapolis, Minnesota from October 9–12. The *Almanac*, expected to be published annually, might increase its publication frequency if the amount of material submitted warrants it. It will be produced at the National Conservation Training Center and distributed free to Service retirees.

"We believe there are lots of manuscripts out there," said Mark Madison, Service historian. "I think we can learn a lot from such stories; most of all, what it is that connects us to the same goals." Not just limited to retirees' stories, the *Retirees' Almanac* will also carry other stories that run about 1,000 words.

"This is a wonderful idea," says Service Director H. Dale Hall. "It is about sharing important experiences with others. It's a chance to learn from one another."

Send stories and photos by August 1 to *Retirees' Almanac* editor, Spence Conley, at Wildfish65@aol.com. You can also mail Conley your story on a disk to 24 Clark Mountain Road, Sunderland, MA 01375. If you have questions, he can be contacted at 413/665 8004. □

Spence Conley, former Assistant Regional Director for External Affairs, Northeast Region

Living Colors



Orange-fin Anemonefish and Bubble-tip Anemone at Baker Island National Wildlife Refuge, part of the Remote Pacific Refuge Complex.

JIM MARAGOS / USFWS

Junior Duck Stamp Contest Heads West



First place winning Junior Duck Stamp art (left), while second place winner, Lydia Han, proudly shows her painting of ruddy ducks.

What do you get when you combine nearly 70 school children not only from California but as far away as Arizona, amazing art and a panel of five distinguished judges with a beautiful, fun and exotic location? The 2008 Federal Junior Duck Stamp Contest, of course.

On April 17, the Service held its 16th annual Junior Duck Stamp contest at the world famous San Diego Zoo in California. More than 100 students, teachers, members of the public and Service staff watched as the winning art was chosen from 52 entries representing 50 states, Washington, DC and Virgin Islands. The winning entry, an oil painting by 18-year-old Seokkyun Hong, from Dallas, Texas depicts a pair of Nene geese. Listed in 1964 as endangered under the predecessor of the Endangered

Species Act, Nene have not appeared on any Federal Duck Stamp since that time and are not eligible until the species is delisted; Nene have also never graced a Junior Duck Stamp

The San Diego Zoo is an important conservation partner of the U.S. Fish and Wildlife Service, as well as the State of Hawaii's Endangered Bird Conservation Program (HEBCP). HEBCP works in partnership with private landowners, the Service, the San Diego Zoo and other entities to develop and implement recovery efforts for Hawaii's most vulnerable bird species, including the Nene. Given that the San Diego Zoo is engaged in Nene recovery, it is fitting that the endangered Hawaiian goose will be represented on the 2008-09 Junior Duck Stamp.

Second place honors went to Lydia Han, age 15, of San Jose, California with her watercolor painting of a pair of ruddy ducks. In the audience when the results were announced, the surprised and thrilled young artist proudly held up her winning design for all to see. Rebekah Nastav, age 17, of Amoret, Missouri, won third place for her acrylic painting of a hooded merganser and plans to enter the Federal Duck Stamp Contest as soon as she becomes 18.

After the contest, Joe Hautman, 2007 Federal Duck Stamp Contest winning artist and lead judge for this contest, worked with the nearly 70 school children in attendance on the fundamentals of waterfowl painting. Afterwards, the San Diego Zoo environmental education staff took the students on a special zoo nature walk.

On June 27 the Service held its First Day of Sale event for both the 2008-09 Junior Duck Stamp and the 75th anniversary Federal Duck Stamp at Bass Pro Shops Outdoor World near Baltimore, Maryland and 40 Bass Pro Shops nationwide. Proceeds from Junior Duck Stamp sales are used to support environmental education efforts and awards for contest winners. For more information on the Junior Duck Stamp Program, visit www.fws.gov/juniorduck. □

Elizabeth Jackson, National Junior Duck Stamp Program Coordinator, Arlington, Virginia

Tempest on a Tabletop

In May, a team of partners representing the state of Alaska and federal agencies including the Service and USGS conducted an avian influenza "tabletop" exercise. The event provided an opportunity for these partners to work through their responses to a hypothetical breakout of avian influenza among wild birds and poultry in Alaska. By conducting such an exercise, the participating agencies hoped to identify and fix any problems in their respective response plans. In the unlikely event that an actual widespread outbreak of highly pathogenic H5N1 avian influenza (or "bird flu") actually does occur in Alaska at some point in the future, the lessons learned in the tabletop exercise should prove to be of great value.



The proposed scenario required an interagency response to a series of avian influenza-related bird die-off events at different locations in Alaska, beginning with migratory birds and later domestic poultry. The Alaska State Department of Environmental Conservation took the lead on organizing the exercise, but representatives of the U.S. Fish and Wildlife Service, the USGS Alaska Science Center, the USGS National Wildlife Health Center, and Alaska Department of Fish and Game were all part of the planning team.

The final segment of the exercise enabled those who would be called upon to respond to a wild-bird mortality event to practice protocols, the use of personal protective gear in a field setting, and actual sample collection. The banks of Anchorage's Campbell

Creek provided a suitably challenging muddy and brushy locale, and unseasonable spring heat emphasized the discomfort and fatiguing nature of working in protective gear.

The levels of teamwork and cooperation shown during the entire event were impressive, and though some shortcomings in response protocols were discovered, that was the aim of this tabletop exercise. Additional such meetings are planned to continue to refine procedures and to make sure that all of those responsible for responding to a potential outbreak of highly pathogenic H5N1 avian influenza in Alaska are confident and ready to do so. □

*Bruce Woods, External Affairs,
Anchorage, Alaska*

Participants in the interagency exercise go through their response to a staged wild-bird mortality event near the banks of Anchorage's Campbell Creek.



COURTESY USGS

Patuxent Welcomes Wounded Soldiers



ED GRIMES

Veterans and their families enjoy time together outdoors at the Patuxent Research Refuge.

Patuxent Research Refuge in Maryland occasionally serves as more than the nation's only national wildlife refuge established to support wildlife research. On June 12, the refuge hosted an outdoor field trip for soldiers receiving medical treatment at Walter Reed Army Medical Center in Washington, DC and Fort George G. Meade in Maryland.

Arranged and supported by staff from the Service's Headquarters Division of Visitor Services and Communications and Branch of Equal Opportunity and Diversity and the Patuxent Research Refuge, the event allowed soldiers and their families to spend a special day at the refuge—including a tram tour, a tour of the visitor center, and fishing at the accessible Cash Lake fishing pier. Approximately 35 wounded veterans attended.

"Military personnel undergoing lengthy treatment programs deserve something special like this," said Kevin Kilcullen, Branch Chief for Visitor Services in the Headquarters Region. "We are extremely pleased that a trip like this could be organized with the

assistance of the Walter Reed staff and hosted by the refuge."

Many of the soldiers who participated in the event said they planned to return to the refuge with their families. Others said the day outdoors provided a welcome break from the rehabilitation and stressful adjustments of returning from the war.

Refuge staff and organizers suggested possibly hosting another event in the fall and said they hoped the idea would catch on at other refuges across the country.

"We want to encourage connections in other regions so more military personnel can learn about the Fish and Wildlife Service and participate in our outdoor programs," said Carolyn McGuire, Diversity Manager for the Branch of Equal Opportunity and Diversity.

For more information about contacting medical centers in other regions or hosting similar events, contact McGuire at 703/358 2567; <Carolyn-McGuire@fws.gov>. □

Tesia Zientek, STEP Program Assistant, External Affairs, Washington, DC

*A pedestrian fence constructed
on Buenos Aires NWR.*



On the Border

*Protecting natural
resources on the front lines
of immigration.*

By Jose Viramontes and Nancy Brown

Photos courtesy U.S. Fish and Wildlife Service

During the past decade the debate over immigration reform has been at the forefront of American dialogue. At all levels of government, elected officials have been grappling with policies for dealing with thousands of foreign citizens who enter the United States illegally each year. According to a 2005 Government Accountability Office report, an estimated 5 million to 15 million people are currently living in the United States illegally.

Nowhere have the impacts of this difficult issue been felt more than on our southern border. Along the international border with Mexico the states of California, Arizona, New Mexico, and Texas have seen thousands of individuals attempting to cross into the United States illegally and thousands of federal agents attempting to stop them.

From the Pacific Ocean to the Gulf of Mexico, nearly half of the southern border—a distance of 820 miles—is federally or tribally owned. Land encompassing the remaining 1,080 miles is either privately or state owned.

Among these federal lands, the Fish and Wildlife Service manages six national wildlife refuges and cares for more than 30 species listed under the Endangered Species Act. In total, the Service is responsible for managing natural resources along 158 miles of border in Arizona, Texas and California. These 1.1 million acres of federal wildlife refuges along the border provide important habitat for endangered species, migratory birds, and other wildlife. In fact, many rare and endangered wildlife can only be found in these parts of the United States. The Sonoran pronghorn, masked bobwhite quail, ocelot and many other species have their last hopes vested in these lands. Overall, 32 species listed as threatened or endangered under the ESA reside within 25 miles of the international border.

Substantial illegal off road traffic and resulting border enforcement actions have left their mark on sensitive natural resources that the Service has worked for decades to restore and protect.

In 1994, the Immigration and Naturalization Service, now Customs and Border Protection (CBP), designed and implemented a broad national strategy to regain control of our nation's borders. The strategy called for “prevention

through deterrence” which sought to close the routes frequently used by immigrants and drug smugglers and to shift immigration traffic to areas that were much more difficult to cross. Further, the policy attempted to raise the risk of apprehension to a level so high as to deter immigrants from attempting to enter the United States illegally.

In many respects this approach worked. Apprehensions along the traditional immigration routes, primarily more populated areas, initially spiked and then over time decreased. According to CBP, since 1996, the highest number of apprehensions in Southwest sectors was in 2000 (1,643,679) and the lowest was in 2003 (905,065). However, an unintended consequence was a dramatic increase in the number of immigrants crossing far more treacherous and environmentally sensitive lands—such as national wildlife refuges. These areas became prime habitat for smugglers, undocumented immigrants, and eventually a substantial presence of federal border enforcement agents. Each leaves more than a footprint when traversing these sensitive lands.

Trails, Trash and Trucks

The shifting of thousands of illegal cross border migrants from populated centers to wild lands has had a tremendous impact to federal trust resources. Lands previously void of human impact have now been transformed into pedestrian highways. New trails and roads, frequently referred to as ghost roads, are being carved from south to north across the desert on a regular basis. These paths are dotted with human waste, abandoned vehicles, and areas of accumulated trash in lay-up sites where immigrants wait for the cover of darkness or for human smugglers—known as “coyotes”—who will pick them up and transport them along the next leg of their journey. >>



An endangered masked bobwhite quail on Buenos Aires NWR.

service spotlight

Border, continued from page 9.

In June of 2006, Mitch Ellis, then manager of Buenos Aires National Wildlife Refuge in southern Arizona was asked to testify before the House Appropriations Committee on the impacts of illegal immigration on federal lands. For the second time in as many years, Congress hosted a hearing focusing on these impacts.

Research has concluded that each person who attempts to cross the border leaves 5 to 8 pounds of trash. During the years, the trash has accumulated and now tons of trash litter the desert. In his testimony, Ellis reported to the committee that by conservative estimates more than 500 tons of trash are left behind by illegal border crossers.



An immigrant “lay-up” site on Buenos Aires NWR. Here immigrants wait for the cover of darkness or for human smugglers—known as “coyotes”—who will pick them up and transport them along the next leg of their journey.

Also, more than 100 abandoned vehicles are towed from the refuge each year—far less than is actually left behind. Ellis further reported that more than 1,300 miles of illegal trails had been created on the refuge. In 2005 alone more than 235,000 illegal immigrants were estimated to have crossed the refuge.

It is not just the environmental impacts giving federal land managers concern. Violent crime and illegal drug activity have also risen. Thousands of pounds of marijuana have been seized on federal lands along the border (47,000 pounds on Buenos Aires Refuge in 2005 alone). In October 2006, Buenos Aires was forced to close 3,500-acres to public access due to an increase in violence along the border. Anyone—including refuge biologists—are now required to have a law enforcement officer accompany them when conducting field work in the area.

The human toll is a matter of even greater concern. Dozens of immigrants have died while attempting to cross the treacherous desert, most succumbing to exhaustion and dehydration, while others have been killed during altercations with human smugglers. Two federal agents have been killed in the line of duty while patrolling border lands. In 2002, Kris Eggle, a National Park Service Ranger at Organ Pipe Cactus National Monument in Arizona was killed while pursuing members of a drug cartel hit squad who fled into the United States after committing a string of murders in Mexico. And in January of this year, Luis Aguilar, a senior U.S. Border Patrol agent, was killed near the Imperial Sand Dunes Recreation Area in California when he was intentionally struck by the driver of a vehicle he was attempting to stop.

The annual impact from damage to sensitive public lands and species from the cumulative effects of illegal immigration, drug smuggling and border enforcement actions has become a growing concern for Service officials and more of a draw on already limited resources.

A ‘Catch-22 Situation’

Of course, there has not just been an increase in immigrant traffic across federal lands. Border enforcement agents with CBP have also shifted to the new desert immigration corridors. Patrol activities on ATVs, horseback, and in transport vehicles as well as apprehension of immigrants now frequently occur on environmentally sensitive federal lands. Through close coordination with federal agents, Service staff has been able to recommend that agents utilize established roads and avoid establishing new trails and roads whenever possible.

When the need to increase coordination between the Service and CBP first arose there was a clear disconnect between the two agencies. A report issued by the Government Accountability Office in June 2004 commented that there appeared a lack of understanding of agencies’ missions among federal land management and border enforcement agencies. Further, the report outlined recommendations for increased information sharing and coordination to ensure agencies focus on areas of greatest concern.

Coordination and dual agency efforts over the years expanded, and some efforts proved to be successful in allowing both agencies to meet their individual—sometimes contradictory—missions. A few examples of these successful efforts include:

- coordinating the installation of miles of vehicle barriers that allow passage of wildlife from one side of the border to the other;
- completion of a non-Jeopardy Biological Opinion for Customs and Border Protection’s proposed pedestrian barrier activities in Arizona;
- creating the Information Planning and Consultation System in an attempt to streamline and enhance the endangered species consultation process;
- permitting the use of refuge land by the Service for CBP staging areas, helipads, and horse corrals that are closer to the border in order to decrease the distance agents must travel to apprehend illegal immigrants;



Vehicle barrier on Buenos Aires NWR.

- conducting environmental awareness training for CBP agents;

- creating a National Borderland Coordinator position in the Department of the Interior to serve as a principle point of contact for the Department of Homeland Security.

In addition, in an attempt to address the concern for human life, the Service issued a permit to the nonprofit group Humane Borders to place and maintain water stations along known immigration routes on Buenos Aires Refuge, marked wildlife watering tanks on Cabeza Prieta Refuge with tall blue flags, and worked with CBP to install solar powered emergency rescue beacons that provide direct contact with CBP in the event that someone's life is in imminent danger.

Unfortunately, not all proposed activities allowed one agency or the other to proceed in a matter that was consistent with its purpose.

“It’s a Catch-22 situation,” noted Roger DiRosa the retired manager of Cabeza Prieta Refuge in southern Arizona. “Though allowing increasingly damaging activities to occur may ultimately save some wilderness resources, it is equally possible that they may not. It is a highly unique and problematic situation, requiring difficult and unique solutions.”

Nowhere was this conflict as prevalent as with the construction of a 700-mile ‘double-layer, impermeable’ pedestrian barrier prescribed by Congress in late 2006. >>



One of three water stations on Buenos Aires NWR permitted and maintained by Humane Borders.

service spotlight

Border, continued from page 11.

The Fence

On October 26, 2006, the Secure Fence Act was signed into law. The Act directed the Department of Homeland Security to construct “at least 2-layers of reinforced fencing and additional physical barriers” over a distance of 700 miles along the international border with Mexico. The law mandated that construction be completed by December 2008. Border segments identified for fence construction fall along the entire southern border and vary in length. A number of those segments mandated fall on national wildlife refuge lands or lands that provide habitat for sensitive species.

In general, fences are not good for wildlife. And then there is the tremendous impact to natural resources caused by the constant flow of immigrant traffic and necessary border enforcement actions. But the pedestrian fence actually may provide more benefits to trust resources than negative impacts.

In Arizona, a substantial portion of fence construction fell within what is known as the Roosevelt Easement, a Presidential Proclamation from 1907 that reserves a 60-foot strip along the international boundary with Mexico. The easement was established in order for the United States to maintain the area “free from obstruction as a protection against the smuggling of goods between the United States and Mexico.” However, the proclamation only applied to lands in public ownership at the time. This meant that for most fence construction in Arizona, CBP was not required to consult with the Service. For the small area of land managed by the Service that did not fall within the easement the Service and CBP agreed to execute a land exchange.

In other areas the Service has been able to work with CBP in the design of fence segments to incorporate wildlife passage elements, and for other segments CBP has committed to mitigation measures for the fences’ impacts on listed species.

“During the past several years we have been able to work with CBP towards mutually beneficial solutions. The Secure Fence Act had the potential to threaten that success, but it hasn’t,” said Southwest



Sonoran pronghorn

Regional Director Benjamin N. Tuggle. “There are still concerns, such as those in Texas and with the pronghorn population at Cabeza Prieta, but we will continue to try and work those out in a way that is least detrimental to the resource.”

Some of the more substantial remaining concerns for the Service are potential impacts to the endangered Sonoran pronghorn in Arizona and the ocelot in South Texas. The Sonoran pronghorn population at Cabeza Prieta Refuge comprises only 70 animals and is the only population remaining in the United States. In a letter to CBP, the Service expressed concerns that the proposed project associated with CBP’s Secure Border Initiative in Arizona “may significantly impair the likelihood for both the recovery and survival of the Sonoran pronghorn population at Cabeza Prieta National Wildlife Refuge.”

The Service and DHS have been working to address concerns with impacts of construction to the endangered ocelot in southern Texas. However, those efforts may have recently hit a wall.

