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Refuge Update – July/August 2005, Volume 2, Number 4

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Experts Mobilize to Recover Ivory-Billed Woodpecker

Rediscovery at Cache River Refuge Breeds Hope



Searchers rediscovered the Ivory-billed woodpecker in April at the Cache River NWR, AR. Prior to its recent rediscovery, the last confirmed sighting of an Ivory-billed woodpecker was more than 60 years ago. (Mark Godfrey/TNC)



Just months after the phenomenal news in April that an Ivory-billed woodpecker had been rediscovered at Arkansas' Cache River NWR, a newly appointed team of experts began charting a recovery plan for the bird thought to be extinct for more than 60 years. The new team is charged with developing a full recovery program by spring 2007.

The recovery team's efforts will be bolstered by \$10.2 million in redirected funds from the Interior and Agriculture Departments, supplementing funds already committed to research and habitat protection by private sector groups and citizens. In addition to funding recovery planning, federal monies will be used for research and monitoring, public education, law enforcement and habitat conservation

through conservation easements, safe-harbor agreements and conservation reserves.

The recovery team brings together some of the best minds in ecology, conservation biology, forestry and ornithology from a wide spectrum of organizations, including the Arkansas Game and Fish Commission, Cornell University's Laboratory of Ornithology, Civic Enterprises, the Fish and Wildlife Service, U.S. Army Corps of Engineers, the National Fish and Wildlife Foundation, The Nature Conservancy, Arkansas Wildlife Federation, Audubon Society of Arkansas, National Audubon Society, Forest Service and the American Forest Foundation.



From the Acting Director

Our Visitors Deserve the Best We Have

For the past several years, the National Wildlife Refuge System has been

New Hampshire. At the same time, we proposed expanding opportunities at seven additional wildlife refuges in California, Maine, Massachusetts, Missouri, New York and Washington. Not long before that, we published a comprehensive update of *Your Guide to Fishing on National Wildlife Refuges*, and we're working with our partners to make the guide and its information widely available.

We're also spreading our message and our Service mission to new publics:

- We've launched a Web site, <http://historicpreservation.fws.gov/>, which highlights the 12,000-plus cultural and historical sites that have been identified on wildlife refuge;
- We are improving and standardizing signs so people can find wildlife refuges more easily and know that the Fish and Wildlife Service administers them;
- We've renewed our formal partnership with the nonprofit Wilderness Inquiry, dedicated to expanding recreation opportunities for those with disabilities; and
- We're working with the North American Nature Photography Association to add 14 new photography blinds to those that already serve the public on 17 wildlife refuges.

hard at work fulfilling the intent of the 1997 National Wildlife Refuge Improvement Act. Service employees have made some impressive gains in this area that we're proud to share these accomplishments with all Americans.

We've been expanding compatible wildlife dependent recreational opportunities, such as hunting and fishing, on our national wildlife refuges. We welcome hunters, anglers, bird watchers, photographers, and others who seek to enjoy the extraordinary resources on this nation's wildlife refuges.

Just a few weeks ago, we proposed adding hunting and fishing programs on refuges in Alabama, California, Connecticut, Massachusetts, Minnesota and

• To help us engage new audiences, we have joined the Travel Industry of America and exhibited at its annual conference;

• ESPN will air two 30-minute specials about national wildlife refuges this year, and continues to broadcast the two-minute weekly vignettes that millions have enjoyed;

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Chief's Corner

Meeting the World of Wildlife on Trails

A great way to embrace the natural

world is to hike, paddle or ride along some of the 2,500 miles of land and water trails of America's national wildlife refuges. About a quarter of our annual visitors already do so. What's important is not reaching a destination, but taking the journey.

Take time to watch or photograph birds, mammals and other species. Listen to the calls of cranes and wrens. Inhale the fragrance of spring and summer wild flowers. Enjoy the splendors that each season brings.

We are featuring the National Wildlife Refuge System's network of trails in this *Refuge Update* not because they themselves are destinations, but because they are the routes to a better appreciation of the natural world and a greater understanding of the role of wildlife refuges in wildlife conservation. On the Refuge System's trails, you can begin to discover why national wildlife refuges are so special to individual communities and to America's sense of nationhood.

The Refuge System has always had a network of trails. The Pony Express National Historic Trail travels through two refuges – Fish Springs in Utah and Ruby Lake in Nevada. In the 1920s,

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RefugeUpdate

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A New Line on Refuge Fishing

New Guide Unveiled Just in Time for Fishing Season

By Steve Farrell

The National Wildlife Refuge System unveiled *Your Guide to Fishing on National Wildlife Refuges* at the Outdoor Writers Association of America's annual conference in Madison, WI, in June. An updated version of the original 1991 publication, the guide highlights more than 270 fishing sites and provides anglers the information necessary to enjoy world-class fishing opportunities.

The guide gives anglers easy access to refuges across the country by highlighting not only the fishing opportunities but also the nearest highways, towns and services. For example, Bostonians can take a short trip along Highway 28 to reach Monomoy NWR, world-renowned for superb flats fishing for trophy stripers.

The guide also can help anglers find the most convenient boat ramps and fishing piers to bring them closer to the catch of a lifetime. Launching a drift boat from one of four boat ramps at Seedsdakee NWR in Wyoming brings fly-fishers closer to the 20-plus inch trout that thrive in refuge waters. Like Seedsdakee Refuge, several others throughout the Mountain-Prairie Region host trout of all sizes and colors, luring anglers to high mountain streams and famous trout waters such as the Green River.

In addition, the guide describes the lakes, streams and waterways that can be fished as well as the species available, offering specific information about fishing seasons, hours of refuge operation and the condition of access roads. In the Southeast, this information promotes one of the most well known brands of fishing in America — bass angling. Witnessing hog bass surface for a popper on Lake Eufaula on its namesake refuge in Alabama is a memorable experience for hundreds of families and friends each year.

For the wilder side of the fishing experience, the guide gives adventure-seeking anglers helpful information for arranging

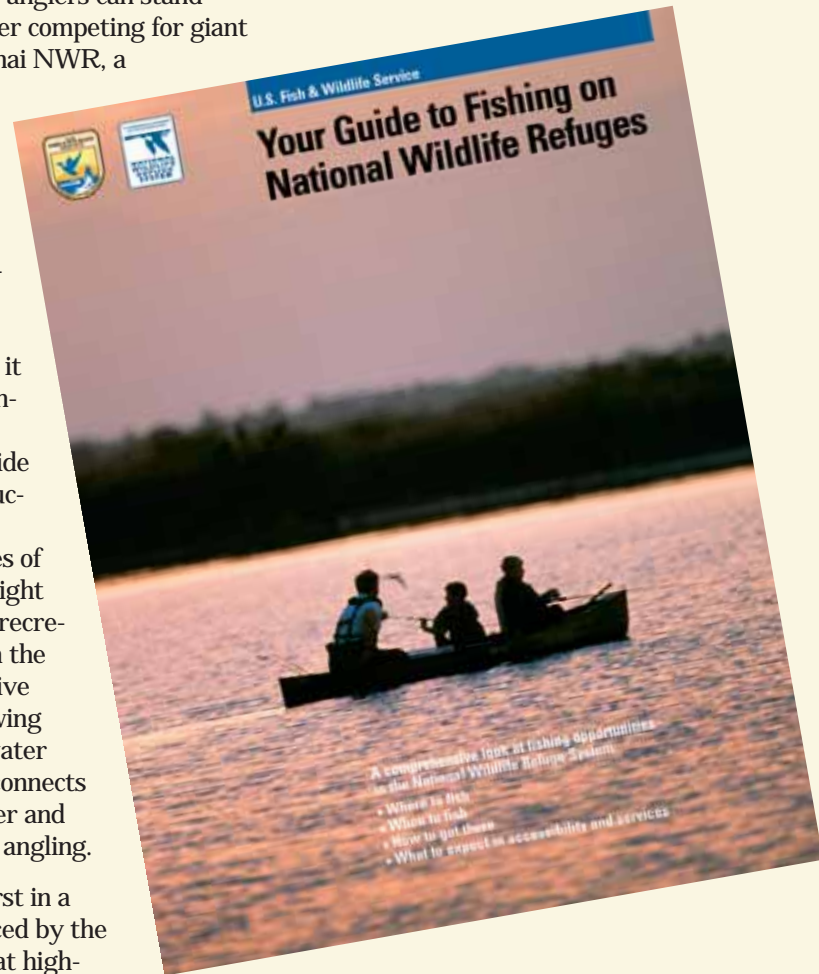
trips to Alaska refuges, where they're sure to feel they have left the rest of the world behind. From the Alaska Peninsula to the far reaches of Yukon Flats Refuge, anglers can catch all five species of Pacific salmon while floating some of the nation's most pristine rivers. For an intense fishing experience, anglers can stand shoulder-to-shoulder competing for giant king salmon at Kenai NWR, a popular fishing hotspot.

While *Your Guide to Fishing on National Wildlife Refuges* was created to help people discover many a special honey hole, it is not without a connection to natural resources. The guide contains an introduction to the Refuge System and a series of sidebars that highlight both resource and recreation issues. From the fight against invasive species to the growing popularity of saltwater fishing, the guide connects anglers to the water and encourages ethical angling.

The guide is the first in a series to be produced by the Refuge System that highlights its vast recreational opportunities. Future guides will focus on wildlife watching, birding, photography and hunting.

For more information on the fishing guide, contact Steve Farrell, steve_farrell@fws.gov or (703) 358-2247. Each staffed refuge and Regional Office received copies of the guide. It is also available on the Refuge System's Web site, <http://refuges.fws.gov>, for online viewing or downloading. ♦

The new fishing guide provides information on all refuge fishing sites, including access to fishing piers and boat launches, fishing seasons, hours of refuge operation, access roads and highway routes. In addition, the guide describes all the refuge lakes, streams and waterways that can be fished as well as the species available. (USFWS)



Steve Farrell is a communications specialist in the Division of Visitor Services and Communications in Refuge System Headquarters.

Partners' Ingenuity Saves Kauai Albatross Chicks



Biologist Brenda Zaun, from Kilauea Point NWR, HI, places a foster chick in a Laysan albatross nest. (Judson Ventar/USDA-Wildlife Services)

By Barbara Maxfield

In the continuous pursuit to safely operate a military airfield in the midst of an albatross nesting colony, a group of partners as committed to saving the birds as to ensuring aircraft and aviator safety found a new approach on the island of Kauai in Hawaii.

The U.S. Navy's Pacific Missile Range Facility, on the southwestern coast of Kauai, operates an active airfield but also is home to a nesting population of Laysan albatross, as well as other native plants and animals. With wingspans of about 80 inches, these large seabirds can create a significant hazard to aircraft sharing the skies over the airfield.

Since 1988, the missile range has been attempting to transplant adult albatrosses to other locations on Kauai to reduce potential flight hazards. The program had limited success since albatrosses each year typically return to the place they were born to raise their young. Although they don't begin mating until they are about 7

years old, albatrosses have been known to live more than 50 years.

The missile range faced a crisis in January when the albatrosses not only had already returned, but also laid eggs. With the eggs almost ready to hatch, the missile range staff worked with the Department of Agriculture's Animal and Plant Health Inspection Service and the staff of the Kauai National Wildlife Refuge Complex to find a solution rather than destroying the eggs.

The northern shore of Kauai, including Kilauea Point National Wildlife Refuge, is home to the largest Laysan albatross population on the main Hawaiian Islands. As with any nesting population, albatross each year lay some eggs that are infertile, spoiled or accidentally crushed. Since the parent birds return to a specific nest rather than a specific egg, the partners decided to relocate viable eggs from the missile range to Kilauea Point Refuge and surrounding nest sites to replace those that would never hatch.

"It was a race against time," Refuge Biologist Brenda Zaun said. "While my colleagues from the Department of Agriculture were gathering eggs, I candled the eggs to determine which ones were not viable." The Department of Agriculture biologists brought 28 eggs or newly hatched chicks to Zaun.

"We were able to find foster parents for every one," Zaun said. "All I thought was that if I didn't find a parent, this chick was going to die. That was just not acceptable." Every egg and chick was accepted by its surrogate parents and will now be imprinted to return to Kauai's north shore when they are old enough to mate.