Everything is Bigger in Texas

In southern Texas, 70 miles of proposed border fence will follow an existing levee system just north of the Rio Grande. Where the levee ends, the remainder of the fence will follow along the edge

of the river. Along this final stretch of the Rio Grande, CBP has proposed 23 fence segments in three Counties (Cameron, Hidalgo, Starr) that range in length from one to 13 miles.

Also found along the final stretch of the Rio Grande is the Lower Rio Grande Valley National Wildlife Refuge (LRGV), a wildlife corridor comprised of 115 tracts, most of which are situated along river’s edge. The 90,000 acre Refuge includes approximately 70 river miles and is situated in an area where 95 percent of off-refuge habitat has been cleared.

The southernmost tip of Texas constitutes one of the most biologically diverse regions in North America with four converging climates (temperate, coastal, desert and subtropic), 11 distinct habitat types, two migratory flyways (Central and Mississippi), a documented 1,200 species of plants, 513 species of birds and 300 species of butterflies. It is for the sole purpose of protecting this biodiversity that the LRGV was established in 1979.

Beginning May 2007, refuge and Service staff were been working with CBP on the border fence issue within the lower Rio Grande Valley sector. The originally agreed-upon fence design placed the border fence along the north side of the levee system within Cameron and Hidalgo County, included wildlife passages and allowed access to landowners.

In January 2008, however, after completion of a Draft Environmental Impact Statement, Hidalgo County proposed a second fence design, one that would integrate a major flood-control component. The County’s proposal replaced the wildlife friendly fence with a 16- to 18-foot-high concrete wall. The wall would be placed on the south side of the levee, which will effectively eliminate wildlife passage, access points and require more habitat be taken out for construction. In addition, Hidalgo County’s design will force down-stream areas to incorporate similar measures because of the resulting increased flows. CBP accepted the County’s proposals and efforts are underway to complete construction of 22 miles of concrete wall within Hidalgo County.

In Cameron and Starr Counties, the original border fence design will remain. Regardless, Service biologists estimate that 60 to 75 percent of LRGV will be directly or indirectly impacted by the proposed fence designs. There are significant concerns for safety, logistical and maintenance issues for Refuge staff and fire fighters. Serious and likely irreparable damage will include: restricting the movement of species that rely on connectivity with Mexico for genetic exchange; blocking access to the Rio Grande, which is often the only source of water for wildlife; and bisecting Refuge lands resulting in the creation of 'islands' of habitat and compromising the viability of the wildlife corridor.

In addition, LRGV serves as an anchor for important habitat to the north and south. The Refuge extends to the southern portion of the Laguna Atascosa National Wildlife Refuge and ultimately the great Texas ranch country to the north. Directly to the south, the Refuge is working with Mexican counterparts to connect to ecologically valuable areas such as the Laguna Madre de Tamaulipas, and the Sierra de los Picachos in Nuevo Leon, Mexico. The border fence would create a physical barrier between these projects, possibly compromising genetic exchange of species.

One species of particular concern is the ocelot, a small cat whose range once extended from South Texas into Arkansas and Louisiana. Today, its population has been reduced to 80 to 100 cats, all of which reside in South Texas. Service biologists question the genetic viability of the ocelot and its ability to survive in a diminishing, fragmented habitat. The border fence could further genetically isolate the species by limiting its ability to migrate into Mexico.

The Waiver

In March 2005, the U.S. Congress was in the midst of crafting a supplemental authorization bill that provided funds for the wars in Iraq and Afghanistan as well as funding for tsunami relief efforts. Ultimately, when the funding bill passed it also contained an amendment known as the Real ID Act. The Real ID Act is widely known for its provisions regarding



Jody Mays (left), a wildlife biologist for Laguna Atascosa NWR, tags an ocelot.

a national identification card for all legal U.S. citizens. The Act also, however, included the following 57 words:

Notwithstanding any other provision of law, the Secretary of Homeland Security shall have the authority to waive all legal requirements such Secretary, in such Secretary's sole discretion, determines necessary to ensure expeditious construction of the barriers and roads under this section. Any such decision by the Secretary shall be effective upon being published in the Federal Register.

This section, according to proponents, was intended to address a 14-mile section of fence being constructed near San Diego, California. The Service had issued a non-jeopardy biological opinion for the segment on January 9, 2003. However, construction had been delayed because of concerns from state and local entities. The language in the Real ID Act was not specific to the San Diego segment and the authority granted by the waiver has been used by DHS now on five separate occasions; September 2006 in San Diego, California; January 2007 near the Barry M. Goldwater Range in Southern Arizona;

and October 2007 to complete border fence segments crossing the San Pedro River National Conservation Area in Southeast Arizona.

The most extensive and most recent waivers, issued April 1, 2008 are the only two that have direct implications for lands managed by the Service. However, among the over 30 total, some of the laws waived were the Endangered Species Act, National Environmental Policy Act, National Wildlife System Administration Act, Wilderness Act, Clean Water Act, and the Clean Air Act. The two waivers cover fence construction for over 470 miles in California, Arizona, New Mexico and Texas and another for the 22-mile levy segment in Hidalgo County, Texas.

In making the announcement for the April waiver, the Department of Homeland Security committed to providing numerous mitigation measures for impacts to DOI managed lands including a \$50 million fund for land acquisition and other measures to off-set impacts from fence construction. Despite invocation of the waiver, the Service and CBP continue to identify measures that will result in the most beneficial outcome for both agencies. >>

service spotlight

Border, continued

Looking Ahead

Will the fence work? Will it help curtail the impacts from illegal immigration or will the solution prove to be just as environmentally detrimental as the problem?

Secretary Michael Chertoff of the Department of Homeland Security recently told the *New York Times*, “I don’t believe the fence is a cure all. Nor do I believe it is a waste. Yes, you can get over it; yes, you can get under it. But it is a useful tool that makes it more difficult for people to cross. It is one of a number of tools we have, and you’ve got to use all the tools.”

One thing is certain, the Service will be facing these challenges for a long time. There seems to be no indication of a substantial decrease in the number of immigrants attempting to enter the U.S. illegally. Nor is there a decrease in the necessary border enforcement measures being deployed. By the end of this year DHS will have 18,319 agents—an increase of roughly 12,000 agents since 1996.

As of May 2, 2008 DHS had constructed 178 miles of pedestrian fence and 144.2 miles of vehicle barrier along the southern border.

The issue was best explained by Rick Schultz, DOI National Borderland Coordinator, in his testimony before the House Natural Resources Committee on April 28 of this year:

“In an ideal world and under differing circumstances, the need would not exist to construct border fences and related infrastructure to enhance our Nation’s security or reduce the influx of drug trafficking,” Schultz testified. “In reality, however, Congress has directed DHS to construct border security infrastructure.”

“A project of this scope cannot be accomplished without affecting both environmental and cultural resources,” Schulz continued. “The challenges for DOI and DHS are complex. On the negative side, we have some adverse environmental impacts. On the positive side, border infrastructure, including pedestrian and vehicle fences, is expected to increase our visitor and employee safety, reduce drug trafficking, reduce

Borderline. A timeline of actions associated with border security measures.

2001	2002	2003–2004	2005	2006
<p>April 2001 The Service permits placement of non-permanent water stations on Buenos Aires National Wildlife Refuge.</p> <p>May 2001 14 immigrants die of dehydration trying to cross the Arizona desert at Cabeza Prieta Refuge.</p>	<p>May 2002 U.S. Border Patrol places a temporary camp on Cabeza Prieta NWR. Due to the demonstrated success of the camp, Border Patrol makes the camp permanent in 2003.</p> <p>August 2002 Kris Eggle, a Park Ranger at Organ Pipe Cactus National Monument is shot and killed in the line of duty while pursuing members of a drug cartel hit squad who fled into the United States after committing a string of murders in Mexico.</p>	<p>2003–2004 Three solar powered emergency rescue beacons are placed on Cabeza Prieta NWR.</p> <p>June 2004 Manager of Cabeza Prieta Refuge is called to testify before Congress on the impacts of immigration and border enforcement activities on federal trust resources.</p> <p>2004 Organ Pipe Cactus National Monument starts construction of a vehicle barrier along the International Border. Construction is completed in 2006.</p>	<p>2005 A study is published indicating that 5–8 pounds of trash are deposited by each individual immigrant attempting to cross the Arizona desert.</p> <p>March 2005 Congress passes the Real ID Act as a rider to the funding Bill for the wars in Iraq and Afghanistan and tsunami relief. The Act granted DHS authority to waive any laws necessary to ensure expeditious construction of barriers and roads associated with border security.</p> <p>December 2005 A record number of immigrants (241) die crossing the Arizona desert in 2005. That same year DHS arrests 101,965 on the seven border refuges.</p>	<p>June 2006 Mitch Ellis, the manager of Buenos Aires Refuge, is called to testify before Congress on the impacts of immigration and border enforcement activities on federal trust resources.</p> <p>June 2006 Wildlife friendly vehicle barriers are installed on Buenos Aires Refuge.</p> <p>The Service and DHS begin installation of Emergency Rescue Beacons on Buenos Aires Refuge for people in desperate need of medical attention.</p> <p>September 2006 DHS issues first waiver authorized by Real ID Act to complete construction of 14 miles of fence in San Diego California.</p> <p>October 2006 Buenos Aires Refuge closes 3,500 acres to public access due to an increase in violence along the border. Refuge biologists are required to have a law enforcement officer accompany them to conduct field work in the area.</p> <p>The Secure Fence Act—directing DHS to construct at least two layers of reinforced fencing and additional physical barriers along 700 miles along the international border with Mexico by December 2008—is signed into law.</p>



the deposition of human trash, and in some cases lessen adverse environmental effects to wildlife habitats and related ecological communities.”

Obviously, the concerns associated with national immigration policy and necessary border enforcement extend well beyond the scope of the Fish and Wildlife Service. Only time will tell where the protection of our Nation’s wild plants, animals, and lands fit in. □

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Overlook at Roma Bluffs World Birding Center in South Texas. A planned combination border barrier/flood control levy will be located just beneath this overlook.

2007

March 2007

Vehicle barrier construction begins on Cabeza Prieta NWR.

October 2007

Service outlines an agreement with DHS to allow fence construction to continue on Buenos Aires Refuge in exchange for land to be added to the refuge. Exchange was outlined in part to prevent DHS issuing another waiver.



2008

January 2008

Luis Aguilar, a senior U.S. Border Patrol agent, killed in the line of duty at the BLM Imperial Sand Dunes Recreation Area in California.

March 2008

Service notifies DHS that it is unlikely that the proposed barrier in Hidalgo County, Texas will be found compatible with the purposes of the Lower Rio Grande Refuge and will therefore not be allowed.

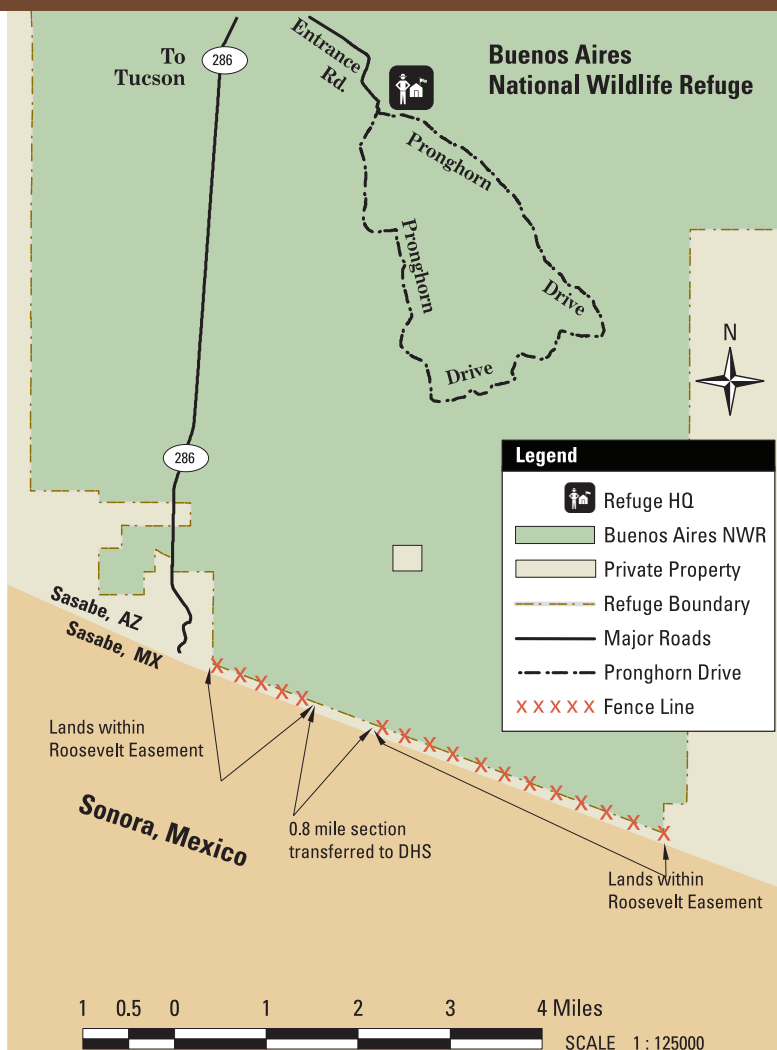
April 2008

DHS issues two waivers authorized by Real ID Act. One waiver covers more than 470 miles in California, Arizona, New Mexico and Texas. The other covers the 22-mile segment in Hidalgo County, Texas.

Service notifies DHS that proposed activities on Cabeza Prieta Refuge may result in the extinction of the endangered Sonoran Pronghorn.

May 2008

DHS requests to place another camp along El Camino del Diablo road through Cabeza Prieta NWR.



island paradise

Pearl Harbor National Wildlife Refuge provides a living classroom for local school children.

Story and photos by Pamela Gibson

On a hot, sunny morning in May 2008, a few dozen 7th graders from a University of Hawai'i charter school loaded into two yellow school buses and headed to the Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge. Their first stopping point was on the former Barbers Point Naval Base outside a Subway sandwich shop that opened early for the occasion.

The young people gathered around a fire hydrant in the parking lot, dabbed on sun screen, and listened as refuge volunteer Dr. Bruce Koebele—their guide, a native plant specialist, and former biology instructor—gave them a safety talk steeped in history and Hawaiian lore. “Be careful to step only on dirt or grass when you’re on the refuge,” Koebele told the kids, “because if you step on an endangered plant you could kill it forever.”

“Imagine a Nēnē (native Hawaiian goose) the size of a turkey that can’t fly, weighing maybe 20 or 30 pounds. That’s what used to live out where we’re going and, in fact, all around the island. Compare that to you guys who weigh 80 or 90 pounds, or to me at 160. So if I step on a plant, I essentially kill it. That plant doesn’t have any defenses.”

“So when you’re out there, I’m going to ask you to walk on dirt as much as possible. If you can’t, walk on areas that are grassy because the grasses out there are non-native.”

The children listened carefully, eager for their upcoming adventure. But not so eager that they wanted to brave the single, rather primitive composting toilet Koebele told them about. In fact, that piece of information sent all but a few of these urban kids running to the restaurant restrooms before taking off for Kalaeloa (“long point” in Hawaiian.)

“We’re going to a wild place, not to a museum or a garden, or someplace where signs tell you what this or that plant is,” Koebele said. “You have to watch your step. There might be a centipede or a scorpion underneath the rock you turn over when you’re digging a hole for our outplanting today.”

Koebele regularly takes school groups to Kalaeloa for the purposes of education and outplanting. In doing so, he not only reconnects children with nature but also helps conserve rare plant populations in the coastal environment of the ‘Ewa Plain of O’ahu. One of the advantages of having kids experience nature directly, rather than in, say, a garden or museum setting, is that it’s a wild and not a human-controlled endeavor.

Beside the ocean at Kalaeloa, the kids gathered around Koebele and listened as he pointed out such plants as the ‘Ewa Hinahina (*Achyranthes splendens* var: *rotundata*) that used to be found throughout the ‘Ewa (west) plain. “Hinahina means silvery or gray,” Koebele said. “Look at it, little white hairs protect it from sunlight and keep the leaves from being damaged.” The plant is listed as endangered because most of its habitat has been destroyed by humans, first when they planted sugar cane, then when they made houses and shopping malls. “Kalaeloa is one of the very few places where this plant can actually be seen,” Koebele said.

In 1997, when Barbers Point was a naval air base and Koebele was an instructor at Leeward Community College, >>



Above: The Kalaeloa field trip provided the seventh graders' with a stewardship and service learning project that would anchor their classroom experiences with the field.

Right: Island ilima papa.



“The children encounter wild things here, and I just think it’s incredibly important for kids to experience that.”

Refuge guide and volunteer Dr. Bruce Koebele

Island, continued from page 16.

Navy spokesman Dan Moriarty asked for the help of Koebele and several faculty members, and the help of their students. "An aggressive weed called *Pluchea* is growing all around the 'Ewa Hinahina." Moriarty said, "We're afraid it's going to cover it up and that'll be the end of it." Koebele and some sixty other volunteers from the college and the Navy pitched in and got rid of the *Pluchea*. They also found another plant, *Naio*, which looks somewhat like *Pluchea* but is native.

"Afterward, I thought that working with native plants would be a good experience for my students," Koebele said. "How many get to see endangered species, let alone help them survive? Once you get rid of the *Pluchea*, the native plants come back by themselves. It's exciting!"

In 1999, the Navy closed down the naval base. "It was a scary time for us," Koebele said, who worried about what would happen when this place beside the ocean opened up. "We were so afraid people would start coming out here with their motorcycles and SUVs, their 4-wheel drives, and tear it all up. Remember what I said about native plants?"

"They might die forever if you step on them," a boy said.

"Yes! And just imagine what happens when you run over them with an SUV."

Another thing conservationists worry about are people's campfires and cigarettes and the brush fires caused by them. The U.S. Fish and Wildlife Service took over the area because of the endangered 'Ewa Hinahina but they still faced the problem of what to do about all the visitors. The refuge manager at that time, Donna Stovall, met with the Department of Transportation (DOT), who was tasked with putting up the present fence around the airfield so that people could not drive on the runway. Stovall convinced the DOT to extend the fence past the airfield all the way along the coast to the canal on the other side.