As for the adult Laysan albatross at the missile range, with no chicks to feed, most have returned to the open sea until the breeding season next November. Partners are already planning how to avoid another crisis.

"We want more birds at Kilauea Point National Wildlife Refuge and along the north shore," said Zaun. "They're welcome, they're safe and they have a place to reproduce. This new program will help increase our population for years to come." ♦

Barbara Maxfield is chief of the Pacific Islands External Affairs Office.

Northeast Refuges Reach Half-Million-Acre Milestone

By Terri Edwards

In an area of the country better known for its growing population density than its open spaces for wildlife, the Fish and Wildlife Service recently acquired the half-millionth acre for national wildlife refuges within its 13-state Northeast Region.

The milestone was reached through the purchase of Wellford Farms, an 847-acre conservation easement in Richmond County, VA, for Rappahannock River Valley NWR, and was celebrated along with partners during an event held at the refuge on May 14.

Lauding landowners Cary and Carroll Wellford's "forward-thinking conservation ethic," Marvin Moriarty, the Service's Northeast Regional Director, announced the addition along with Congresswoman Jo Ann Davis (R-VA) and representatives from The Nature Conservancy, Trust for Public Land, The Conservation Fund, Chesapeake Bay Foundation and Virginia Department of Natural Resources.

"Acquiring 500,000 acres of land is no easy feat in this politically and geographically complex region, which spans the length of

the densely developed East Coast from Maine to Virginia," said Moriarty. "More than 70 years in the making, this achievement required nearly 6,000 real estate transactions and the dedication of many people in government and the conservation community, as well as conservation-minded companies and landowners."

In places like the Rappahannock River Valley, purchasing easements is an economical way to protect important wildlife habitats while landowners retain property rights for certain activities, such as farming, hunting and fishing.

Conservation groups such as The Nature Conservancy, Trust for Public Land, Chesapeake Bay Foundation and The Conservation Fund have been key collaborators in negotiating easements with landowners and advocating for other refuge acquisitions throughout the Northeast Region.

Established in 1996, Rappahannock River Valley Refuge now protects more than 7,300 acres of wetlands and other habitat along its namesake river and its tributaries — prime lands for waterfowl, bald eagles and other migratory birds. According to Refuge Manager Joe McCauley, the Service ultimately hopes to

acquire, in fee or in easement, a total of 20,000 acres from willing sellers in the valley. ♦

Terri Edwards is a public affairs specialist in External Affairs in the Fish and Wildlife Service's Northeast Regional Office.

Reaching a Milestone

The Migratory Bird Conservation Fund and the Land and Water Conservation Fund have provided a total of \$410 million for refuge land acquisition in the Northeast Region.

The Northeast Region now includes 71 national wildlife refuges, from the northern hardwood forests of Maine to the Great Dismal Swamp in southern Virginia.

More than 6 million people visit Northeast refuges each year to observe wildlife, hunt, fish, participate in environmental education programs, photograph wildlife or take part in interpretive programs.

Virginia refuges — including Rappahannock Valley River Refuge where the 500,000th acre milestone was achieved — make up 135,000 acres, or nearly 30 percent, of the Northeast Region's total acreage in the Refuge System.



The new 847-acre Wellford Farms easement for Rappahannock Valley River NWR, VA, brought the Northeast Region to its 500,000-acre mark for the Refuge System. (USFWS)

Rocky Mountain Bighorn Sheep Thriving on CMR

“Huge Opportunity”

By Jody Jones and Randy Matchett

The Charles M. Russell NWR, MT, has more Rocky Mountain bighorn sheep than at any time in the 24 years since stocking was initiated. The thriving population of 174 sheep — observed during the 2004 ground survey around the Mickey/Brandon Buttes and Iron Stake Ridge — meets a refuge goal to restore a species that once freely roamed the Missouri River Breaks.

Twenty-one people, 15 on foot and the others on horseback, took part in the December 2004 survey. Pending results from a subsequent survey, some sheep may be moved to expand the range and reduce the population in some areas to cut the risk of disease.

The refuge’s work with bighorns goes back to 1947, when 16 Rocky Mountain bighorn were brought from the Tarryall herd in Colorado and stocked in the Garfield County portion of CMR Refuge. Some estimated the population grew to as many as 260 sheep in 1955, although 38 sheep were the most ever observed.

That was in 1951. The last sheep from the herd was seen in 1960.

In May 1958, eight bighorn were moved from the Sun River herd in western Montana to the Two Calf Creek area on the refuge’s west end. In 1959, 13 more sheep were brought from the National Bison Range, MT, which provided another 22 sheep in 1961. Unfortunately, a catastrophic die-off in the winter of 1971 nearly wiped out the herd. By fall 1980, just 11 ewes remained.

Established in 1936 as the Fort Peck Game Range, CMR became a national wildlife refuge in 1976, with the mission to “...preserve, restore, and manage...a portion of the nationally significant Missouri River Breaks and associated ecosystems for optimum wildlife resources.” Reintroduction of Rocky Mountain bighorn sheep was specifically identified as an objective.

The refuge contains badlands-type sheep habitat, areas that were the native range of the now extinct Audubon bighorn sheep. Lewis and Clark encoun-

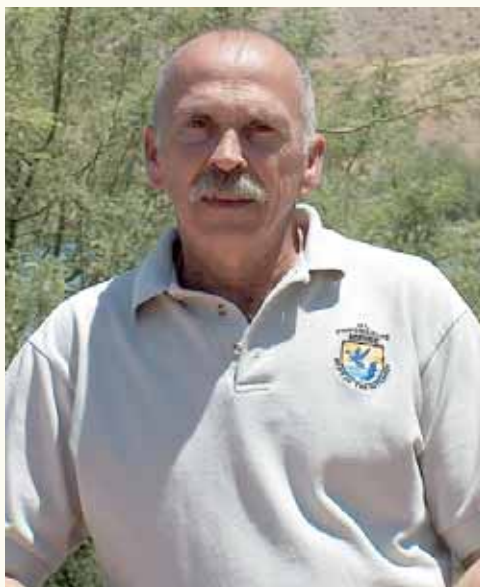
tered numerous bighorn in this area and commented on the exquisite table fare they provided. The last known “badlands bighorn” was probably shot in 1911 on land that is now part of CMR.