"The fence didn't prevent people from coming out here and hiking along the shoreline," Koebele said. "What it prevented was them coming out in vehicles, and that's where the real destruction happens, when they come with their 6 and 12 and 24 packs of beer."

The children giggled.

Well, they start making a mess and destroying things, yeah?"

"Yeah," the kids echoed.

"Ever since then, we've been working with the U.S. Fish and Wildlife Service." This partnership greatly improved Koebele's situation because he was then able to bring his own vehicles and plants and water. "So we could plant natives and not just kill invasives. That's what we'll be doing today, helping with that."

A Special Place

The 'Ewa Hinahina is endemic to the Hawaiian Islands and only found in four places. "It's very rare," Koebele said. "But this is a very special place, not just because of this plant. The rocks are white and made of coral. What we're standing on is an ancient coral reef."

"Oh," said a boy. The children looked around at the white rocks.

The entire 'Ewa plains used to be underwater before the water receded. "If you look at these rocks, you can see the ancient coral and shells inside of them," Koebele said. "The plant community that we're looking at has adapted to that reef."

"Cool," said a girl.

"What we're doing today here is restoration work. We're trying to restore this place to the way it was say, 10,000 years ago, back when those big geese...what's their name...were running around."

"Nēnē!" yelled the children, in unison.

"Yes. Very good." Koebele stressed that restoration of native species rather than gardening was the goal. "The work, the planting you do today, that's all the attention your plant will get. No one will come out and water the plant, or pick bugs off, or spray them. No one will fertilize them. So you have to do everything you can do today because soon you'll walk away. We don't want to interfere with evolution. We don't want to make them into wimps that can't survive on their own. Here they've got to."

Botanists talk about three different factors when they speak of communities: height above the ocean, amount of rainfall, and the dominant plants in the community. "This community is a very unique one. We're going to classify it right now."

The kids' ears perked up.



Refuge volunteer Dr. Bruce Koebele (left) seasons his lecture with history and Hawaiian lore.



"First we talk about how high are we above sea level. We talk about four different levels, coastal, lowlands, montaine, up in the mountains, alpine, so high in the mountains that you might actually freeze in the nighttime. Can you classify this community?"

"Coastal," the seventh graders said in unison.

"Yes. We're right next to the ocean; we're barely above sea level. Next we talk about rainfall. Botanists put it into three categories, dry, mesic (medium) and wet. What do you think this is?"

"Dry," the children called out.



Island akulikuli.



“Coastal, dry shrub land!”

“That’s right. You tell any botanist, hey, I visited a coastal dry shrub land and helped out with the ‘Ewa Hinahina, he’ll know exactly what you’re talking about. You could even be more specific and call this a Naio shrubland, because the dominant native plant is the Naio. Now we’re going to plant some native herbs so that we can restore this... what?”

“Dry coastal shrub land!” the children yelled.

Natural Connections

After a short dissertation on the native herb Ākulikuli, Koebele held up a shrub. “It’s named ‘Ilima Papa. Everyone say that.”

“‘Ilima papa!” the kids said in chorus.

Each island has an island flower and ‘Ilima is the Hawaiian name for O’ahu’s. ‘Ilima come in many different varieties. One of them is ‘Ilima Kū, Kū being the name of the God of War. “Just as warriors stand at attention, so does the upright ‘Ilima Kū,” Koebele said.

The ‘Ilima Lei is the best flower to use for leis. Ancient Hawaiians usually went to the mountains to collect flowers for leis, but ‘Ilima Lei was one of the few native plants they actually planted outside of their houses so they’d have them available.

“Hawaiians use the flower as a medicine for babies too,” Koebele said. “According to Hawaiian folklore, when women were pregnant and used the flowers they had an easy birth.”

Koebele pointed to the Pa’u ‘O Hi’iaka vine. According to legend, long ago the volcano goddess Pele went surfing and took her baby sister Hi’iaka with her. She left Hi’iaka asleep on the beach while she went to surf. Enjoying the surf, she forgot about her baby sister lying there in the hot sun. Seeing this, the gods took pity on the poor child. On remembering her little sister, Pele quickly returned to the beach to find that the gods had covered her in the vines of this plant to protect her from the burning rays. That’s why the plant is called Pa’u ‘O Hi’iaka (the skirt of Hi’iaka.)

Because the coralline ground is so hard, Koebele pre-dug holes to make it easier for the kids to outplant. “Plants have three parts, roots, stems, leaves,” he explained. “But we’re planting plants with only two of them. Got leaves, got stems. You see? The roots are missing. Roots will grow from the nodes.” The children were instructed

to put at least two nodes under ground, but the more the better, to give the plant more chances to grow roots.

After studying a handout on how to outplant their native Hawaiian plant cutting, the kids donned gloves, squatted down, and dug in with gusto. They scooped out soil and put it to the side, added gallons of water, and kneaded the dirt and water mass like bread dough.

The next step was naming their herb of choice and sticking it into a container of rooting hormone, counting to seven, then pulling it out and placing it in the finger hole they’d made in the dirt dough. In order to prevent moisture from evaporating away, the children covered each plant with a large cup and a plate and held it down with rocks.

“We’ll leave it for about three weeks,” Koebele said. “Then lift it off and see if the plants are dry.”

One boy uncovered a scorpion when digging a hole with two other boys. “If it stings me, will I die?” he asked.

“Not unless you’re extremely allergic to it, and even then it’s unlikely,” said Miki Tomita, the boy’s teacher. “Otherwise it’s about as bad as a bee sting.”

Tomita explained that the Kalaeloa field trip was a service learning component to a unit they were covering on both land and water plant growth. “Students were asked to compare the structure and function of water and land plants,” Tomita said. “Then we talked about native and invasive species, places where we can help to restore native species, and why that might be important.”

The Kalaeloa field trip was a way to end these seventh graders’ school year with a stewardship and service learning project that would anchor their classroom experiences with the field. “Because, for most of them, that’s a really important component that’s missing in the classroom,” Tomita said.

“The children encounter wild things, and I just think it’s incredibly important for kids to experience that,” Koebele said.

Connecting kids with nature. That’s what it’s all about. □

Pamela Gibson is an Administrative Support Assistant at Oahu NWR and a freelance writer.

“Yeah, we get maybe a foot of rain a year out here. Now we have coastal, dry.” The last category has to do with the predominant types of plants. “Look around and you’ll see there are different types of forms. Herbs are little tiny plants that don’t have any woody parts, like tomatoes.” There are also grass lands, shrub lands, and forests. “So what are most of the plants around me, the dominant thing you see around?”

“Shrubs!” The kids were having fun with this.

“Yeah, we have the Naio shrub, a native shrub, and the alien shrub, the Plucheia. So let’s put them all three together, what do we have?”

Little brown bats with white-nose syndrome.



Mysterious **Threat**

What is killing bats in the Northeast?

By Diana Weaver



Tens of thousands of bats have died in the Northeast during the past two winters, and the reason remains a mystery despite the efforts of dozens of state, federal and non-government scientists who are desperately searching for the cause and hoping for a solution.

In January 2007, biologists with the New York Department of Environmental Conservation found bats with a white fungus on their noses in a cave near Albany. Alarming, bats were flying outside the hibernaculum during the day despite the winter cold and lack of insects to eat. Shortly thereafter, bats in three more caves were found in poor physical condition, many with the white fungus. They were uncharacteristically hibernating in cold areas near cave entrances. And they were dying. They were dying by the hundreds.

By the end of spring, thousands of bats were dead. In one cave, half of the survivors had the white fungus. In a cave typically harboring 700 endangered Indiana bats, Al Hicks, New York State endangered species biologist, found no Indiana bats for the first time since they were discovered there the 1930s. Hicks is certain the bats are dead from what he dubbed white-nose syndrome (WNS).

This winter, hibernating bats in New York again showed signs of the fungus and abnormal behavior; many were emaciated and dehydrated, and it was clear something was seriously wrong.

“What we’ve seen so far is unprecedented,” Hicks said. “Most bat researchers would agree that this is the gravest threat to bats they have ever seen.”

WNS showed up in southwestern Vermont and even more hibernacula in New York. U.S. Fish and Wildlife Service biologists and their state counterparts launched an all-out effort to identify hibernacula with WNS, and to engage laboratories and researchers in the quest for an answer to this problem.

Biologists found WNS in western Massachusetts. State biologists — sometimes accompanied by federal biologists — surveyed caves and mines from New Hampshire to Virginia, Kentucky and Indiana. In late spring, biologists confirmed WNS in northwestern Connecticut, bringing the total to 26 affected hibernacula in four states. Another three sites in Pennsylvania are deemed questionable.

In just two years some affected New York caves have shown up to 97 percent decline in the number of bats, with no end in sight.

New York is the winter home to some 52,000 Indiana bats, 10 percent of the entire population. Half of those bats hibernate in a cluster of three caves and mines, each of which now has WNS. Little brown bats, the most common hibernating bats in New York, have sustained the largest number of deaths. Other affected species include Eastern pipistrelle, northern long-eared bats and the uncommon small-footed myotis.

“What we’ve seen so far is unprecedented. Most bat researchers would agree that this is the gravest threat to bats they have ever seen.”

Al Hicks, New York State endangered species biologist

Because large numbers of bats congregate in caves and mines to hibernate for the winter and may migrate up to hundreds of miles to their summer habitat, biologists are concerned that the problem could spread much farther than the four states with confirmed WNS. But they do not know if affected bats are transmitting WNS to other bats.

Two Service endangered species biologists, Robyn Niver at the New York Field Office in Cortland, New York, and Susi von Oettingen at the New England Field Office in Concord, New Hampshire, are working closely with state biologists on WNS. Von Oettingen has made numerous trips to examine caves and mines and conduct spring emergence surveys, occasionally taking news media to view dramatic evidence of the mysterious affliction. Niver drafted decontamination protocols for cavers and biologists visiting potentially affected caves and mines. She also coordinates regular conference calls between state and federal biologists to exchange current information and plan future activities.

In March, the Northeast Region posted a video on the region’s Web site of von

Oettingen at a hibernaculum in Chester, Mass., explaining the WNS challenge. Within days, the video was on YouTube, where it has been viewed more than 3,300 times, bringing substantial attention to the problem. Reporters from Canada and Europe have covered the story, and news stories and blog postings have surfaced across the country and beyond.

Public interest has been high, with calls and e-mails reporting bats flying during the day or found dead and dying, often in locations where biologists did not realize hibernacula existed. Reports continue of dead, dying or abnormally acting bats that have reached their summer habitat in Massachusetts, Vermont and New Hampshire.

Cavers, important partners in the search for WNS answers, are reporting caves with affected bats and leading biologists to sites to learn if WNS is present. As part of an attempt to determine how WNS spreads, cavers have volunteered data on their cave visits.

WNS work continues to be a cooperative, field-based effort. The biggest problems facing both federal and state agencies seem to be lack of resources — people, time and money for field work, supplies, equipment and laboratory tests.


The most frustrating aspect of this situation is the lack of a clear answer to the question, “What is causing the bat deaths?” Biologists do not know if the fungus causes the deaths or if it is merely symptomatic of the problem. To add confusion, not all affected bats have visible fungus. Parallels have been drawn to bee colony collapse. A host of scientists is searching for answers. More than a dozen laboratories across the country are examining the fungus, bat carcasses, and tissue and blood samples.

What can we do to save the bats from WNS? That question will have to wait until we have more information.

At a June meeting in Albany, New York, nearly 100 scientists, researchers and wildlife managers gathered to exchange information about WNS and discuss hypotheses, data needs and possible future actions in the search to find what is killing our bats.

For more information, visit the Northeast Region’s WNS Web site <www.fws.gov/northeast/white_nose.html>. □

*Diana Weaver, External Affairs,
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Sanctuary for the Houston Toad

Through the Service's Safe Harbor Program, Texas rancher and minister Bob Long is helping to conserve the endangered amphibian.

By Ben Ikenson

Bob Long may not be ready to trade in his extended bed diesel pickup for a Japanese hybrid, but the 64-year-old Texas rancher and minister can rightfully add “environmentalist” to his curriculum vitae.

“It’s part of my personality and my faith to take care of the land,” says Long. “Adam and Eve were put in the Garden of Eden to enjoy and steward the land, plants and animals. God provided for them.”

Long is a non-denominational Christian minister; he serves as president of World Ministry Fellowship, which accredits and licenses ministers; and he runs a modest cattle-and-calf operation on 500 acres in Bastrop, Texas. His property here happens to contain some of the best known habitat for the endangered Houston toad.

In 2002, Long became the first private landowner in Texas to take part in the Fish and Wildlife Service’s Safe Harbor Program. The program features legal assurances that land management restrictions will not be imposed on private landowners should those landowners partake in conservation measures designed to help an endangered species. In this case, the program, in essence, creates a safe harbor for both Bob Long and the elusive toad.

The Houston toad was discovered in the late 1940s, though for eons the secretive little critter has been laying low in wetlands and woods, making its presence known less by appearance than by a high-pitched trill mating call. The toad’s coloration and rough skin provide excellent camouflage from natural predators such as turtles, snakes, owls, large spiders, and even frogs. Its evolutionary discretion, however, has been no match for burgeoning development. Paved road replaced wetlands; pastures replaced woodlands. The Houston toad was listed as an endangered species in 1970.

“Although the status of the Houston toad has undergone significant declines over the past 60 years, we believe we can prevent its extinction,” says Fish and Wildlife Service recovery biologist Paige Navjar. “We are working toward its recovery through effective planning and active landowner participation.”

Bob Long remembers first hearing about the government’s recovery efforts for the Houston toad in the late 1990s. “Initially, when the Fish and Wildlife Service came

down here to Bastrop saying the toad was here and that we had to do something about it, we were concerned. It kind of became this contentious federal-landowner debate that was not very friendly, at first.”

After a committee was formed and people started meeting one another face to face, Long says, “tensions eased. The feds realized they’d have to really work with landowners. Texas has more than 95 percent privately-owned land, as opposed to, say, Arizona, which has a lot more federal land. So there’s a whole different mentality here, and the Fish and Wildlife Service has to have different mentalities for different locations. Texans like their guns and their land, and if you threaten to take their land, they’re quick to show you their guns.”

Helping to ease the tension was the Environmental Defense Fund, which plays a crucial role in crafting and administering Safe Harbor agreements. “Initially, we served as a kind of liaison between landowners and the feds,” says senior scientist for the Environmental Defense Fund David Wolfe. “We’d been doing Safe Harbor work with landowners elsewhere in Texas, for the black-capped vireo and golden warbler, with great success. So, we met Bob at a meeting and he learned about our incentive-based tools and became interested in knowing how they could help landowners in ‘toad’ country.”

Keeping an open mind, Long saw potential in the program for both his land and for the toad, and decided to take the first step. Per the agreement, for about five months out of the year for the past six years now, Long has been keeping his cattle fenced away from the wetlands that are so vital to the toad. The toads and their toadlings, says Long, typically come out from burrowing in December and remain above ground until late spring.

Results followed. Wolfe remembers that, “Just three months after a fence was put in, the largest chorus of toads on record was heard from that pond.”

Long has also cut down the size of his herd and continues to rotate grazing patterns. With a lot of help from the Environmental Defense Fund, he has overseen a series of prescribed burns and he has been active in brush removal projects. He has also agreed to plant only native grasses should the need to replant overgrazed pastures arise. Most recently, Long helped build a ditch to carry overflow from a creek directly to the toad’s favorite wetland, making good use of the water that often rises above the creek banks.

Of course, Mother Nature certainly plays a role too, and, unfortunately, drought conditions for the past few years have inhibited breeding success.

But, for his part, Long is taking all of the work in stride, hardly griping about the concessions he’s made. To him, they are but minor ecological investments in the land — and in his grandchildren’s future. “I love the land. My children love the land. My grandchildren love the land,” he says. “Improving the habitat for the toad improves habitat for duck and deer. It improves the land. The toad doesn’t hurt the land and it doesn’t hurt me.”

As important as the work on his property, Long serves as a powerful symbol for the potential of private landowners to affect successful conservation, a symbol not lost on the Environmental Defense Fund. “Bob was willing to serve as a kind of model for the program,” says Wolfe.

The minister’s public speaking skills didn’t hurt either. The Environmental Defense Fund sent Long to the North Carolina, to share his experiences with a national audience at a 10-year anniversary ceremony in honor of the first Safe Harbor agreement that has benefited the red-cockaded woodpecker there. Also, the group sent Long to Washington, DC, in 2004 to speak on the merits of the incentive-based conservation program.

Closer to home, Long has been the springboard that launched a good deal of interest from other local landowners. “In going through the process with Bob, we now have quite a lot of interest from landowners,” says Wolfe. “Two other landowners have signed up for their own Safe Harbor agreements. And there may be enough interest for us to create a ‘programmatically’ Safe Harbor agreement.”

By creating a broadscale plan, the Environmental Defense Fund would help consolidate the individual plans into a single agreement and increase its role in administering on-the-ground efforts, relieving much needed resources for the Fish and Wildlife Service.

While Long has been essential in protecting an important and growing toad population on his land, work has continued away from his property. In recent years, Texas State University has conducted research that has produced valuable information on habitat use, distribution and density of adult toads and juveniles, larval survivorship rates, the effects of predation, and population genetics.

“This information will be instrumental to the Service as we begin developing an updated recovery strategy for this species,” says Navjar. The updated recovery strategy will likely include some new specific land stewardship practices, captive breeding and reintroduction of the Houston toad to what remains of its historic range.

One promising component of the revised strategy is what Navjar calls “headstarting,” which borrows from methods used in sea turtle recovery efforts. “Headstarting involves the collecting of eggs as they are hatched. Keeping them in a controlled environment will keep them safe from predators, disease and other possible dangers. Thus, these toads are given a bit of a ‘head start’ in life.”