Another Try

Although the 1947 and 1958 efforts to reintroduce bighorns were mostly unsuccessful, the refuge has continued to work to establish a sustainable population. In cooperation with Montana Fish, Wildlife and Parks, 27 bighorn were trapped on the Sun River Game Range on March 8, 1980, and released in the Brandon Coulee area on CMR. The band had six rams, 17 ewes and four lambs.

Population growth, initially fast, slowed for many years, hovering around 100 animals from 1986-2002. During those years, the Iron Stake Ridge population increased slowly, while the Mickey/Brandon Buttes population hovered around 50-60 animals. Then, lamb production became exceptionally good on the buttes in 2003 and 2004, contributing to substantial population growth.

Dick Gilbert Honored by American Recreation Coalition



Richard “Dick” Gilbert, project leader at Bill Williams River NWR, AZ, since 1998, received the American Recreation Coalition’s Legends Award on June 8 for his dedication in promoting quality outdoor recreation.

Dick Gilbert, project leader at Bill Williams River NWR, AZ, started his career working summers at Erie NWR, PA, while attending college. In 1971, he was hired for a permanent position on the maintenance staff. He also was assistant refuge manager at Arrowwood NWR, ND and Havasu NWR, AZ, before serving as project leader at Seedsdakee NWR, WY; Waubay NWR, SD; and Cibola NWR, AZ. (USFWS)

Gilbert has been instrumental in planning and constructing multi-use outdoor recreation facilities for fishing, wildlife observation, interpretation and environmental education. These facilities include a paved trail, with several shade ramadas to promote wildlife watching and viewing of beautiful Lake Havasu, leading to three fishing docks with solar lighting, allowing the refuge to keep them open 24 hours a day.

The facilities — all entirely accessible to persons with disabilities — also offer interpretative displays on local ecology, water management and the area’s history. A solar-powered watering system provides irrigation for some 300 native plants that enhance the natural beauty of the



The thriving population of 174 Rocky Mountain bighorn sheep meets a goal of the Charles M. Russell NWR, MT, to restore a species that once freely roamed the Missouri River Breaks. (Milo Burcham)

Because suitable habitat is limited in the buttes area, some sheep may have to be moved to expand the population's range and reduce disease risks. The herd has finally achieved the objective of at least 160 sheep, with 76 tallied around the buttes during the 2004 survey — the most ever counted there — and 98 observed in the Iron Stakes Ridge area.

Sheep survey methodology has changed over the years. In the 1980s, surveys were done with an airplane or helicopter by both CMR and Montana Fish, Wildlife and Parks personnel. In the mid-1990s, ground surveys were begun during the early December rut and post-hunting season. Sex and age classifications are more precise and more sheep

tend to be seen from the ground compared to aerial surveys.

The Role of Hunting

The sheep population has been hunted since 1987, when two "either sex" permits were issued. Five permits were issued each year from 1988-1997, except in 1996 when seven were issued. Two population objectives were established: at least 160 observed sheep after the hunting season and an average harvested ram age of 7.5 years. The bighorn population has provided a harvest of 72 rams since 1987. The average age of the four rams harvested in 2004 was seven.

Elk and mule deer also inhabit the refuge and the surrounding area, as do

mountain lions, bobcats, coyotes and eagles. Refuge visitors enjoy viewing and photographing bighorn in a setting similar to the one that Lewis and Clark found 200 years ago. With continued cooperation, coordination and management, magnificent bighorn sheep will continue to expand and provide quality wildlife-based experiences for refuge visitors. ♦

Jody Jones is assistant refuge manager at the Sandy Creek Field Station, MT. Randy Matchett is the senior wildlife biologist at Charles M. Russell NWR, MT.

area. Additional facilities include an environmental education shelter and a canoe and kayak launch area.

The project was made possible by Gilbert's partnerships with a number of other organizations, including the Bureau of Land Management, Bureau of Reclamation, Arizona Game and Fish Department, the Metropolitan Water District of Southern California, the Central Arizona Water Conservation District, La Paz County, Anglers United and the Navy Seabees.

Presented during Great Outdoors Week, the Legends Award honors outstanding federal employees for significant contributions to the enhancement of the nation's outdoor recreation resources, facilities and experiences, especially on public lands. ♦

Foster Parents to a Fruit Bat

Guam Refuge Becomes Release Site for Orphan

By Susan Saul

Every individual makes a difference when a species' population is down to 150 animals. So Anne Brooke, wildlife biologist at Guam NWR, became foster parent to an orphaned Mariana fruit bat last winter.

Long-term surveys suggest that this species may disappear from Guam within 5-10 years. They are most abundant in forested lands on Andersen Air Force Base, but the only remaining colony has less than 100 individuals, and a small number of bats are scattered throughout the forests of northern Guam.

The young female Brooke fostered was discovered in June 2004 when it was about a month old, having been separated from her mother following a stretch of stormy weather. After several days calling for her mother, the pup was brought to Tino Aguon, acting chief of the Guam Division of Aquatic and Wildlife Resources, and received 24-hour care for the first few months of her life.

Brooke, who is a fruit bat expert and has worked with fruit bats in American Samoa and throughout Polynesia, began spending time observing and interacting with the orphaned bat in mid-October. Together, Brooke and Aguon soon

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FOCUS *...On Trails*

Places of Discovery

For boundless opportunities to discover nature in all its splendor, national wildlife refuges are unsurpassed. From all parts of the globe, 40 million visitors flock to nature's treasure troves each year, mostly for the chance to see huge concentrations of wildlife and birds.

Among America's most scenic panoramas, national wildlife refuges offer the nation's most amazing wildlife spectacles. Hunters and other wildlife enthusiasts marvel at millions of chattering mallards at Arkansas' White River Refuge. Adventure-seekers witness the awesome trek of caribou across the Arctic tundra. School children learn about migration as they watch tens of thousands of snow geese spiraling down from the sky at Missouri's Squaw Creek Refuge. Birders

from around the world flock to Aransas Refuge in Texas to catch a glimpse of stately endangered whooping cranes.