“Improving the habitat for the toad improves habitat for duck and deer. It improves the land. The toad doesn’t hurt the land and it doesn’t hurt me.” **Texas rancher Bob Long**

In addition, in March 2008 the Service began a Houston Toad Recovery Initiative to involve multiple state and federal agencies, academic researchers, non-governmental organizations, landowners, and other stakeholders in recovery efforts. The initiative is designed to increase information sharing, promote landowner involvement, and allow for discussions of collaborative opportunities for the Houston toad.

The Environmental Defense Fund has been working with others, like the Pines and Prairies Land Trust, as Wolfe puts it, “to leverage our efforts as much as we can.” Latest efforts to match the growing landowner interest includes trying to get the Natural Resources Conservation Service involved in creating incentive programs with the toad in mind.

For Navjar, the job and the hand-in-hand spirit she sees through it, keep her optimistic. “The best thing about working on this species is the relationships I have with our partners,” she says. “From the researchers to the landowners, there are so many dedicated people working hard to recover this species that just being around them and being a witness to their hard work keeps me motivated. I am optimistic about the toad’s recovery. It will be a challenge and will probably take a long time to get there, but if I didn’t believe we could achieve it, there wouldn’t be a reason for all of our partners to be working this hard.”

As all of the parties involved in the Houston toad saga have learned, change requires hard work, and it takes time. And Bob Long especially knows it starts at home. □

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COURTESY OF THE LONG FAMILY



Flickr / Rick LeDuc

Majestic Journey

Sandhill crane migration is a natural spectacle that brings bird lovers from across the globe to central Nebraska.

By Ashley Spratt

They approach with the intimidating force of military aircraft. As the sun retreats below the western horizon, the symphony of clattering voices grows louder. This night, they have kept their audience waiting, dancing above the cornfields in aerial displays of transforming patterns and shapes before settling in the river below.

Carl Wolfe, a volunteer at the Audubon Society's Rowe Sanctuary leads a silent crowd of bird watchers back to the main building after another dusk viewing of sandhill cranes in one of the straw bale blinds along the Platte River in central Nebraska.

More than 10,000 avid birders, conservationists, tourists, and nature enthusiasts from around the world visit the small town of Kearney, Nebraska to witness what locals are proud to call one of the Seven Wonders of the World. But according to Wolfe, "The cranes are our most important visitors."

For three to six weeks in early spring, the Platte River hosts more than 500,000 sandhill cranes on their annual journey north. They fly up to 500 miles per day from the southwest United States and Mexico to refuel before charging on to their breeding grounds in Canada, Alaska, and Siberia. The Platte River and its surrounding croplands provide a safe-haven for the birds to rest, gain energy, and perform their mating ritual dances, all in front of an audience of thousands.

"They're not the prettiest things God ever made, that's for sure," says Leta Johnson

who works at Kearney's Visitor Center, "But they're a kill, I love 'em to death." During last year's crane season, Kearney welcomed visitors from across the country and world.

"I've heard it time and time again, people spend more money on birding, than on professional sports," says Roger Jasnoch, Director of Kearney Visitors Bureau.

Bird Watchers Digest Editor Bill Thompson recalls how his first sighting of a snowy owl as a young child sealed his fate as a life-long birder.

"I went to grab my parent's bird book to see what it was, and discovered all these other birds I didn't even know existed," Thompson says. His fascination and appreciation for birding grew.

"I'd skip school Fridays to go out bird watching with my mother," he says. Now Thompson makes his livelihood scouring for birds in every part of the world. After a trip to South Africa to see the lilac-breasted roller among other exotic species, he and his wife voyaged to Rowe Sanctuary to see the more than 60,000 sandhill cranes along the Platte this March.

Sandhills are omnivores, meaning they eat practically anything they can find. Eighty percent of their diet during their stay on the Platte is made up of corn, primarily because it is readily available in the surrounding croplands. But they need more than just high fructose carbohydrates to survive the journey north. During high water periods in the spring the wet meadows surrounding the river are extremely rich in invertebrates, providing food sources high in protein. Crayfish and snails also provide the cranes with additional nutrients like calcium and phosphorus.

"They're not very good fishermen, but they try," says Kent Scaggs, habitat manager of Rowe Sanctuary.

West of the 100th Meridian, water is precious and the battle for ownership of water rights is ongoing. This invisible line divides central Nebraska, and the narrowing of the Platte River over time provides evidence of sparse water resources in the west.

Historically, the Platte River in central Nebraska was surrounded by tall grass prairie that was trampled by buffalo and burned by natural fires, which helped to create wet meadow areas adjacent to the river—ideal habitat for a range of migratory and native species. The wet meadows were controlled by the high flows of the river during the spring season. But over time the river channel narrowed due to damming of the river, and woody



For three to six weeks in early spring, the Platte River hosts more than 500,000 sandhill cranes on their annual journey north.

vegetation developed along the banks and sandbars. Today, during wet climatic periods, the wet meadows are maintained by sub-irrigation of shallow ground water.

“If you control water, you control a lot of issues,” says Service biologist Rick Hansen. Growing up in Illinois, Hansen never thought water was something to fight over. But in the west, where water flows from rivers like the Colorado are decreasing and where arid conditions make irrigation a necessity, it is a vital commodity.

In 2007, the Platte River Recovery Implementation Program employed an agreement to manage limited water resources between the states of Colorado, Wyoming and Nebraska; the Department of the Interior; water users; and conservation groups. The program aims to manage land and water resources by retiming river flows during certain times of the year to help restore a semblance of

the natural hydrograph and support the Platte River ecosystem. The program also includes clearing vegetation from many of the river’s islands and sandbars, and returning sand accumulated in the islands to the active channel to offset ongoing erosion and narrowing of the river.

“It’s like cleaning out a blockage in your artery,” Wolfe says.

The program also monitors the use of the Platte River by endangered species, like the sandhill crane’s close relative, the whooping crane.

Standing nearly 5 feet tall with a wingspan of 7.5 feet, whooping cranes are the tallest birds in North America. But despite their large size, they are rarely sighted.

“Currently, there are just over 500 whoopers in existence, and about a fourth of those are in captivity,” says Martha Tacha, a Service biologist in Grand Island,

Nebraska. At one time these birds ranged throughout mid-western North America, but declined due to hunting and detrimental habitat loss. By 1941, the number of whooping cranes had declined to only 15 birds, but the wild population that migrates through Nebraska slowly increased to 266 birds in 2007.

Tacha is the coordinator for the Cooperative Whooping Crane Tracking Project, which collects information on sightings of migrating whooping cranes from a network of federal and state agencies throughout the central flyway. Whooper Watch, a system of volunteers, also helps document sightings of whooping cranes in Nebraska. The Platte River Recovery Implementation Program will begin conducting aerial surveys of the Whooping cranes along the Platte River in mid-March.

The waterfowl spring migration and Platte River recovery efforts are among the Service’s top wildlife resource priorities in central Nebraska. Another major challenge for the agency is reducing migratory bird mortality caused by collision with power lines.

“Reducing bird mortality from powerline collisions is a big challenge,” Tacha says. According to the Service, transmission line collisions account for up to 170 million bird deaths each year. In the summer of 2007 reflective, glow-in-the-dark devices called “fireflies” were installed along transmission lines near and crossing the Platte River in central Nebraska to alert cranes and other birds flying near the lines. According to Tacha, the fireflies will likely reduce avian collisions. If the fireflies prove successful in reducing bird mortality, additional fireflies will likely be installed in the central flyway.

The sandhill crane migration is a spectacle of nature that brings together the local community of Kearney and attracts bird lovers from across the globe. During the months of March and April, the sights and sounds of the Platte River make it one of the most awe-inspiring landscapes on earth. The cranes themselves provide more than half a million reasons to preserve this unique part of central Nebraska. Each evening for a few weeks this spring, the cranes will perform on their Platte River stage; each flock’s flight-pattern mimicking the braided waterways of the river below, as their audience watches in admiration. □

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Copperbelly Conservation

A threatened snake species' future may depend on our ability to view recovery through a strategic lens.

By Craig A. Czarnecki

I read Don Hultman's piece on Strategic Habitat Conservation (SHC) in the Winter issue of *Fish & Wildlife News*, and was struck by his description of how conservation actions fall into one of four quadrants of choice: the right things in the right places, the right things in the wrong places, the wrong things in the right places, and the wrong things in the wrong places.

Don then took up SHC's potential to help clarify our conservation choices and ended with: "SHC is really common sense, but it is systematic common sense, and an attempt to make common sense the common conservation practice." Reflecting on Don's "four quadrants of choice," I realized he had provided an intuitive measuring stick for evaluating conservation actions. How would we stack up here in the Great Lakes? Recent efforts with the copperbelly water snake (*Nerodia erythrogaster neglecta*) provided a good case study.

Here's a threatened species living in an area where Michigan, Indiana, and Ohio meet. Growing 3 to 5 feet in length and appearing with a dark back and a bright orange-red belly, this non-venomous snake inhabits a patchwork of warm, shallow water habitats and upland ridges and woods. With a decreasing number of occurrences in the tri-state area, the copperbelly faces numerous threats and an increasingly fragmented landscape.

In the past, we took broad and untargeted actions for the copperbelly by simply addressing opportunities. Multiple offices and their biologists spoke the same language but often not in a coordinated way. And how did years of on-the-ground work benefit the copperbelly? I don't think we really knew.

So, what of a snake species? If the ideas behind SHC hold true, could we focus our efforts in terms of explicit and measurable biological outcomes and take a science-driven, adaptive approach? Or, more simply stated, could we improve our copperbelly work and end with the "right things in the right places?"

A workshop sponsored by the Midwest Region and NCTC provided a good pause point and resulted in critical first steps to answering those questions. Here, we brought copperbelly to the table as a real-world conservation challenge.

Specifically, the team developed three models/tools:

- A stochastic demographic population model to test population objectives (i.e., will 1,000 individuals provide a probability of extinction less than 10 percent for 100 years?)
- A spatially explicit habitat model to help predict occurrence and prioritize restoration activities to attain population objectives; and



- A decision support matrix for the Partners for Fish and Wildlife Program, informed by modeling efforts, but also incorporating practical parameters.

To tackle challenges associated with the copperbelly, the biologists identified assumptions, asked questions, and worked out initial tools to better clarify what we needed to do and how. Once the work ensued, SHC seemed less like a flash-in-the-pan initiative and more like common-sense conservation. Perhaps that's a measure of our progress with the SHC framework—the more we undertake outcome-based conservation, the less we need to identify the practice as somehow different from what we do every day.



Once the work ensued, SHC seemed less like a flash-in-the-pan initiative and more like common-sense conservation.

In any case, we're off to the races. The workshop products are rough and living and biologists are considering where to say "yes" to projects and where we might say "no." And we have more to offer our partners, perhaps, as we join with state colleagues and private interests to work on shared conservation goals.

The group is also considering implications of these products when applied to the unique circumstances found in the tri-state area. As Don added in his article: "...I know that on-the-ground conservation is never quite as linear or circular as the diagrams depict." He's right. All of us face the crossroads where best intentions meet limitations.

Yet, SHC appeals to our natural inclinations—we want our daily work to make a difference. And the iterative thinking now employed with our copperbelly work has us pushing up our sleeves.

Many in our field have taken H.L. Mencken's quote of "There is always an easy solution to every human problem—neat, plausible, and wrong," to heart as we tackle challenges, from small to great. SHC does not provide the easy solution to copperbelly recovery, but it certainly may bring us closer to the "right things in the right places." And that's a good start.

Stay tuned. □

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This is the first in an ongoing series of stories and essays highlighting Service landscape conservation efforts. Submissions can be e-mailed to <david_eisenhauer@fws.gov> or sent to David Eisenhauer, editor, Fish & Wildlife News, 4401 N. Fairfax Dr., MS 330, Arlington, VA 22203. For additional case studies and information on landscape conservation, visit <www.fws.gov/science/StrategicHabitatConservation.html>.



Coming Home

Learning new things in old pools.

By Craig Springer

Blue lines on a topographical map look like they were pulled from the pages of a medical book. The blue-ink blood of small creeks feed bigger ones, growing fatter as they glide toward the map margins. It's the vascular system they depict, the waters moving toward the heart. This detritic pattern mirrors the veins on the sycamores that lean over Indian Creek on the Ohio-Indiana state line.

The last time I fished the headwaters of Indian Creek, I remember it for the heat heavy on my shoulders and the incessant shrill of cicadas. It was 1988, and we'd gone without rain for a long spell. The trees looked worn for the want of water. They looked like I felt then following the untimely death of my brother, and I was set to seek psychological distance elsewhere. Despite the years and miles, my homing instincts always pull me toward this place. Two decades slipped downstream since I last waded these waters. I returned for a brief time with my young boy in May a year ago.

Creek water unfettered is nature in its most beautiful form. The vagaries of flow are infinite. The sinuous movements, the shapes—fluid like good handwriting. Moving water has that habit. Indian Creek burbles, battering over limestone slabs flecked with fossils where crawdads hide by day, and greenside darters tarry pressed by flow. The water pours out into the throat of a greenish-purple pool; there, the flow is still and silent with places secreted under impenetrable shadows cast by boxelders.

Carson and I tarry here, his interest drawn to the sand on a gravel bar, and mine deeper, pensive and introspective, with rare platinum clarity at once pondering the past and the future removed from the place where I felt most alive. I had been in this reach of stream a

hundred times before with friends and family, but mostly by myself. I'd seen it in every season, walking through tall corn or deep snow, almost always in pursuit of fish or fowl, with a rod or shotgun, a seine or binoculars. I played out in my mind some events that have never left me.

Opposite this gravel bar, a half-dozen sycamores that must have germinated on the same day stand side by side with their mass of roots dipping into the creek. Their buttresses look ghoulish; the dark voids between the thick roots look like twisted mouths agape, and tree trunks sprout out of their heads. In the channel between us was the largest of deadfalls. An ancient sycamore had lodged there, and a deep hole scoured around and beneath it. In the dark space behind my eyelids I watch the heavy bronze flash and the swirl on the smooth water; I feel in my forearm the tug and lunge of a smallmouth bass pulled out of its lair.

That deadfall is now a ghost, nowhere to be found. The deep scour-pool is filled with a flat-flowing strait of pebbles populated with minnows and a raft of redhorse seen only for their tilt as they peruse the bottom, leaving a trail of smoke wafting where their fleshy lips turned up stones.

Overhead, a belted kingfisher bounds and swoops passing over my son and me. It skirts the waters with wing beats pushing air, coming through this riparian cathedral bounded on either side with towering trees. The kingfisher lifts itself upward at the last to light on a snag where it hunts for stoneroller minnows. He gives a scolding chatter coming to the perch, as if my son and I don't belong.

My boy and I spent a few days there, a stone's throw from the Indiana state line. We fished, hunted fossils and caught crawdads, and scouted out Indian mounds



and a bear pit earthwork. I fancied finding the old Indian trail that the great Tecumseh may have traversed when he tried to pull together a confederacy. I visioned a surveying crew cutting a section line in the frontier wilderness in 1798 mere feet from the front stoop of the farmhouse where we stayed. I'd give good coin to read what the surveyors wrote to see how they knew the place.

The essence of any place can't be entirely known. Always there will be something new to discover about anywhere, and discovery only comes with nearness. You might feel an immediate affinity with a place, but you really only come to know a place when you see its pull through the seasons. This is an enigma to me. Understanding is a requisite of love, yet understanding can never be entirely achieved.

In those precious few days with Carson at Indian Creek, I shucked the husk of ordinary existence and could think and feel. Those hours slipped away as I immersed myself in the narrative of my natal land, and I fell more in love with my boy. I reached back to my boyhood and learned new things in old pools. Two decades afford a rare angle of vision where mediations marry the meanderings of a little blue line. A powerful past owns providence, and those cursive blue-ink lines draw me toward the heart. □

Craig Springer is a fisheries biologist in Albuquerque, New Mexico

pacific 

Springtime Celebration

Powdery snow piles up around clusters of cattails. Hoarfrost clings to tall thin reeds. A shroud of dense fog obscures surrounding hillsides. Open waters continue to shrink as ice creeps ever forward from marshy edges, limiting the freedom of dabbling waterfowl. Morning breaks on the refuge, and the crisp February air fills with a blend of calls from thousands of snow, white-fronted and Canada geese. As the sun strengthens, fog begins to lift. An early morning ritual known locally as the “fly-out” is underway. From nearby night roosts of old-growth pine and fir forests, groups of bald eagles soar overhead, as they make their journey toward the feeding grounds of Lower Klamath National Wildlife Refuge. Thousands of waterfowl concentrated on limited open waters within areas of frozen wetlands provide ample dining opportunities for the more than 500 eagles that gather in the Klamath Basin each winter.

The arrival of bald eagles brings the “Winter Wings” Festival to Klamath Falls, Oregon each President’s Day weekend, a winter celebration of their gathering. As winter yields to spring, the refuge makes preparations for a springtime celebration of the arrival of migratory birds and waterfowl with its annual Migratory Bird Day Festival in May that includes birding tours of Lower Klamath refuge.

This year, a special, year-long celebration will occur as Lower Klamath Refuge, created in 1908 as the nation’s first wildlife refuge specifically for protection of waterfowl, celebrates its centennial birthday. At the turn of the last century, the refuge, located along the border of Oregon and California, was recognized as a vitally important area of wetlands and marshes that provided necessary habitat for thousands of migratory waterfowl following the Pacific Flyway. In the midst of an era of draining lakes and marshes for conversion into farmland, and concerned over the loss of wetlands, on August 8, 1908, President Theodore Roosevelt established Lower Klamath as the first refuge set aside as a “preserve and breeding ground” for waterfowl and other native birds.

Now, 100 years later, Lower Klamath Refuge is 46,900 acres of shallow freshwater marshes, open water, grassy uplands and croplands that receives an annual visitation of 20,000 people. A marked ten mile auto tour route allows visitors year round access to ample wildlife viewing opportunities during daylight hours. Several photo blinds, strategically placed for early morning photography, are available by reservation, and require the purchase of an annual pass. A two mile interpretive trail through seasonal and permanent marshlands and a half-mile trail through high desert hillside leading to



Tundra swans in flight.