Across the prairie heartland, refuges like Wichita Mountains in Oklahoma, Fort Niobrara in Nebraska, Neal Smith in Iowa and Montana's National Bison Range draw many a hunter. To experience two natural phenomena at once, Cape May Refuge visitors venture to Delaware Bay in the summer, when millions of shorebirds descend to feed on horseshoe crabs as they come ashore to mate. For Hawaii tourists, a compelling attraction is Kilauea Point Refuge, where the ground is majestically bedded with an array of lush coastal plants and volcanic cliffs jut dramatically over the radiant, blue Pacific.

One of Anahuac Refuge's universally accessible trails includes more than 1,000 feet of walkway winding through a 1.5-acre butterfly and hummingbird landscape and native prairie demonstration area. Interpretive signs teach visitors the life histories of the Ruby-throated hummingbird and the refuge's primary butterfly species, and the importance of pollinators and native host and nectar-providing plants.
(Michele Whitbeck/USFWS)

Trails Are a Natural Road to Education, Community

Anahuac Refuge Opens All Habitat Types to Visitors

By Andy Loranger

Low-lying coastal marshes — tough to walk through and natural habitat for mosquitoes and other critters that bite — are far from the easiest places to develop a trail network, especially because a refuge must ensure compatibility with its purposes and the Refuge System's mission. All that did not deter the staff of the 34,300-acre Anahuac NWR, along the upper Texas Gulf Coast.

Today, the Anahuac Refuge trails network, designed to provide visitors of all ages and physical abilities with the chance to experience all of the refuge's natural wonders, combines walking, auto and paddling trails. It includes a variety of visitor facilities — from boardwalks and observation platforms to interpretive signs — to help visitors observe the Central Flyway





The National Wildlife Refuge System's extensive trails, boardwalks, observation decks, hunting blinds, fishing piers and boat launches encourage visitors to discover America's best wildlife spectacles, such as this magnificent display at Grays Harbor NWR, WA. (John and Karen Hollingsworth/USFWS)

Despite overwhelming odds and challenges, these special wildlife refuges will remain vibrant because they are safeguarded and expertly managed to be the most

productive habitats in America. The commitment to protect, grow, build and refine is born of Paul Kroegel's passion more than 100 years ago, yet steadily flourishing and

birds for which the refuge and the Texas Coast are renowned.

The trails give visitors access to each of the native habitat types found on the refuge — coastal marsh, coastal prairie and woodlands — and to intensively managed habitats, including moist soil and rice field units. “By taking advantage of existing infrastructure such as levees and roads in areas with a long history of visitor use, combined with strategic placement of new boardwalks and observation decks in wetland habitats, we were able to enhance the experience without compromising our conservation mission,” said Refuge Manager Kelly McDowell.

“Although the refuge has a fairly extensive system of trails and roads, the vast majority of the refuge remains as large, relatively undisturbed tracts,” he continued. “Development of the trail system and associated facilities has made the refuge more ‘visitor friendly,’ and perhaps most importantly, has really helped us educate folks about the importance of

these natural resources and the refuge's role in protecting them.”

Anahuac Refuge's trail system has four designated hiking trails, totaling just over 3.5 miles, including its first trail, which also may be its most famous: a short boardwalk and grassy trail through The Willows. This small woodland is internationally famous among birding enthusiasts as a place to observe colorful neotropical migrant songbirds after their 600-mile trans-Gulf migration each spring.

In 1998, the two-mile East Bay Bayou Trail was opened to the public. This trail meanders along East Bay Bayou through a narrow corridor of riparian woodlands, and outlets to moist soil and rice field units that offer spectacular viewing of waterfowl, shorebirds and wading birds.

Butterflies, Hummingbirds and More

One of the newest trails is a one-mile walking trail linking the visitor information station to The Willows. Universally accessible, the trail includes 1,081 feet of walkway that winds through a 1.5-acre

shared among the thousands of people who have chosen the National Wildlife Refuge System as their calling.

This issue of *Refuge Update* highlights the most fundamental pastime the nation's wildlife refuges have to offer: wildlife observation from the Refuge System's 2,500 miles of land and water trails. Refuge System employees and countless partners have created facilities that encourage people to get out on the land and enjoy the wildlife protected on nearly 100 million acres. ♦

butterfly and hummingbird landscape and native prairie demonstration area, connecting to a 1,173-foot boardwalk complete with observation decks and benches. Interpretive signs along the trail teach visitors the life histories of the Ruby-throated hummingbird and the refuge's primary butterfly species, and the importance of pollinators and native host and nectar-providing plants. Nearby, a one-mile hiking trail leads to an observation deck overlooking moist soil units.

The Refuge's four-mile auto tour route enables visitors to drive around Shoveler Pond, a 220-acre freshwater impoundment offering unparalleled opportunities to view and photograph alligators. In many cases, vehicles make ideal viewing platforms because many species are acclimated to slow traffic, allowing visitors close-up views of wildlife without disturbance. Opportunities to view waterfowl, shorebirds, purple gallinules, least and American bitterns and all six North American rail species draw visitors from around the world.

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A 76-foot boardwalk meandering through Mollie Beattie Bog in Vermont helps showcase one of the largest populations of rare bog sedge found in the state. Wildflower photographers come to the bog in search of the sundew; yellow, white or pink lady slippers; pitcher plants and other unique northern bog plants. (USFWS)

Bog Boardwalk Highlights Vermont's Natural Bounty

By Holly T. Gaboriault

Alive with one of the largest populations of the rare bog sedge in the northern forests of Vermont, the 76-acre Mollie Beattie Bog on the Nulhegan Basin Division of the Silvio O. Conte National Fish and Wildlife Refuge is enjoyed by hundreds of visitors each year, thanks to a 200-foot boardwalk recently renovated by refuge and Northeast Regional Office staff and several volunteers.

The boardwalk runs through the Mollie Beattie Bog, named for the first female director of the Fish and Wildlife Service and former deputy secretary of the

Refuge System Boasts 2,500 Miles of Trails

Known for its landscapes and its wildlife, the National Wildlife Refuge System also has more than 900 water and land trails that offer some of the best wildlife observation across the country.

To kickoff National Trails Day June 4, Interior Secretary Gale Norton announced the designation of 18 new National Recreation Trails on refuge lands, a way of recognizing their exemplary local and regional significance. These new designations bring the total number of refuges with National Recreation Trails to 34. Visit <http://www.americantrails.org/nationalrecreationtrails/> for the full listing.