DAVE MENKE / USFWS

a refuge overlook are available at the refuge visitor center, located fifteen miles southeast of Lower Klamath Refuge.

The public is invited to visit and discover the wide array of diversity the refuge has to offer. Each month throughout 2008 will offer different activities of interest to birders and refuge enthusiasts in celebration of the Lower Klamath National Wildlife Refuge Centennial. The March tour led by refuge staff highlighted spring migration in progress, a time when thousands of waterfowl fill the skies on the refuge. In May, Tule Lake Refuge held its annual migratory Bird Festival at the refuge visitor center. In August, in honor of the actual refuge Centennial date, an employee and friends celebration is planned.

Past employees, friends and supporters of the Klamath Basin Refuges and the general public are invited to an old-fashioned picnic and ice cream social. Those attending will receive a stamped envelope commemorating the centennial. Former employees and volunteers can contact outdoor recreation planner Dave Menke at 530/667 2231 or by e-mail at <dave_menke@fws.gov> to receive an invitation and additional information.

For a full list of Lower Klamath Refuge Centennial events and current updates, visit <www.fws.gov/klamathbasinrefuges>. □

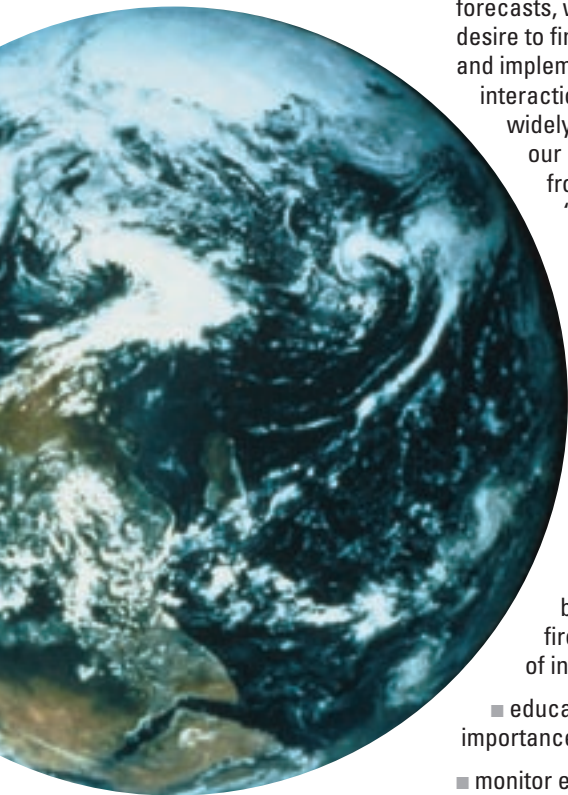
Michele Nuss, Interpretive Park Ranger, Klamath Basin NWR Complex

pacific



Taking Our Temperature

How do Service employees view the threat of climate change and the agency's response so far? A series of climate change workshops held in February 2008 across the Pacific Region gave us an opportunity to find out. Participants in the workshops included staff from nearly all Service programs, ranging from project leaders to administrative assistants.



NASA

A total of 227 completed surveys were collected from staff in Honolulu, Hawaii; Lacey, Washington; Boise, Idaho; Spokane, Washington; and Portland, Oregon. Most respondents felt that climate change threatened ecosystems and that the Service needed to change its goals, methods, or both to deal with its challenges. The amount of information people had about climate change strongly affected their attitudes. Many felt a pressing need for innovative leadership and more staff education. Despite the dire forecasts, we found a strong desire to find effective actions and implement them now. Our interaction with the public was widely considered crucial in our success. As Jeri Wood from Boise, Idaho said, "We can message all we want to the public, but if we don't walk the talk, it's rather pointless."

From highest to lowest priority, people felt the Service should:

- increase the resilience of existing natural communities by habitat restoration, fire management, control of invasive species, etc.;
- educate the public on the importance of conservation;
- monitor ecosystems, get better data, model future changes;
- establish or maintain corridors so populations can move across the landscape;
- focus on rare species (increase the number of populations, help them move, and/or set up seed banks or captive propagation); and

- acquire and manage new areas, stop managing some existing habitats.

The survey shows that as Service employees become better informed on climate change, expectations for leadership, innovation and effective action increase. A continuing investment in staff education is likely to catalyze action at all levels to meet those expectations and find effective responses to climate change.

A primary topic of concern for staff was outreach with compelling messages. Ted Koch of Boise suggested that tapping into well known species could serve as a climate change indicator to help personalize the message. He proposed that the bull trout could be our 'polar bear' of the Pacific Northwest. There was strong acknowledgment that we need to educate ourselves and the public on the issue of climate change. Effective messages were felt to be about "how it affects me" rather than more abstract changes. Employees believe we need to have consistent messages within the agency, among programs, and with our partner agencies as we articulate what our resource management priorities will be.

Another priority topic centered on regulations and policy. It was apparent to many that climate change violates a fundamental assumption of the Endangered Species Act, that restoring historical habitat allows us to recover species. The realization that historical conditions are losing relevance is unnerving, and is a clear indication that we can no longer continue with business as usual.

An issue of concern for staff was the need for strong Service leadership and support for innovation. Management needs to address conflicting concepts and direction, and to change priorities and performance reporting mechanisms to better reflect conservation/resource value under the new paradigm of climate change.

Staff also recognized the need to collaborate with partners (e.g., U.S. Geological Survey, Association of Zoos and Aquariums, The Nature Conservancy, universities and others) to maximize the use of existing resources and ongoing studies. Our responses to climate change will need to be adaptive in nature, and the Service needs to support monitoring, data evaluation and forecasting. This kind of information is fundamental to adaptive management.

Both the survey and workshop discussions pointed to a clear need for investment in staff education and for innovation at all levels of the Service. We need to find and support constructive solutions to the challenges—ecological and organizational—posed by climate change. We'll all need to be prepared and brave enough to make difficult decisions as we learn to manage our trust resources in a changing world.

A copy of the survey form, and individual office results, can be viewed at the Pacific Region's Intranet Web site at <https://intranet.fws.gov/region1/climatechange/activitiesmainpage.html>. □

Jeff Burgett, Biologist, Honolulu, Hawaii. Sarah Hall, Recovery Coordinator, Portland, Oregon

southwest

Green Teens

As part of the Service's commitment to connecting people with nature, the Southwest Region invited 30 middle and high school students from Texas, New Mexico, Oklahoma, and Arizona to participate in a forum titled "Young People Can Do Green Things." The forum was held in April at Sevilleta National Wildlife Refuge in New Mexico.

Participants were selected based upon their completion of projects focusing on research or on-the-ground benefits for the environment. As part of the forum, the students presented their projects to their peers. Projects included the creation of a schoolyard habitat, a study of the effects of forest clearing on two species of boreal squirrels, and a cooperative effort to

protect habitat for an endangered salamander in Austin, Texas. The forum also encouraged students to continue to pursue their interest in natural resource conservation.

"A lot of these projects show that changes can be made by anyone, especially young people. We aren't just self-centered, text-messaging teens, but also the minds of the future, and we are ready to start facing the challenges in the world. It matters what every young and teenage soul does in environmental matters, because we are the future, taking the biggest step toward life changing experiences for us and others" noted Morgan Holzhausen, a middle school student from Las Cruces, New Mexico. "No one can stop us, so grownups can help by pointing us in the right direction."

In addition to showcasing their work, students explored the

refuge, where they participated in hands-on research and habitat management projects such as wildlife surveys at dusk, mock wildfire exercises and trapping for three species of kangaroo rats. The Region plans to host the event annually.

"Seeing you here today I have great hope for the future of conservation. You may not go into the Service as an employee, but whatever you decide for a career, you still have the health of the earth in mind," Southwest Regional Director Benjamin N. Tuggle told the students. "You will still use your influence to change the way people think about our fellow inhabitants on this planet. As long as there are conservationists like you out there, the U.S. Fish and Wildlife Service will continue to recognize and celebrate those efforts." □

Dennis Prichard, Acting Refuge Manager, Sevilleta NWR, New Mexico

Refuge Event Hits the Bulls-eye

In March, more than 120 area students participated in the Third Annual Okmulgee County Archery Day at Oklahoma's Deep Fork National Wildlife Refuge. The event's activities included bowfishing, 3-D target shooting, and an archery competition. The archery competition showcased skills gained during the students' physical education classes, which are part of the Oklahoma Department of Wildlife Conservation's Archery in the Schools program (OAIS).

To date, 2.3 million kids in 3,800 schools have participated in the National Archery in the Schools Program. The program's curriculum allows students to learn the history of archery, its physical, emotional and social benefits, and the techniques, safety strategies, and skills necessary to enjoy the sport as a lifetime activity. The program boasts many benefits for schools and students, including increased attendance, greater participation for at risk kids, greater participation by kids who cannot or don't wish to compete in other sports, and an increase in grade point averages.

The refuge created Archery Day in 2004 in an effort to help promote the national program, and more important, to demonstrate that archery can help link kids to the outdoors. Oklahoma currently has 117 elementary, middle and high schools engaged in the program, as well as four colleges and universities. >>

Southwest Regional Director Dr. Benjamin Tuggle (center, front row) poses with youth forum participants.



USFWS



USFWS

midwest 

Partnership Prevents Release of Pet Fish

Reports of large, exotic fish caught by recreational and commercial anglers and fishery resource managers in public waters have become all too common across the country in recent years.

The cause for most of these unexpected and environmentally troubling landings are aquarium owners and water gardeners who can no longer care for ornamental fish that grew to an unmanageable size and who release the fish into nearby surface waters as a quick solution. Pet owners should know that the release of these fish—and the disease pathogens that may infect them—could adversely affect native fish and have serious consequences for sport and commercial fisheries.

Faced with this dilemma, fish hobbyists need to have

appropriate alternatives to abandoning their aquatic pets in the wild. One such option now offered in western Wisconsin is a government and business partnership established in 2006 by the La Crosse National Fish and Wildlife Conservation Office. Several area pet retailers who do not offer these frequently problematic ornamental fish for sale have nonetheless agreed to accept and quarantine large, unwanted pet fish from owners who can no longer care for them.

Because there is virtually no market for these businesses to re-sell such large fish, the La Crosse NFWCO accepts custody of the fish and humanely euthanizes them at no cost. This partnership program helped to prevent the potential release of 10 large, unwanted pet fish into western Wisconsin surface waters in 2007.

The partnership is already paying off. Last fall, the Marineland Pet Center in Onalaska, Wisconsin

accepted seven large hobby fish from owners who no longer wanted them. On December 4, the La Crosse NFWCO took possession of these native South American species, including four 10- to 11-inch black-fin sharks and three 11- to 12-inch oscars. The fish were humanely euthanized with Finquel, a U.S. Food and Drug Administration-approved anesthetic for cold-blooded vertebrates, and preserved later that day.

After preparation by a taxidermist, some of these specimens will become part of an informative display used during La Crosse NFWCO outreach activities to increase public awareness of potentially problematic pet fish and alternatives to releasing these animals in the wild. □

Mark Steingraeber, La Crosse National Fish and Wildlife Conservation Office, La Crosse, Wisconsin

A young participant takes aim during Third Annual Okmulgee County Archery Day at Oklahoma's Deep Fork National Wildlife Refuge.

Bulls-eye, continued from page 31.

"The Deep Fork Archery day gives students involved in the Oklahoma archery program an opportunity to experience 3-D archery and bowfishing," said Colin Berg, education section supervisor for the Oklahoma Department of Wildlife conservation. "While the OAIS program focuses on international style target archery, this day combines that experience with field archery opportunities. Students who have just been shooting at targets indoors start to make the relation between target archery, bow hunting or bow fishing."

More than 75 volunteers provided assistance for the event and staff from the Service's Regional Office in Albuquerque, New Mexico also participated in the activities. "This is what it is all about," said Terry Sanders, Regional Visitor Services Chief. "Getting kids into the outdoors and having fun." □

By Lori Jones, Park Ranger, Southwest Region

Four blackfin sharks were among the unwanted pets turned in to a La Crosse, Wisconsin-area pet store and euthanized by the La Crosse NFWCO.



USFWS



Preparing Before the Storm

The scene was an all too common one in the Southeast. A massive Category 4 hurricane plows into the Gulf Coast, making a direct hit on Saint Marks National Wildlife Refuge on Florida's panhandle.

After being slammed by such devastating hurricanes like Katrina, Rita, and Wilma, the names become a blur of destruction.

Luckily, this one was just a drill. It was called Exercise Hurricane Arthur.

"Our goal was to refine our emergency response plan, rehearse our Incident Commanders, and check out all the communications systems in a realistic setting," said Brian Hardison, safety manager for the Southeast Region. "We probably could have just fired up the communications gear from their pre-positioned sites at Okefenokee NWR, but this way, we really see how they really work in the field."

And work they did.

It took less than a half an hour to get the Special Operations Response Team (SORT) Emergency Response Vehicle (ERV), a 36-foot trailer equipped with satellite-based communications. The SORT's job is to get into a disaster area quickly, usually within 24 hours of impact. It is composed of experienced refuge law enforcement officers from around the Southeast Region trained in a wide variety of skills including disaster response and communications.

For this deployment, the team included Refuge Law Enforcement Officers Steve Rees of Savannah NWR, Thomas Payne of Piedmont NWR, and Jim Shelton of Okefenokee NWR. Using lessons learned from Hurricane Rita, with additional reporting and documentation support provided by the author, Tom MacKenzie, from External Affairs.

Besides the quick response of the SORT and their Emergency Response Vehicle, a second ERV, another 36-foot communications/equipment trailer, was dispatched from Okefenokee NWR. This will form the initial hub for the Incident Command Team as they conduct the longer term operation of getting damaged facilities back into action. If Hurricane Katrina is any example, this can make a remarkable difference, both to the damaged refuges and the local communities.

The Incident Management Team Emergency Response Vehicle is configured to support setting up a fully functioning Incident Management Team with more communications lines. It has already seen action with the "Big Turnaround Fire" at Okefenokee NWR last summer.

The Southeast Disaster Plan calls for recovery work to be handled by one of several qualified Incident Management Teams that the National Fire Interagency Fire Center to respond to wildfires and other emergencies. Based on a standardized Incident Command System (ICS), this flexible, responsive system can expand and contract in size and capabilities within any emergency.



The Special Operations Response Team (SORT) Emergency Response Vehicle in action.

The scenario of Exercise Hurricane Arthur reflected damaged infrastructure, namely flooded underpasses, knocked out utilities from downed trees, and destruction from flying debris. Refuges, Fish Hatcheries and Ecological Services Offices in a 300-square-mile area might be affected, some seriously.

For exercise purposes, four Incident Commanders from the Southeast Region met at the Southeast Regional Office in Atlanta to plan for the monumental tasks of assembling multiple teams to tackle a (simulated) disaster of this magnitude.

"Our basic mission is to get our Fish and Wildlife Service facilities stabilized and protected from further damage," said Mike Housh, lead incident commander for the exercise, normally the District Fire Management Officer for Okefenokee NWR. "We also clear the infrastructure—roads and bridges—to allow people to get to the facilities."

They determined the need for initially deploying a 50-person team to manage the response and to conduct recovery operations, such as tree clearing and removal, road clearing and other vital functions to get our Fish and Wildlife resources back into operation. Additional support to nearby communities also might be possible, depending on the agreements made with communities near Fish and Wildlife Service facilities.

Housh also said it was good refresher training and was helpful to raise awareness of Hurricane Response Plans—plans that call for accurate Geographic Information Systems (GIS) mapping to allow first responders to find Fish and Wildlife facilities and residents quickly, using Global Positioning System (GPS) technology.

"One benefit of our approach is having a small response cell—basically a mosquito team—to get in there quickly and assess the situation," said Housh. "You don't want to go in there with a huge team right off the bat. It is just too difficult to support logistically. >>

Storm, continued from page 33.

"One of our successes was getting into Katrina as quickly as we did," he said. "We went in with a small force. FEMA might show up with a supply train 20 miles long. Our small compact group could be easily supported, so we could get in there fast and see what we need and then build from there."

Housh added that one of the benefits of this type of drill is to get outside of the typical fire response.

"Fire people talk with each other all the time, so we pretty well know what we need to do to fight a fire or do a prescribed burn treatments," he said. "But with a hurricane, you need some unique skills, like construction, finance, water treatment, and electrical technicians. This exercise helps us plan ahead to gather the skilled people we would need to respond effectively."

"We are all glad this wasn't a real hurricane," added Hardison. "But at least we know we are better prepared to deal with it if it happens again." □

Tom MacKenzie, Media Services, Atlanta, Georgia

northeast

Tribal Grant Reaps Harvest

The Wampanoag Tribe of Gay Head (Aquinnah) Natural Resources Department in Massachusetts has boosted commercial scallop harvests on the Aquinnah side of Menemsha Pond as a result of funding from the U.S. Fish and Wildlife Service Tribal Wildlife Grants program

As part of the Bay Scallop Restoration and Enhancement Plan, the commercial scallop harvest has boomed in the past three years, providing a large benefit to local fishermen, improving the ecology of the pond complex and restoring a cultural practice which had been a way of life for the Tribe.

During the harvest season (October to April) of 2005–2006, the commercial harvest was 600 bushels, consistent with recent

Lee Sheppard of the Wampanoag Tribe of Gay Head (Aquinnah) Natural Resources Department holds a hatchery-reared purple bay scallop found during a scuba-dive survey in 2006.



previous years. The benefits of the program became evident in 2006–2007, however, as the harvest increased to 1,700 bushels. This past year, the harvest exceeded 3,000 bushels. Each bushel conservatively equates to roughly seven pounds of shucked scallops, which sell for approximately \$12 a pound.