A sampling of refuge trails offers a glimpse of what is available:

Florida: Hike the 42 miles of the Florida National Scenic Trail within St. Mark's

NWR, just 25 miles south of Tallahassee. About 3.5 miles of the trail are in the refuge's Wilderness Area. Located in Wakulla, Jefferson and Taylor counties, the refuge spans more than 43 miles of coastline. The historic St. Mark's lighthouse on beautiful Apalachee Bay attracts visitors from around the world, as do more than 300 species of birds, 98 of which nest on the refuge. In the spring, the refuge is a showcase of colors as songbirds migrate north through coastal oaks and shrubs, while the endangered least tern and red-cockaded woodpecker also nest there.

Georgia: The Okefenokee Wilderness National Recreational Canoe Trail in Okefenokee NWR takes paddlers into a world of alligators, cranes and cypress trees. Visitors can use elevated platforms along the marked trail to get the best views. Additionally, Swamp Island Drive

Vermont Agency of Natural Resources. In 1999, the Service purchased 26,000 acres from Champion International Paper Company to establish the Nulhegan Basin Division of the refuge, where the bog is located.

The area has since been recognized by the Vermont Nongame Heritage Program as a state-significant site, especially because it is among the most important black spruce woodland bogs in Vermont. It showcases one of the largest populations of rare bog sedge found in the state, and it's one of relatively few places to see the state-endangered spruce grouse, rare gray jay and Arctic jutta butterfly. Wildflower photographers come to the bog in search of the sundew; yellow, white or pink lady slippers; pitcher plants and other unique northern bog plants. Even moose and bear can be seen and photographed from the boardwalk.

It all started in 1997, when Champion International paid tribute to the late direc-

tor by dedicating the bog in her name as part of their "Special Places in the Forest" program. Champion installed the original interpretive boardwalk and later donated both the bog and boardwalk to the Service, prior to the purchase of the surrounding lands.

When the boardwalk was rehabilitated last year, many features were added to improve safety and accessibility, including handrails and viewing benches. Interpretive displays provide education on bog formation and the rare plants that inhabit the area. Because of its exceptional wildlife viewing and photography opportunities in such a unique area, the boardwalk at Mollie Beattie Bog has become a great invitation to visitors to get out on the land and enjoy Vermont's spectacular wildlife. ♦

Holly T. Gaboriault is a wildlife biologist at Silvio Conte National Fish and Wildlife Refuge, MA.

Even moose and bear can be seen and photographed from the boardwalk.

is an eight-mile driving, biking or walking loop. The swamp is one of the oldest and most well preserved freshwater areas in America and extends 38 miles north to south and 25 miles east to west. Its rich history is visible at Chesser Island Homestead, Billy's Island, Floyd's Island and Suwannee Canal.

Arizona: The Arivaca Creek and Arivaca Cienga trails on Buenos Aires NWR allow visitors to observe birds seen almost nowhere else in the continental United States. The Arivaca Cienga is a 1.25-mile loop over a boardwalk and path, a chance to see abundant bird life in a rare desert wetland. The Arivaca Creek Trail meanders one mile along a seasonal stream beneath towering cottonwoods. Both of these trails were designated National Recreation Trails by Secretary Norton in June.

Pennsylvania: The East Impoundment National Recreation Trail on John Heinz NWR at Tinicum is an outstanding place to see wildlife just outside Philadelphia.

Sitting one mile from the Philadelphia International Airport, the refuge has more than 10 miles of trails and boardwalks, as well as an observation tower and photo blinds that are extraordinary places to watch and photograph wildlife. The refuge has become a resting and feeding area for more than 300 species of birds, 85 of which nest here. Fox, deer, muskrat, turtles, fish, frogs and a wide variety of wildflowers and plants call the refuge home. Birdwatchers have recorded more than 300 species of birds in and around the refuge.

Oklahoma: To roam where the buffalo do, try the Dog Hollow Run National Recreation Trail on Wichita Mountains NWR, celebrating its centennial this year. Dog Hollow Run is just one of three hiking trails on the refuge. Besides seeing the shaggy icon of the American West, hikers might also encounter longhorn cat-



The Refuge System's 900 water and land trails offer some of the best wildlife observation. (USFWS)

tle, white tail deer, elk and wild turkeys. More than 22,400 acres of wildlife habitat are open for hiking, observing wildlife, photography and other recreational uses. More than 40 miles of paved roads bring visitors to wildlife observation areas.

continued pg 14

FOCUS ...On Trails

Great Meadows Volunteers Make Trails Dream a Reality



Volunteers with the Carlisle Trails Committee spent two days building a footbridge at Great Meadows NWR, MA. New improvements to the River Trail are giving refuge visitors better wildlife viewing opportunities through refuge wetlands. (Bert Willard)

When the Fish and Wildlife Service purchased the O'Rourke farm at Great Meadows NWR in Carlisle, MA, in 1999, it not only conserved outstanding migratory bird habitat but also acquired an extensive network of trails planned and maintained by the Carlisle Trails Committee.

Among these was the River Trail, which connects Great Meadows Refuge with adjacent town-owned lands set aside for conservation. The River Trail was originally constructed in

Natural Road to Education - from pg 9

One of the refuge's most interesting trails is not really a trail at all, but rather a small salty prairie meadow. The Yellow Rail Trail brings thousands of visitors to the refuge each year to see elusive yellow rails, a secretive marsh bird present on the refuge throughout winter and during spring migration. Volunteer naturalists lead interpretive Yellow Rail Walks, with participants slowly walking abreast through clumps of Gulf cordgrass in hopes of catching a brief glimpse of the bird.

Finally, an improved road, parking area and a wooden launching pier gives canoeists and kayakers access to a 3.8-mile segment of East Bay Bayou. This remote stretch of calm water beneath large overhanging hackberry, willow, water oak and green ash trees offers quiet and solitude, and great wildlife watching and freshwater fishing. Here, one can easily imagine a time not so long ago when sinewy bayous

wound their way through unaltered prairies, swamps and marshes.