"Not only is this project an economic benefit to the Tribe, it also has the potential to improve the bay scallop population for Cape Cod," said D.J. Monette, the Service's Northeast Regional Tribal Liaison. "Although bay scallops are not a Service trust species, they are a species of tribal significance used historically traditionally as food by the Tribe." □

Bret Stearns, Director, Wampanoag Tribe of Gay Head (Aquinnah) Natural Resources Department

Better Burns

On wildlife refuges throughout the country, the U.S. Fish and Wildlife Service practices planned or "prescribed" burning, a critical tool used to care for natural areas enjoyed by millions of Americans. With many small refuges and relatively small staffs, finding the minimum number of qualified personnel to safely and effectively carry out annual burn projects can be a challenge. In Virginia, an innovative interagency partnership is addressing this problem.

Periodic burns reduce the accumulation of brush and other vegetation that would quickly become hazardous fuel for dangerous wildfires that threaten communities and natural areas. Fire also helps regenerate vegetation that helps landscapes and wildlife flourish.

A partnership between the Service Virginia-West Virginia zone fire management program based at the Great Dismal Swamp National Wildlife Refuge, The Nature Conservancy (TNC), and the Virginia Department of Conservation and Recreation's Natural Heritage Division (DCR) has created a cost effective and safe way to expand the state's prescribed burning treatments while assisting each other.

All three agencies use prescribed burning, so the agreement enables them to share personnel and costs to apply fire where it is needed, regardless of land ownership. The host burn agency covers the cost for its personnel and the cooperators do the same for their crew.

ARIANNA FELDBERG / WTGHA



Fire staff from the U.S. Fish and Wildlife Service (FWS) and the Virginia Department of Conservation and Recreation, Natural Heritage Division (DCR) work in partnership to complete prescribed burns. Back row left to right. Bert Wyatt (FWS), Adam Wilson (DCR), Tim Craig (FWS), Jason Leasor (FWS), Darren Loomis (DCR).

Sam Lindblom, Fire Manager for TNC's Virginia Program, said, "Collaboration helps us meet our goals including improved habitat for rare, threatened, and endangered species." Among those species is the state's only Red-cockaded Woodpecker population, living in TNC's Piney Grove Preserve.

Rick Myers, DCR's Natural Areas Stewardship Manager added, "Our organizational goals are so similar that almost all the burning we do on non-state lands helps to achieve the mission of our agency, which is to conserve Virginia's biological diversity. This partnership has effectively tripled our agency's resources without significantly increasing total costs. We are getting more accomplished than ever before, and more than I thought possible."

In the 2007 and 2008 spring burn seasons, the partner agencies formed an interagency prescribed fire crew to help meet the expanding workload. FWS hired two seasonal fire staff, and TNC and/or DCR also hired two seasonal fire staff members to be used as a shared resource among all the partners. FWS provided quarters, personal gear, access to equipment and transportation, and day-to-day supervision. With more resources available, prescribed burns can be carried

out in a way that is safer for the crew on the ground.

The Service Virginia-West Virginia zone program averages over 30 burn days a year. In 2007, zone personnel conducted burns on five refuges, and conducted or assisted with burns on three state natural area preserves, one state park, one state wildlife management area, one TNC preserve, and one national park. Combined, more than 3,500 acres were treated.

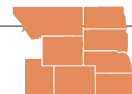
So far in 2008, partnership burn projects have taken place on three refuges, two national parks, one national forest, four TNC preserves, five state natural areas, one state park, and two private properties. More than 6,500 acres have been treated in an assortment of habitats including marshes, grasslands, pine and hardwood forest understory.

The zone fire program and the partnerships have helped the Service expand its prescribed fire activities to nine refuges in Virginia and West Virginia since 2002. Seven of the nine refuges applied prescribed fire for the first time because of the efforts of the individual refuges and zone fire personnel. □

Tim Craig, FWS Fire Management Officer, Virginia/West Virginia

around the service

mountain-prairie



Of People and Wildlife

Working for Public Affairs in the Service's Headquarters Region gives me an excellent overview of conservation issues as well as a thorough understanding of the Service's programs. But occasionally I am overwhelmed by the fast pace of life in the Washington, DC area and need a fresh perspective. Not long ago I found one out West.

For a couple of years, my interest has been in habitat partnerships. I've been volunteering on agricultural and land conservation issues, learning as I went along and frequently flying by the seat of my pants. A couple of summers ago I decided it was time for some real education—and that means getting out in the field. I signed up for a partnership training course in the Nebraska Sand Hills with Gene Mack, one of the Service's most experienced partnership coordinators.

The Nebraska Sand Hills are home to a variety of grasses, flowers, and shrubs.

Flying into the Nebraska Sand Hills from crowded northern Virginia is like entering another world. Recent rains unveiled a beautiful, empty, rolling green expanse of grass—there were a few human beings, but not many. Gene met us at the airport and gave us a brief history lesson of the people, geology and biology of Nebraska. The next three days were jam-packed. Mornings were spent talking about the dynamics of partnerships—appreciating and seeing the strength of differing viewpoints, sustaining enthusiasm, and the importance of really listening to partner needs. The afternoons were spent in the field.

The Nebraska Sand Hills are just that—hills of sand. A variety of beautiful grasses, flowers, shrubs and a few trees flourish in the hills and these rolling dunes go on for as far as you can see. >>



People, continued from page 35.

It's a fragile ecosystem, shaped by the winds. The tops of the dunes tend to become bare with the wind or "blowouts" as Nebraskans say to describe an eroding spot. When it rains, the rain percolates through the dunes and comes out at the bottom in "seeps," replenishing the wetlands and providing water for wildlife and ranchers. Foraging cattle do their part to renew native grasses by breaking up older thatch with their hooves and allowing seeds to germinate.

A key part of my education involved meeting some of the participating landowners in the Nebraska Sand Hills Taskforce. The Taskforce, a group of ranchers, biologists, range specialists, and local community officials, was created in 1991 to ensure the long-term sustainability of the area's agricultural and ecological resources. Each afternoon one or two families would host our training class on their ranch and give us a tour of their operation. As I gazed across hundreds of acres of well-managed cow pasture, I also saw hundreds of acres of wildlife habitat. Mule deer, pronghorn, waterfowl, bobwhite, meadowlarks, and other grassland birds were just some of the species we spied—all happily co-mingling with bovines.

Maintaining and improving these grasslands has led some producers to change their grazing management approach. They move their herds into a smaller fenced pasture area, let them graze intensively on fresh grass for a few days, and then move them off into the next pasture. That pasture is then left undisturbed for a long period of time, usually the rest of the summer. Known as "holistic resource management," it's a technique some ranchers are finding beneficial.

"It makes for a bit more expense and labor up front, but it pays on the back end in terms of maintaining the quality of the grass and the cattle," says rancher Chris Higgins.

Time and time again we were given insights into the ranchers' lives—a chance to walk in their boots, or at least hear about it. People who earn their income from their land frequently view the government with a wary eye. Right or wrong, the public frequently lumps all agencies—feds, states, and locals—together when something negative happens. Government employees may not be seen as individuals but merely representatives of an impersonal bureaucracy—until that employee becomes personally known to the community. We repeatedly heard this refrain from ranchers.

"It's so important for the Service to pick the right person to manage a partnership effort with ranchers, and to give that person the time necessary to meet landowners, find out what their concerns are, and to work on those solutions that help conserve wildlife, but that also allow landowners to continue to work their land," says rancher A.B. Cox.

Without question, land conversion, invasive species, and climate issues will make conservation in the 21st century that much more difficult and complex. Those same challenges—along with a lack of youth recruitment and the pressure to sell—are affecting the ability of our country's agricultural producers to stay on the land.

The Service can do its part by continuing to support creative partnerships that help sustain our country's unique family-owned agricultural operations and our native wildlife and plant populations. Based on what I observed, our work in the Sand Hills provides an excellent case study.

For more information on the Nebraska Sand Hills partnerships, visit www.Sandhillstaskforce.org. □

*Nan Rollison, External Affairs,
Arlington, Virginia*

Deer in the Spotlight

Visitors to Quivira National Wildlife Refuge in south-central Kansas this spring are likely to spot deer sporting numbered ear tags and radio collars among the thousands of sandhill cranes, ducks, and other migratory birds that frequent the refuge's marshes, grasslands and other habitats. The refuge is the site of the state's first large-scale study of white-tailed deer.

The study, a collaboration among the U.S. Fish and Wildlife Service, the Kansas Cooperative Fish and Wildlife Research Unit, Kansas State University's Division of Biology, the Kansas Department of Wildlife and Parks, the Army Corps of Engineers and the U.S. Geological Survey, aims to build a better understanding of the deer population on the refuge. The study will look at how the animals use and impact habitats, their population and social dynamics, and their movements.

Captured deer will be sedated to allow biologists to take



measurements and collect DNA samples, as well as fit the deer with ear tags and radio Global Positioning System (GPS) collars. The collars beam continuous signals to track the animal's movements. By knowing the exact locations of deer, biologists can quantify how often a deer is found on a specific type of habitat and then determine the animal's preferred habitat—an important component for management. Overall population numbers will be gathered during nighttime surveys from vehicles equipped with powerful spotlights.

The Quivira Refuge deer study serves as just one example of how national wildlife refuges provide not only important habitat, but also operate as living laboratories. □

*Barb Perkins, External Affairs,
Denver, Colorado*

Quivira National Wildlife Refuge is the site of the state's first large-scale study of white-tailed deer.



alaska

'Figuring Out Stuff on Our Own'

"It was hard. It was real sweaty. It was my first job. I liked it because it got me in shape and kept me busy. We had to figure out stuff on our own." These are the words of Sissy Attla of Huslia, Alaska, a member of a teen crew who spent the summer of 2006 working to reduce hazardous fuels near her small village on the Koyukuk River.

Huslia is a member of the Koyukuk Athabaskan village of 293 people located on the Koyukuk River within the Koyukuk National Wildlife Refuge in interior Alaska. Bordered by the river on one side, the village is otherwise surrounded by thick boreal forest. Both refuge staff and community members were concerned that a wildland fire could easily threaten the village and its residents. An important component of the 2000 National Fire Plan was to create defensible space around homes and communities, and as a result, the fuels reduction project was created.

During the program's inaugural summer in 2005, five different sites totaling 25 acres were treated. "Treated" means the crew thinned, limbed-up, and/or completely removed the black spruce from project sites in less than four weeks. In an attempt to slow bank erosion, they hauled the resulting biomass to the riverbank. The crew piled the remaining slash, which was burned that November.

The 2005 season proved to be such a success that the Service provided additional funding for the summer of 2006. Eighteen



The hazardous fuels reduction crew near Huslia, Alaska.

young adults applied to work on the project and all were hired to work under supervision of three adults. The Tribal Council assumed all administrative duties, including payroll, budgeting, and hiring the crew and supervisors. Rather than burning the slash, smaller pieces were run through a mulcher and bagged. The village offered the resulting wood chips to anyone wanting to put them down for dust control or general landscaping. The larger pieces were cut into 4- to 6-foot chunks and stacked for the elders in the village to use as building material or firewood.

During the project's two-year span, fuels reduction has occurred on 45 acres surrounding Huslia. The village's efforts provide an excellent example for other rural villages that would like to protect their residents and homes against wildland fire. Equally important, village teens, as well as adults, feel pride in their work to make their village safer.

"The enlargement of the fire zone was important, but just as important was the cooperation between the village and the Fish and Wildlife Service, which assisted us in teaching responsibility to our young adults," said Ed Krause, former Huslia Tribal Administrator. □

Andrea Stebleton, Biological Technician, Anchorage, Alaska

Right: Juan Flores poses next to his work of art.

california/ nevada

Mosaic Mascot

Refuge maintenance worker Juan Flores is using his artistic talents to help connect children to nature at San Francisco Bay National Wildlife Refuge Complex.

Flores created a tile mosaic that depicts the salt marsh harvest mouse, a federally-listed endangered species and a much-loved refuge mascot, in a bed of native pickleweed. The mosaic sits outside the Refuge Environmental Education Center in Alviso, California, which overlooks salt marsh habitat at the top of the refuge's New Chicago Marsh boardwalk.

"It adds a touch of class to this place and has been a big hit with the children, teachers, and parents," said Genie Moore, Environmental Education Center Director. □

Karla Tanner, San Francisco Bay National Wildlife Refuge Complex





Food for Thought

They claim it's the mission.

That our admirable goal of conserving the fish, wildlife, and plants of the globe (“for the continuing benefit of the American people”) accounts for the almost-maniacal devotion to duty that motivates most Fish and Wildlife Service employees.

But, as most of us know, it's really about the food.

Well before training center smorgasbords, decades before regional office clambakes and central office holiday spreads, food played a central role in the life of the Fish and Wildlife Service.

It has something to do with being an agency populated by hunters and anglers who shoot, spear, trap, fish, net, seine, or otherwise “reduce to possession” the fowl of the air and the fins of the sea. We simply recognize the importance of conservation of animals and plants to people...and that part of the value in their preservation consists of, well, eating them.

Long before deliberations over climate change and strategic habitat planning, the Service was engaged in a much more perplexing question: “What are we going to have for dinner tonight?” For nearly two decades, the answer came from four ladies-in-white, cooking in an obscure kitchen in suburban Maryland, whose public voice was the most famous writer in American conservation.

“With holiday parties now in full swing, this year’s hostess will find something different for her holiday guests when she serves such intriguing hors d’oeuvres and canapés as spiced shrimp, smoked salmon rolls and crab salad in puff shells,” one 1947 holiday advisory recommended, dishing up recipes for tuna a la king and “angels on horseback” (bacon-and-oyster concoctions, skewered on festive toothpicks).

“Whatever your nationality, for pre-holiday religious fast days and those post-season “tired of turkey days”, there will be an abundance of various species of fish and shellfish with which the homemaker may add variety and substantial value to the table,” added another agency missive.

That most in this profusion of chirpy household homilies were penned by agency biologist Rachel Carson is a fact glossed over by most conservation historians. (It wasn’t all prize-winning pesticide exposes and lyrical undersea rhapsodies that typified Carson’s literary career.)

Few now recall that, in its day, the Service was one of the most enterprising chefs in the Government—the Julia Child of the Federal bureaucracy. Operating out of test kitchens at the University of Maryland, agency home economists cranked out a variety of recipes for cooking everything from burbot and marsh rabbit to green turtle soup and wine-fried muskrat. Their results were repackaged into cookbooks and promotional campaigns and demonstrations that started after Pearl Harbor and lasted into the 1960s.

“It may seem alien to a Government agency with such virile responsibilities as the management of fur seal herds and the destruction of predatory animals, but the Fish and Wildlife Service works up recipes for the housewife,” a 1948 agency feature trumpeted. Its kitchen-counseling activities are part of a plan to make America more fish conscious.”

Perhaps our most enduring contribution to American cuisine, however, was made years before, by an obscure trapper of wolves and collector of ticks who roamed the backwoods of the American West on studies for the Biological Survey, predecessor to today’s Fish and Wildlife Service.

In 1910, collecting specimens in New Mexico and Arizona, the junior naturalist “demonstrated that he would eat anything,” according to one Penn State Historical Commission account half-a-century later. “(He) made a soup by boiling the meticulously prepared carcasses of mice, chipmunks, gophers, and packrats in a cheesecloth bag....In Labrador, the piece de resistance (sic) was lynx meat, which had been soaked for a month in sherry, pan stewed, and served, in a brown gravy...”

It was while in the frigid north that the man became intrigued by how duck and caribou meat retained its taste and texture when quick-frozen out-of-doors. Cabbages, he noticed, could be preserved in barrels of seawater, later to be chipped from the ice and enjoyed in mid-winter. Those cabbages, according to the account, became “the foundation of a great industry.”

For the novice biologist neither invented the freezing process, nor was the first person to freeze food commercially. “My contribution was to take Eskimo knowledge and the scientists’ theories and adapt them to quantity production,” he confessed. “I do not consider myself to be a remarkable person....But I am intensely curious about the things which I see around me, and this curiosity, combined with a willingness to assume risks, has been responsible for such success and satisfaction as I have achieved in life.”

The Service employee’s name was Clarence Birdseye. His handiwork can still be found in any frozen food locker in any grocery store in America. □

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

transitions

Headquarters

Service Announces Management Changes

The Service in July announced several changes in assignment for members of its leadership team. All of the positions involved are part of the government's Senior Executive Service, and have been approved by the Interior Department's Executive Review Board.

"The Service and I owe a great deal of gratitude to these leaders. They have served well in their current positions and have stepped up for the long term good of the Service," said Service Director H. Dale Hall.

The new assignments are as follows:

Rowan Gould will become the career deputy director of the Fish and Wildlife Service. Gould currently serves as the assistant director for Wildlife and Sport Fish Restoration in Washington, DC.

Ken Stansell, currently serving as the Service's career deputy director, will step aside to become special assistant to the director, charged with providing policy guidance and advice and heading the Service's workforce planning efforts.

Ren Lohofener, currently serving as regional director for the Service's Pacific Region in Portland, Oregon, will become the new director of the California-Nevada Region in Sacramento, California.

Robyn Thorson, who has served since 2003 as regional director for the Great Lakes/Big Rivers Region, headquartered at Fort Snelling, Minnesota, will replace Lohofener as Pacific Region director in Portland. The Pacific Region includes Washington, Oregon, Idaho, Hawaii, and the U.S. Trust Territories in the Pacific Ocean.

Tom Melius, currently serving as regional director for the Service's Alaska Region in Anchorage, will replace Thorson as regional director

in Fort Snelling. The Great Lakes/Big Rivers Region includes Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.

Geoff Haskett will replace Melius as Alaska regional director. Haskett currently serves in Washington, DC as the assistant director for the National Wildlife Refuge System. □



Gary Frazer has been named Assistant Director (AD) for Fisheries and Habitat Conservation. He served

as interim AD at the agency since assuming that position in November 2007.

Frazer started his career with the Service in 1984 as a field biologist in the Ecological Services field office in Virginia. He transferred to the Washington Office in 1989 as a staff person for wetland regulatory issues. While in Washington, he spent a year on detail to the Senate Environment Committee before serving as acting Deputy Chief for the Division of Habitat Conservation. He then worked as special assistant to the Assistant Secretary for Fish and Wildlife and Parks for three years. He left Washington in 1994 to become field supervisor of the Ecological Services field office in Columbia, Missouri, but returned to Washington in 1998 as Deputy AD for the Ecological Services program.