Friends as the Foundation

Refuge trails and associated facilities fit well into Anahuac Refuge's designation as a featured site on the Great Texas Coastal Birding Trail, marketed even internationally by the Texas Parks and Wildlife Department. Through promotional and educational materials and signs at each site, the birding trail identifies important habitats and birding sites in the Upper, Mid- and Lower Texas Coast regions.

It's no accident that the refuge's trail system closely mirrors the growth of the Friends of Anahuac Refuge, established in 1996. The Friends organization has been the foundation, the impetus and in many cases the inspiration for many of the refuge's new visitor services programs and facilities, habitat restoration projects and expanded biological monitoring pro-

the 1970s and has seen continuous use since that time. While a previous upgrade of the trail system occurred in 1998, work remained along parts of the River Trail. The Carlisle Trails Committee had hoped for years to improve the River Trail and reduce impacts to wetlands along the trail route by constructing footbridges in areas that are often wet even after the Concord River returns to its banks.

That dream became a reality shortly after Eastern Massachusetts NWRC Project Manager Libby Herland, newly arrived at the complex, met with the committee in September 2003. A \$5,000 Service challenge grant was approved in 2004 to buy composite decking material, and the Service kicked in another \$3,000 for materials once the project was expanded to include two footbridges. The Town of Carlisle also contributed funds to purchase materials.

From Potential to Progress

Trail committee members designed the footbridges, applied for wetland permits

and wrote grant applications. Staff from the Carlisle Department of Public Works and Great Meadows Refuge hauled the materials to the building sites. And, in a great display of cooperation and muscle, 77 residents from the Town of Carlisle, ages five to 75, worked over two weekends to build two footbridges spanning 320 feet. All told, volunteers contributed more than 650 hours to the planning and construction of these footbridges. This work is in addition to the 40 hours a year trail committee members spend clearing falling trees and trimming brush along the trails.

Now, fragile wetland vegetation along the trail is protected year-round. The trail goes through a red maple swamp, past swamp white oaks, sweet pepperbush shrubs, skunk cabbage, jack-in-the-pulpits and sedges. Trail walkers can look into the marshlands along the banks of the Concord River, standing above grass level and observing edge habitat for migratory birds. The Trails Committee leads at least

two walks annually on the trail and cross-country ski tours in the winter.

“The dedication and focus of the Carlisle Trails Committee and the generous outpouring of support and enthusiasm from town residents was truly remarkable,” said Herland. “Lots of times people talk about doing things but rarely get around to accomplishing anything. The Carlisle Trails Committee not only talked the talk, but they walked the walk! This project did more to build goodwill between the refuge and the town than anything we could have done on our own.” At the heart of the Carlisle Trails Committee’s work is the belief that a network of open trails benefits both individuals and the town as a whole. Of course, the trails also give visitors a better appreciation for wildlife.

“At the Great Meadows Refuge, we have more support and understanding of our mission because we worked in partnership with the town and its residents, and that benefits all of us,” Herland said. ♦

grams. Most importantly, the Friends organization established an invaluable link to local communities, helping to foster many new partnerships. More than 300 volunteers contribute in excess of 10,000 hours annually, providing labor and in-kind services for many matching grant programs.

Today, the refuge, the habitat and wildlife it protects and its trail system and other visitor facilities are more valued by the community than ever before. That will only serve to ensure greater success in the future. ♦

Andy Loranger is project leader of the Texas Chenier Plains National Wildlife Refuge Complex.

A launching pier at Anahuac Refuge gives canoeists and kayakers access to a 3.8-mile segment of East Bay Bayou. This remote stretch of calm water beneath large overhanging hackberry, willow, water oak and green ash trees offers quiet and solitude, along with great wildlife watching and freshwater fishing. (Michele Whitbeck/USFWS)





The colorful palette of fallen leaves along Old Indian Trail at Tamarac NWR, MN, is a major draw for refuge visitors each fall. (Dominique Braud/USFWS)

Following in the Footsteps of the Ojibway

Tamarac Refuge Showcases Native American Traditions

By Kelly Blackledge

Hundreds of years ago, countless battles were fought over the precious resources on lands that are now part of Tamarac NWR in northern Minnesota. Native American Tribes, including the Ojibway and Dakota Sioux, knew the value of the lush beds of

manoomin (wild rice in Ojibway), majestic stands of sugar maple and abundant wild game and fish. Historical sites throughout Tamarac Refuge chronicle how well the land provided for its people.

The most significant historic landmark remaining today is Tamarac Refuge's two-mile Old Indian Trail, forged by Native Americans who made extensive treks in their quest for maple syrup and wild rice. Whether refuge visitors come to revel at the sight of warblers, nesting swans and eagles, or hunt ruffed grouse, deer and waterfowl, they gain a new perspective on their outdoor experiences by contemplating the value of Minnesota's bountiful natural resources to Native Americans.

Early in the spring, before the wildflowers even peeked through the soil, the Ojibway began their trek to sugarbush, a maple sugar camp on the north end of Tamarac Lake. It was at least a two-day walk, made by the whole family. The mighty maples were gashed into the sapwood and the maple sap was collected in birch bark containers placed at the base of the trees. A treasured seasoning, the syrup was often traded with early settlers. Today,

System boasts 25 Miles – from pg 11

Alaska: Kenai NWR, southeast of Anchorage, is an Alaska in miniature in its diversity of wildlife. It offers two National Recreation Canoe Trails — the Swan Lake and Swanson River Canoe routes — that combine land and water routes in the Dave Spencer Unit of the Kenai Wilderness. The refuge is also home to brown and black bears, caribou, Dall sheep, mountain goats, wolves, lynx, wolverines, eagles and thousands of shorebirds and waterfowl. The refuge was originally established to protect the Alaska-Yukon moose, which still roams the land.

Minnesota: Explore the 7.5 miles of the trail system on Rydell NWR, which pro-

vides a year-round outdoor experience for anyone with accessibility needs. It has five distinct loops, of which five miles are paved. All 7.5 miles are sloped to ADA (Americans with Disabilities Act) standards, with periodic trail shelters for rest stops. Trails are opened to hiking, biking and cross-country skiing. Golf cart tours along the trails are available for persons with disabilities. The trail system takes visitors to a Sundew Bog, named for the insect-eating Round leafed Sundew, one of the regionally rare plants sheltered in this peat bog. Rydell NWR trails also joined the family of over 900 National Recreational Trails in June. ♦

hikers look for swollen bases of the large maple trees along the ancient path, a sign of historic tapping of the trees.