He served as AD for Endangered Species from 1999 to 2004, where he was responsible for carrying out policy development and management for all aspects of the Endangered Species program. From 2004 to 2007, he served as the Service's liaison to the U.S. Geological Survey. In that position Gary worked to broaden and strengthen effective communications and partnerships between the two agencies to support scientifically sound management and decisions by the Service.

Frazer was born and raised in a small farming community in southeastern Iowa, where he knew every fishing hole and hunting spot within hiking distance from town. He earned a bachelor's degree in fisheries and wildlife biology from Iowa State University in 1977, and a master's degree in forestry with a wildlife specialty from Purdue University in 1981. Frazer and his wife and two children currently reside in Herndon, Virginia.



John R. "Rick" Lemon, who, while driving a lonely highway in rural Utah a generation ago,

first envisioned a place where conservationists could learn from each other—a notion that took root and blossomed decades later as the National Conservation Training Center (NCTC) in the hills of West Virginia—retired May 2 after nearly 33 years of Federal service.

"Those long drives between Jones Hole National Fish Hatchery and Vernal... I would daydream about developing such training for the Fish and Wildlife Service and its partners," Lemon recalls. "I saw such passion in our people. I felt we needed to do more to serve them and to develop their potential. I never imagined, however, the opportunity we would have years later to develop a place like NCTC."

Lemon's opportunity arrived in 1990 as the agency created a core planning and training team whose efforts culminated in 1994 with groundbreaking for the \$135 million Shepherdstown campus. He served as NCTC's first director since its debut in 1997, guiding its growth and its evolving capabilities through its first decade.

"One of the best things about working for the Service is getting to do work that has great purpose, surrounded by passionate people. We have been given a gift—a gift

we should never take for granted. Take good care of this home, because it represents an ongoing commitment to our employees and a strategic asset for the Service and conservation. Use it well," Lemon advised his employees upon his retirement.

Lemon, 55, joined the Fish and Wildlife Service in 1978 at Leadville National Fish Hatchery in Colorado, after three years of Peace Corps service in the Central African Republic as a fish culture extension agent. After training at the National Fisheries Academy in Leetown, West Virginia, and two years at Jones Hole, Lemon held progressively more responsible positions in Federal Assistance in the Denver and Portland regional offices, and in Minneapolis as Deputy Assistant Regional Director in Ecological Services. He holds a bachelor's degree in wildlife science from Oregon State University. He was awarded an honorary doctorate from West Virginia's Shepherd University, where he served as commencement speaker in May.

Lemon concluded his NCTC tenure with a talk to Peace Corps managers, a final e-mail to his instructors and staff, and a solo walk across NCTC's campus bridge, "knowing that the following week, nothing will have changed, as the people of NCTC welcome their guests and deliver the same exceptional service they always have." He will live in Oregon with his wife Jeryl. □

David Klinger, NCTC



After 46 years in the government and 35 years with the Service, **Phil Million**

retired as Chief of Conservation Partnerships in External Affairs. Million leaves a highly regarded legacy as a professional communicator and partner to anglers, hunters and the sporting community. >>

our people

Transitions, continued from page 39.

He formerly served as Chief of Public Affairs and led the transition of the Service's communications program from "conservation education" to a professional news media relations operation which became the model for other Interior bureaus. During that time, the agency's responsibilities and the level of controversy surrounding its activities (particularly with regard to Endangered Species) grew considerably. Million advocated for the importance of professional communications and laid much of the groundwork for the structure of regional external affairs offices which we have today.

Behind the scenes, Million was instrumental in encouraging the involvement and support of the industries taxed under the Wildlife and Sport fish Restoration programs (sporting arms, fishing tackle and boating) in some of Service's and Interior's high-visibility conservation initiatives. Million helped get industry solidly behind the North American Waterfowl Management Plan endeavors and, more recently, the National Fish Habitat Initiative.

Million's excellent relations with the hunting community and his understanding of their interests were of enormous value to the Service. One of his achievements came when the Service determined to restrict waterfowl hunting limits in response to declining waterfowl populations during the mid-1980s. The nation was coming off several years of "standardized regulations" which had hit about the time there was a serious drought in the prairie pothole country. Many waterfowlers simply did not believe the Service's survey results and did not see the need for reduced regulations. Million conceived of active outreach to the waterfowl hunting community and industry, and initiated the "Status of Waterfowl" video, which is still produced. This video helped gain hunter support for waterfowl regulations by showing waterfowlers first-hand what the

conditions in the breeding areas look like each year.

Million also served as an information officer with the Office of the Secretary in the late 1970s and early 1980s under Secretaries Andrus and Watt. He worked to get Secretary Watt to support waterfowl and wetlands under the "Protect Our Wetlands and Duck Resources" (POWDR) program, which developed some of the industry and hunter support which was later so important to the North American Waterfowl Management Plan. Million received a Departmental Meritorious Service Award in 1992. □

Anne Tracy announced her retirement from External Affairs in July. Tracy served for 30 years as the chief administrative officer for External Affairs; but her range of skills and knowledge also made her an invaluable asset to the Director's Office, as well as to the administrative staff of the entire Directorate. As every Assistant Director for External Affairs since the early 1990s quickly learned, Tracy was not only diligent and hard-working in her approach to all topics administrative, she was also a great "team player" and a ready source of a smile and an assist. While a scientific agency such as the Service justly honors its premier biologists, it's also important to note the extraordinary works of the Anne Tracys who keep the agency functioning smoothly and efficiently. □

Southeast

In its 105 year history, Pelican Island—the first national wildlife refuge—had only two refuge managers, both named Paul. The first refuge manager, Paul Kroegel, was hired by President Theodore Roosevelt in 1903 and worked until 1926. For the next 67 years, the refuge went virtually unstaffed. In 1993, a decade before the centennial, another Paul was hired as the refuge's second manager to prepare and manage the refuge for the 2003 centennial.

Paul Tritaik

has been at Pelican Island National Wildlife Refuge in Sebastian, Florida for the past 16 years and has worked to acquire buffer lands around Pelican Island; restore citrus groves back to wildlife habitat; develop relationships with Paul Kroegel's grandchildren and the local community; halt erosion from taking away Pelican Island; open the refuge to the public (thus creating the refuge's first public facilities); build strong partnerships; administer the refuge system's centennial celebration at Pelican Island Refuge; and manage a world renowned sea turtle partnership at the Archie Carr National Wildlife Refuge.



The 10th anniversary of the Paul Kroegel Statue at Pelican Island, and the 60th year of Paul Kroegel's passing, were celebrated on March 8 as the two Paul's "stood together" — capturing a special moment in refuge system history.

In May, Tritaik left to become Refuge Manager at J.N. "Ding" Darling National Wildlife Refuge in Sanibel, Florida. □

Joanna Webb, Refuge Ranger, Pelican Island & Archie Carr National Wildlife Refuges

California-Nevada



Steve Thompson, California-Nevada Regional Director for since 2001, retired from the Fish and

Wildlife Service on August 2, 2008, after 32 years of federal service.

His catalogue of memories spans a career path that began as a GS-5 wildlife biologist at Malheur

National Wildlife Refuge in Oregon, to Chief of Refuges in the Southeast Region, to Regional Director of the Service's California-Nevada Region—now officially named Region 8.

Thompson's passion for wildlife was shaped soon after graduating from California's Humboldt State University in 1976. He can recall long days spent outside as a wildlife biologist, trudging through swamps, surveying nesting bald and golden eagles and countless ducks and sandhill cranes. He's witnessed a handful of rare migration spectacles involving half a million birds flying overhead, an experience he describes as "almost spiritual."

Within each recollection is evidence that illustrates the key to his success has been a deep affection for wildlife and people.

"The memories of my best days and greatest accomplishments as a federal employee have never really been about me at all," Thompson, 54, explains. "They've resulted from being in the right place, at the right time with the right people. Being a part of an organization that shares a collective passion for caring for this nation's fish and wildlife resources is what I'm most proud of."

Thompson has provided leadership to the California, Nevada and Klamath Basin region since 2001, when he came to Sacramento on what was promised to be a temporary six-month detail. He supervised an office of a dozen or so staff that was inundated with resources issues that were often as complex as they were controversial.

"The volume and complexity of crises involving water and endangered species issues here was mind-boggling," Thompson recalled. "I had members of congress, senators and other very important people on the telephone four to five times a day looking for solutions to their problems regarding water, endangered species, and other conservation issues."

In a part of the country as rich in wildlife treasures as it can be in wildlife controversy, Thompson has been a catalyst for bringing together people with diverse and opposing perspectives on wildlife conservation. He speaks with pride about helping form the California Rangeland Conservation Coalition, a group of 58 signatories representing ranching, agriculture and conservation groups who have found common ground on pressing wildlife habitat issues. He's also been a key facilitator in bringing industry, government and tribal parties together to find sustainable, long-term solutions to a myriad of conservation issues in the Klamath River Basin. Most recently, Thompson earned a 2007 Presidential Rank award in the category of Distinguished Senior Professionals and Executives, the highest ranking award for a federal employee and the first time a Service employee has received it.

Thompson has also served stints at Puget Sound (Washington), Stillwater (Nevada) and Laguna Atacosa (Texas) national wildlife refuges, where he was refuge manager. In 1994, he was chosen as the first "Refuge Manager of the Year" by the National Audubon Society and the National Wildlife Refuge Association.

"Along the way, I've learned that doing the right things for wildlife often means doing the right things for people, Thompson said. "I've met people from all sides of some of the most pressing resource conservation issues of our day. I've gotten to know them, and gotten to know how fish and wildlife issues affect their livelihoods and their families. I've developed friendships with many people who, years ago, would have been considered adversaries of wildlife conservation. It's the 'Peoples' Resource,' and conserving it for future generations was a great responsibility and a great honor for me during my career in the Fish and Wildlife Service." □

Scott Flaherty, External Affairs, Sacramento, California

honors

Headquarters

Cooperative Conservation Awards

Secretary of the Interior Dirk Kempthorne presented the Department of the Interior's Cooperative Conservation Awards in April, marking "a fitting start to a week of Earth Day activities" in the Nation's Capital. On April 21, 2008, 21 recipients were recognized at a ceremony at the Main Interior Building in Washington, DC. The awards recognized the work of more than 700 groups and individuals who achieved excellence in conservation through collaboration and partnerships.

From prison inmates conducting mining restoration, to one man's effort to remove more than 2000 invasive trees across 1,000 acres of American Samoa, the recipients represented a broad spectrum of conservation work.

The Fish and Wildlife Service nominated five of the finalists honored that day, and overall more than 35 Service employees received individual recognition for their involvement in the awarded projects. "The Service's commitment to partnership is a cornerstone of our conservation efforts," Director H. Dale Hall said when asked about the Service's presence at the awards. "I couldn't be more proud."

Director Hall joined Secretary Kempthorne and Assistant Secretary for Fish and Wildlife and Parks Lyle Laverty, to congratulate the Service-nominated projects that would return home as winners:

■ **The East Bay Wetland and Water Quality Protection Project** has protected almost 8,000 acres of diverse coastal habitats along the East Bay in Texas from severe erosion and habitat degradation. Service staff: Shaun Sanchez, Steve Baker, Kelly McDowell, and Benjamin Tuggle.



The Matanuska-Susitna Salmon Habitat Conservation Partnership accepts their award. Pictured (starting from left): Ann Rappoport, Jennifer Harrison, Service Director H. Dale Hall, John DeLapp, Assistant Secretary Lyle Laverty, Chief Gary Harrison, Kathy Wells, Rick Harrison, Secretary of the Interior Dirk Kempthorne, and Jeanne Hanson

■ More than 29 partners formed the **Matanuska-Susitna Salmon Habitat Conservation Partnership** to address impacts of human use and development in the Matanuska-Susitna basin in Alaska on salmon habitat. Service staff: John DeLapp and Ann G. Rappoport.

■ The **Northern Forest Woodcock Initiative** is represented by over 25 partners with a pledge to conserve and recover the American woodcock. Service staff: Marvin Moriarty and Andrew Weik.

■ The **Penobscot River Restoration Trust** is a collaboration of diverse private, public, and nonprofit entities that, together, are improving access to nearly 1,000 miles of river for sea-run fish. Service staff: Stewart Fefer, Alex Hoar, Lori Nordstrom, Ben Rizzo, and Marvin Moriarty.

■ The **Upper Colorado River Endangered Fish Recovery Program** was honored as a first-of-its-kind river basin management collaboration. Service staff: Stephen Guertin, Robert Muth, Angela Kantola, Thomas Chart, Thomas Czapl, Debra Felker, Mary Nelson, Ellen Szczesny, Kathleen Wall, George Smith, and Jana Mohrman. This award was shared with the San Juan River Basin Recovery Implementation Program. Service staff: Brian Millsap, David Campbell, Sharon Whitmore, Joann Perea-Richmann, and Allan Pfister.

For these winners, the award reinforces the value of the partnership in local communities. Angela Kantola from the Upper

Colorado River Endangered Fish Recovery Program said her group and the San Juan River Recovery Implementation Program were honored to receive the award, adding that "collaboration is the most viable way to recover endangered species while continuing to meet human water needs." Although non-monetary in nature, some recipients have already planned to use the award to bring in more dollars and partners to the project.

As a national leader in cooperative conservation, the Service also had a number of personnel honored from projects that other bureaus nominated, including: Steve Spangle and the Sonoran Joint Venture (Southwestern Bald Eagle Management Committee Arizona Bald Eagle Nestwatch Program, Bureau of Indian Affairs nominee); Tim Bodurtha and Ben Conard (Great Northern Environmental Stewardship Area, National Park Service nominee); Sherry Barrett and Jason Douglas (Upper San Pedro Partnership, U.S. Geological Survey nominee); and John Earle, Stan Culling, Bill Seese, and Tina Lynsky (Lower Colorado River Multi Species Conservation Program, Bureau of Reclamation nominee). In addition, Georgia Jeppesen accepted an award for her late husband, Mark A. Benedict, who was nominated by the Park Service for his enduring contributions to the protection of the nation's natural resources. □

Michael Gale, External Affairs, Washington, DC

our people

Dan Thorington, Joel Kemm and **Greg Owens** are individual recipients of the 2008 U.S. Fish and Wildlife Service Environmental Leadership Awards. Service Director H. Dale Hall cited them along with several Service facilities for their commitment to the environment and outstanding leadership.

Thorington, an employee of the Alaska Maritime National Wildlife Refuge, won for his recycling efforts; Kemm, who works at St. Croix Wetland Management District, won for waste and pollution prevention; and Owens, from the Rappahannock River Valley National Wildlife Refuge, won for his sustainable design/green buildings efforts.

Facility/Office Environmental Leadership Awards went to the Region's Division of Contracting and Facilities Management for green purchasing; Kanagayak Field Station, Yukon Delta National Wildlife Refuge for recycling and minimizing petroleum use in transportation; Rhode Island National Wildlife Refuge Headquarters and Kettle Pond Visitor Center for waste and pollution prevention; Tualatin River National Wildlife Refuge Wildlife Center and Administration Building for sustainable design/green buildings; and Farallon National Wildlife Refuge for an environmental management system.

Honorable mentions were received by the Region's Division of Contracting and Facilities Management for recycling and an environmental management system; Rhode Island National Wildlife Refuge Headquarters and Kettle Pond Visitor Center for recycling and an environmental management system; Kanagayak Field Station, Yukon Delta National Wildlife Refuge for waste and pollution prevention; Thorington, Alaska Maritime National Wildlife Refuge for an environmental management

system; Owens, Rappahannock River Valley National Wildlife Refuge for green purchasing; and Farallon National Wildlife Refuge for minimizing petroleum use in transportation.

In addition to the individual and facility awards in the various categories, Wolf Creek National Fish Hatchery is the 2008 recipient of the "Hatchery of the Year" award and Farallon National Wildlife Refuge is the 2008 recipient of the "Refuge of the Year" award for excellence in several award areas. □



Bennie Williams is among seven federal managers who received a "Legends Award" from the

American Recreation Coalition. The award recognizes outstanding work to improve outdoor recreation experiences and opportunities for the American people. Williams oversees the coordination of interjurisdictional fisheries and recreational fisheries management at the national level for the U.S. Fish and Wildlife Service. He has demonstrated extraordinary individual effort and great personal sacrifice to expand participation of urban youth in recreational fishing and to connect children—especially under-served and special-needs youth—to nature through the use of innovative programs. □

Fish & Wildlife News received a National Association of Government Communicators (NAGC) Blue Pencil Award of Excellence in March for issues produced in 2007. Public Affairs Specialist **Ken Burton** posthumously received an NAGC Blue Pencil Award of Excellence and Second Place Award for articles written in 2007. □

Southwest

John Bertrand, from Friends of the Bosque del Apache National Wildlife Refuge in New Mexico, was selected as Volunteer of the Year for 2008. The award was presented by the National Wildlife Refuge Association on April 6 during the Friends for the Future Conference, co-sponsored by the Association and the U.S. Fish and Wildlife Service.

Bertrand, praised as a convincing and avid spokesman for refuges, founded Habitat! 14 years ago as a professional-quality news magazine for Bosque del Apache Refuge. Habitat! is a paid insert in four local newspapers as well as among another 50,000 readers statewide and state and national legislators.

Bertrand has recorded 11,651 volunteer hours at Bosque del Apache Refuge, and also contributed to the success of the Grand Opening of the Islands and Ocean Visitor Center at Alaska Maritime National Wildlife Refuge, and served as a full-time resident volunteer at Selawik National Wildlife Refuge in Alaska. □



Fish biologist and freelance writer **Craig Springer** received an American Fisheries Society Excellence in

Public Outreach Award. Springer is editor of *Eddies* magazine, which highlights the Service's fisheries conservation work. □

Midwest

The **Friends of Sherburne National Wildlife Refuge** in Minnesota was named Friends Group of the Year. The award was presented by the National Wildlife Refuge Association on April 6 during the Friends for the Future Conference, co-sponsored by the Association and the U.S. Fish and Wildlife Service.

The Friends of Sherburne Refuge is active on many fronts. The Friends co-sponsor six special events each year, including National Public Lands Day, as well as a wildlife film festival and a Christmas bird count. The group also maintains memberships in four local chambers of commerce and partnerships with the Rapids Archer Club, National Camera Exchange, the University of Minnesota Raptor Center and others.

The Sherburne Friends are extremely generous with their time, talent and funds. With grants from the National Fish and Wildlife Foundation, the Friends purchased 40 acres of wetland habitat that were donated to Crane Meadows National Wildlife Refuge. In 2007, the group provided financial support for an intern in the Student Conservation Employment Program, and has just launched a capital campaign to raise \$5 million for a new visitor center. □



Kevin Brennan, manager of the Fergus Falls Wetland Management District, is the 2008 Refuge Manager of

the Year. The award was presented by the National Wildlife Refuge Association on April 6 during the Friends for the Future Conference, co-sponsored by the Association and the U.S. Fish and Wildlife Service.

Brennan was one of the first managers in the nation to aggressively promote the Wildlife Habitat Easement Program. More than 4,180 acres of productive, privately-owned wetland and grassland habitats in the Fergus Falls Wetland Management District are now perpetually protected. Brennan also led the effort to create and manage the Prairie Wetlands Learning Center, a cooperative effort involving the City of Fergus Falls, the State of Minnesota and the Friends of the Prairie Learning Center. The center hosts 50,000

visitors a year, including 100 fifth-graders who attend classes at the center every day. Minnesota officials took note of the program's excellence and funded a \$2 million expansion, which will double its capacity by this fall. □

The Department of the Interior honored two Refuge System employees with Valor Awards for their dramatic nighttime rescue of an angler trapped in the icy Mississippi River in December 2007. The employees were among 92 honored May 13 during the 65th Honors Convocation of the Department.

Russell A. Engelke and Darryn J. Witt, both from the Savanna District of the Upper Mississippi River National Wildlife and Fish Refuge, were cited for braving icy currents to save the life of a fisherman stuck for 15 hours when his hovercraft capsized off the Illinois shore. Engelke and Witt launched their airboat in the dark after several rescue attempts failed to reach two stranded anglers.

Engelke and Witt reached one victim—perched on top of the overturned hovercraft—at 10:30 p.m. They attached a line from their airboat to the overturned craft and secured the victim, who was unable to move. A rescue swimmer ran another line to shore. Engelke and Witt held onto the victim and the hovercraft which were pulled to shore. The victim was airlifted to the hospital. Engelke and Witt then returned to the icy river to search for the other man until deteriorating conditions stopped the rescue mission. Unfortunately, the second angler passed away.

The Department of the Interior each year recognizes acts of "courage, valor, selflessness and exceptional management" in men and women nominated by their agencies. During the May 13 ceremonies, Secretary of the Interior Dirk Kempthorne said the dedication and commitment of all honorees "serve as a guiding light to us all." □

Southeast

Ralph Costa received the Distinguished Service Award—the highest honorary recognition granted for exceptional contribution to the public service—for his sustained career excellence and outstanding leadership involving red-cockaded woodpecker conservation in the Southeastern United States. Costa served as the Service's red-cockaded woodpecker recovery coordinator from 1991 until his retirement in 2007. His considerable vision, innovation and leadership significantly and positively influenced the conservation and management of the endangered woodpecker. Costa shaped the Service's woodpecker management direction by fostering coordination and collaboration among other Federal, State, and private partners in Florida, Mississippi, Alabama and Georgia. Costa also successfully promoted the use of Safe Harbor Agreements as an effective recovery tool throughout the woodpeckers' range, enabling private landowners to unite with the government to ensure the survival of the imperiled species. The woodpecker's encouraging progress toward range-wide recovery is testimony to Costa's ability as a conservationist and team-builder. □

Northeast

Resident Agent-in-Charge **Christopher Dowd**, who oversees Service law enforcement operations in New England, received the 2007 Guy Bradley Award for wildlife law enforcement. The award, presented each year by the National Fish and Wildlife Foundation, recognizes individuals for outstanding lifetime contributions to wildlife law enforcement.

Dowd, who has worked for the Service as a criminal investigator for more than three decades, was honored for his success in safeguarding wildlife from such threats as environmental contaminants, encroaching development and illegal

commercialization. He was also cited for his commitment to supporting other investigators and agencies in protecting wildlife resources.

Dowd headed up the Service investigation of two of the most devastating oil spills to affect wildlife and wildlife habitat in the nation's history. In one case, the company responsible for a spill that killed hundreds of protected birds and damaged 90 miles of Massachusetts beaches paid a \$10 million fine. In the other, which involved a spill off the coast of Rhode Island, the corporation involved paid \$7 million in federal and state penalties. A significant portion of the fine money in both cases was used to support wetland conservation projects.

Dowd was also recognized for his contributions to the protection of endangered species that range from the Northeast beach tiger beetle to the piping plover. His efforts to safeguard the plover included working to secure the cooperation of coastal communities in reducing the impact of beach use on plover populations.

Dowd's accomplishments also include investigations that exposed unlawful commercialization of wildlife resources. His casework secured the prosecution of waterfowl guides conducting illegal hunts in the Boston area; broke up a notorious poaching ring operating in Connecticut, Vermont, and New York, and snared a Massachusetts resident using fraudulent licenses to hunt big game in Alaska. His investigations of global wildlife smuggling documented trafficking in contraband that ranged from black palm cockatoos to beluga caviar. □

Alaska

Elizabeth Labunski of the Migratory Bird Management Division, was awarded the Arctic Service Medal on May 3, 2008 by Commanding Officer Ted Lindström, of the U.S. Coast Guard Cutter Healy during



a scientific voyage in the Bering Sea. The Coast Guard Arctic Service Medal is awarded to any member of the Coast

Guard who performs 21 days of cumulative duty in the polar waters of the Arctic Circle or above 60 degrees latitude in winter, and may also be awarded, on a case by case basis, to non-Coast Guard personnel who perform significant duties in support of Coast Guard missions within the Arctic region. Labunski surveyed marine birds and mammals aboard the Healy from March 12–May 6, 2008. □

California-Nevada

Clyde Morris, recently retired manager of Don Edwards San Francisco Bay National Wildlife Refuge, was named Refuge Employee of the Year. The award was presented by the National Wildlife Refuge Association on April 6 during the Friends for the Future Conference, co-sponsored by the Association and the U.S. Fish and Wildlife Service.

"Clyde knows how to get things done," said San Francisco Bay Refuge Complex Project Leader Mendel Stewart. Stewart said Morris brings to his work a rare combination of natural science knowledge, effective leadership skills and common sense.

Morris' openness to innovative solutions, his entrepreneurial spirit and his courage in the face of the "way it is usually done" saved literally millions of dollars in the restoration of Bair Island in San Francisco Bay. He also reaches out to the public effectively, leading public participation efforts for the South Bay Salt Pond Project and working with residents to explain a new hunting plan and reduce the threat of wildfires to an adjacent housing development. □

our people



Refuge Officer **Walter Duran**, of the San Francisco Bay National Wildlife Refuge Complex, was one of six

people honored in February 2008 by the San Mateo County Sheriff for their roles in the rescue of a local father and son when their airplane crashed in San Francisco Bay on October 27, 2007.

Sheriff Greg Munks presented commendation awards to Duran and Greg Grinton of the California Department of Fish and Game, as well as flight instructors Maggie Rogers and Brett Smith, and air traffic controllers David Greene and Wali Elahi.

The engine on the family's Beechcraft Bonanza died shortly after pilot Rob Fisher and his son Christopher, 10, had taken off from San Carlos Airport. According to the National Transportation Safety Board (NTSB), the aircraft was at about 1,000 feet when the engine stopped.

Fisher skillfully piloted the unpowered aircraft into the bay about a half mile from shore, keeping the wings horizontal and preventing the plane from stalling. Fisher and his son clung to the plane as it sank. He said it was his first crash in 20 years of flying.

Rogers, who was piloting a helicopter in the area with Smith, flew to the crash site and dropped life jackets to the Fishers.

Fisher and Christopher swam to shore, where they were plucked from the mud flats by Duran and Grinton, who were monitoring the start of duck-hunting season in the South Bay. Their 14-foot boat, unlike the rescue craft that came

to the Fishers' aid, was capable of reaching them. Christopher was wrapped in a blanket, and the two were transferred to a fire department boat.

The cause of the crash is under investigation by the NTSB. □

in memoriam



Billy Warren, a volunteer for the loggerhead sea turtle crew at Cape Romain National Wildlife

Refuge since 2003, died March 23, 2008. In the past five years Warren accrued more than 1,100 volunteer hours on the refuge. He assisted with the sea turtle nesting project, invasive species control, shorebird surveys, and posted and maintained seabird nesting areas. Early in 2008, he enthusiastically attended boat operation training classes to help with refuge programs. Warren's dedication and enthusiasm were crucial to continuing the sea turtle nesting surveys on Lighthouse Island, as well as initiating a new sea turtle program on Bull's Island.

Warren also volunteered more than 4,500 hours at the South Carolina Aquarium in a 10 year period. His work at the Aquarium began in 1998, when Warren presented turtle talks and conducted outreach. He worked at an off-site quarantine facility that housed animals while the Aquarium was being built. When that facility closed, Warren went to the Aquarium to assist with offshore reef exhibits, care for the bird collection, and help rehabilitate sick and injured sea turtles in the Sea Turtle Rescue Program. □



William R. Thomas, an Administrative Support Assistant/Receptionist at John Heinz National Wildlife

Refuge at Tinicum, Pennsylvania, died May 18, 2008.

Thomas served in this position at the refuge since fall 2002, when he transferred from the Veterans Administration. Prior to the VA, Warren served a full career and retired from the U.S. Navy. Thomas found his passion serving as a refuge computer specialist and coordinating refuge fishing programs (including annual pathways to fishing events). Warren was a kind and gentle person with a heart of gold, who found much pleasure in nature by watching deer and wild turkey every morning at the refuge bird feeders before starting work. Because he coordinated the "Passport to Fishing" program for the past five years, the program was renamed in his honor. His family was in attendance at this year's event on Sunday, June 1.

The Thomas family has asked that any donations be made to: Friends of the Heinz Refuge (FOHR), 8601 Lindbergh Blvd., Philadelphia, PA 19153. Cards may also be sent to the family at 21 Green Lane, Bristol, PA 19007. □



Loren Hays, a wildlife biologist with the U.S. Fish and Wildlife Service for more than 20 years, died April 18, 2008,

in Huntington Beach, California, after suffering a heart attack.

A native of Colorado, Hays earned a degree in wildlife biology from Colorado State University in 1970. He then served with the U.S. Army

in Vietnam from 1970–73. In 1985, he completed his master's degree in wildlife biology at the University of California, Long Beach. Hays joined the Service that same year. After retiring from the Service in 2006, he continued to support our mission by volunteering his time to monitor endangered California least terns and western snowy plovers along southern California beaches.

Long before Cooperative Conservation became part of the Service's vernacular, Hays embodied the concept of working in partnership with others to conserve species. His efforts to develop positive relationships with the Orange County Water District, the counties of Orange and Riverside, the City of Corona, the Santa Ana Watershed Project Authority and other federal agencies led to riparian habitat improvements along the Santa Ana River that enabled least Bell's vireos to increase their nesting pairs from a low of about 19 in 1986 to more than 800 by 2004.

Hays cherished his wife, Debbie, and daughter, Rachel, and always beamed when he spoke about Rachel's prowess on the soccer field. During those many soccer games Hays prowled the sidelines, sometimes quoting from the rulebook when referees didn't make the right calls.

Nancy Gilbert, field supervisor at the Bend, Oregon, Fish and Wildlife Office and former Carlsbad Office colleague, describes Hays as a "big-hearted man who had a passion for birds, blues guitar, and family and friends."

The wildlife of southern California was fortunate to have Hays in its corner acting as advocate and champion, and the Service is lucky to be able to say he was part of our family. He is deeply missed by all those who knew him and were fortunate enough to have worked with him. □

Mark Butler, the Platte River Liaison for the Mountain-Prairie Region, died June 2, 2008.

Butler's work in Colorado, Wyoming, and Nebraska to recover river-corridor habitat for federally listed species was particularly valuable because it required his technical expertise on the impacts of water use in the basin, as well as his negotiating skills for alternative water-management strategies in a region where water resources are scarce. Butler spent countless hours providing technical expertise and guidance to the Service on a variety of Platte River issues, earning tremendous respect from professional counterparts, private and public, throughout the region.

Butler started his career with the federal government as a GS-5 geologist with the Bureau of Land Management in Oklahoma City, Oklahoma, in 1978. He joined the U.S. Fish and Wildlife Service as a hydrologist in 1987. His consistently superior performance earned him considerable recognition, numerous awards and valuable opportunities to take on leadership roles.

Thanks to Butler's long-term involvement with the Platte River Recovery Program, the habitat conditions for least terns, piping plovers, whooping cranes and pallid sturgeon in the Platte River basin continue to improve.

He is survived by his wife, Betty, and his son, Dylan. □

John Albert Mattoon, who transformed the U.S. Fish and Wildlife Service's public face from a traditional conservation information and education office into a modern, multi-faceted communications operation—forming the foundation of the agency's External Affairs program of today—died June 18 in Falls Church, Virginia. He was 86.

Mattoon's 40-year Federal career spanned the three of the nation's four major land management agencies. While he was a second-generation forester and started as a laborer in the woods of the Pacific Northwest, it was in public affairs that Mattoon made his greatest mark.

As a U.S. Forest Service manager for 21 years, he expanded the reach of the Smokey Bear forest fire prevention campaign; in the late 1960s, as chief of information for the Bureau of Land Management, he created the Johnny Horizon public service image to broaden greater understanding of the scope of that Interior Department agency's duties. Mattoon enlisted Hollywood celebrities of the era—Lorne Greene, Burl Ives, and Arthur Godfrey, among them—to aid the government's public service advertising campaigns.

As public affairs director for the Fish and Wildlife Service from 1973 until his retirement in 1983, Mattoon fashioned a bureau-wide public affairs structure in which regional information officers would become integral advisors to their regional directorates. Many of the agency's first corporate partnerships were attempted in that era, including public outreach campaigns with Du Pont, Sears, American Airlines, and General Wine and Spirits. In that pre-computer, pre-digital world, Mattoon took the first steps to modernize and professionalize the agency's film and video and publications management operations. He earned both the Interior Department's meritorious and distinguished service awards.

Born in Hartford, Connecticut in 1921, Mattoon was a graduate of Pennsylvania State University and received his master's degree from the Yale School of Forestry in 1950. He was a decorated World War II hero, serving on the USS Yorktown as a dive bomber pilot at age 23, earning two Distinguished Flying

Crosses and other combat medals for his service, including his part in sinking a Japanese battleship. On one occasion, Lt. Mattoon dislodged a live bomb from the undercarriage of his squadron leader's aircraft—using the tip of his own plane while in flight, permitting the other plane to land safely on the Yorktown.

Mattoon's World War II exploits and his love of flying perhaps were responsible for his forceful admonitions to Fish and Wildlife Service managers in Washington whenever any reluctance to include public information officers in agency decision making was shown. "Do you want us in on the takeoff," Mattoon would inquire, "or do you want us in on the crash landing?" □

David Klinger, NCTC



RYAN HAGERTY / USFWS

Jessie Hendrix, a diminutive but strong-willed West Virginia farm owner whose vision for her rural acreage

became the genesis of the world's foremost center for conservation training, died April 13 in her 250-year-old Shepherdstown farmhouse, of causes related to old age. She was 94.

Circumstances brought the U.S. Fish and Wildlife Service to her doorstep in the early 1990s, as the agency was scouting alternative locations for its National Conservation Training Center. Hendrix, on winter vacation in Tucson, had read in a local newspaper that plans to locate NCTC near Harpers Ferry, West Virginia, had been abandoned. Seeking to preserve her 538-acre tract of pasture and woodland, within a month she had sold her property to the Federal Government as the site for the new training campus.

"Mrs. Hendrix had been offered far more for the property by developers, but she and her late husband, (U.S. Navy) Captain Charles Hendrix, had always wanted the property kept intact," says Rick Lemon, NCTC's recently-retired first director. "NCTC may well have been somewhere else, but no property we looked at could hold a candle to this site for our Service home. If it were not for Mrs. Hendrix, we would not be here today."

A frequent visitor to evening lectures and open houses on the NCTC campus in its early days, Hendrix's appearances became increasingly rare, yet she kept a watchful eye on activities from "Springwood," her stone residence built in 1759 on the perimeter of the training center property. Presidents, senators, governors, and acclaimed authors all came to NCTC, but it was in its education of the agency's everyday, rank-and-file employees that Hendrix took greatest pride. "I'm the luckiest person on earth to have sold my farm to you," she said in 2007, upon NCTC's 10-year anniversary.

Hendrix was born in 1914 in Vacaville, California. She worked on Capitol Hill as senior administrative assistant to several Congressmen and, for 32 years, at local Shepherd University. Her husband, a famed World War II submarine captain with 12 war patrols to his credit, is memorialized at his alma mater, the U.S. Naval Academy in Annapolis, Maryland, with an oceanography laboratory named in his honor. He died in 1976. Their daughter, Dr. Mary Hendrix of Chicago, president and scientific director of Northwestern University's Children's Memorial Research Center, and a sister, of Vacaville, survive. □

David Klinger, NCTC



Although Kennedy's Emerald dragonflies are found in Canada and the continental United States, the species was documented for the first time in Alaska this June by John Hudson and Robert Armstrong. They discovered the insect in interior Alaska during a dragonfly and damselfly collecting trip that was part of a Service Challenge Cost-Share Grant with Kanuti National Wildlife Refuge.

Fish & Wildlife News

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