In late summer, Native Americans traveled the trail again, often for several days, to reach wild rice camps. During *manoo-minike-giizis* (the moon of the wild rice), fallen foliage from the maples and oaks create an amazing palette of color along the trail. One branch of the trail followed along the Ottertail River to a crossing and campground at the outlet of Rice Lake. Wigwams covered in birch bark were built for protection from the weather for those cleaning, drying and parching the rice. Most of the maple forests in the vicinity of Tamarac Lake were used by the Ojibway until the 1930s, and Tribal members still harvest wild rice in the traditional way, using canoes.

Whether visitors come to Tamarac Refuge for hiking, hunting, wildlife watching or just to take in its scenic beauty, they come away with a new perspective and appreciation for nature by following in the footsteps of the Ojibway. ♦

Kelly Blackledge is senior park ranger at Tamarac NWR, MN.



The local Ojibway people still canoe through Tamarac Refuge's lush rice beds much as their ancestors did for centuries. (Dominique Braud/USFWS)

*The Refuge System
has more than 900
water and land trails.*

From the Director – from pg 2

As we work to implement the Improvement Act and expand knowledge and understanding of the Refuge System, we're facing new challenges. I'm truly impressed by the work that Upper Mississippi River National Wildlife Refuge Manager Don Hultman and his district managers are doing to craft the Comprehensive Conservation Plan for the nation's most visited wildlife refuge. Over the last few months, they've hosted 11 public information meetings and a series of workshops that have involved more than 2,500 people. They're giving refuge visitors' concerns full weight as they work to develop a plan that will meet the needs of wildlife and people.

I know the good work being done at that refuge is repeated time and again at refuges across the country. You're doing great work, and helping other Americans see and appreciate the National Wildlife Refuge System is one of your greatest contributions to the future of conservation.

— Matt Hogan

Around the Refuge System

Oregon: Pacific Region employees debuted a specially decorated Sprinter van and exhibit, including a tent, interpretive panels and interactive presentation areas, at Tualatin River NWR's Songbird Festival on May 14, featuring fish and wildlife related to the Lewis and Clark expedition. Matt How in Visitor

who provided additional areas for 20 youth to hunt within the Lower Minnesota River Valley. At Deep Fork Refuge, the Friends of the Deep Fork NWR also partnered with the refuge and the turkey federation to make the hunt a success in its first year — in fact, five of six youngsters harvested a turkey.

North Carolina: Pea Island NWR debuted its virtual online education program in April, attracting more than 5,000 students including classrooms in 42 states, two Canadian provinces and the United Kingdom. "School children and others from all over the country can embark on a virtual visit to Pea Island Refuge and learn about sea turtle conservation efforts," said Wildlife Interpretive Specialist Ann Marie Salewski. "Students who may never have the opportunity to visit the ocean

moose with VHF and GPS radio-collars in just over two days in April. The Kwethluk Moose Project is focused on a moose population that has been struggling to increase in the lower Kuskokwim River and its tributaries despite abundant habitat. This study is critical since the refuge, the fish and game department and local villages agreed to a moratorium on moose hunting starting in 2004. The project entails monitoring moose colonization, movements, habitat use and population expansion in areas that have good habitat but few moose. Establishing a healthy moose population on the lower Kuskokwim River and gaining an understanding of the colonization process will greatly enhance the refuge's management program and eventually improve subsistence hunting.

Kenai NWR forged an agreement with the Alaska Office of History and Archaeology to record and interpret the remains of more than 130 historic cabins scattered across the refuge. Through the partnership, the refuge will not only be able to restore useable cabins but also go

Several thousand students from 42 states, two Canadian provinces and the United Kingdom embarked on a recent e-tour of Pea Island NWR, NC, as part of a new online education program. (Ryan Hagerty/USFWS)



The Pacific Region's specially designed Sprinter van serves as a traveling showcase for Northwest wildlife, part of the Fish and Wildlife Service's efforts to highlight the natural bounty Lewis and Clark experienced on their trek across the country 200 years ago. (Matt How/USFWS)

Services designed the vinyl wrap for the van and supervised the contracted exhibit design and fabrication. AmeriCorps Volunteer Heather Becker, along with several Service employees, managed the exhibit and conducted interpretive presentations for 750 people who attended the festival. The van and exhibit will make more rounds at Lewis and Clark Bicentennial commemorative events in Idaho, Oregon and Washington during 2005-2006.

Minnesota and Oklahoma: Minnesota Valley NWR and Deep Fork NWR, OK, partnered with the National Wild Turkey Federation in April to host special spring turkey hunts, pairing youngsters with adult mentors to help them make the most out of their experience. At Minnesota Valley Refuge, the partnership also included the state department of natural resources and private landowners

will be able to see the beauty of Pea Island while learning the important role refuges play in wildlife conservation." In addition to a virtual visit to the refuge, the education program included an eField Trip Journal and the opportunity to post questions and join in a live interactive Web chat with experts.

Alaska: With help from the Kwethluk Village Council, the Alaska Department of Fish and Game and a lucky break in the weather, Yukon Delta Refuge collared 25



the extra step to record all other remains to foster understanding and appreciation for the refuge's historic resources. Only about a dozen cabins are still standing, but they all record the activities of Dena'ina Athabascan, and Euro-American homesteaders, trappers, hunters, miners and assorted dreamers throughout the late 19th and early 20th centuries. In some cases, the belongings of the builders were still present, providing a unique window into the lives of these individuals and the time period. Archaeologists will record every known cabin and remains and then document the history of each, including compiling old photographs and documents, as well as personal interviews, to tell the story of the Euro-American settlement of the Kenai Peninsula and the opening of Alaskan Frontier.

Florida: Thanks to a Nature of Learning program administered by the National Fish and Wildlife Foundation, every classroom at Pelican Island Elementary School had the chance to visit their namesake refuge this spring and take part in a stewardship project on the refuge. A \$5,000 startup grant enabled the school to hire an environmental educator, fund class visits to Centennial Trail and the special observation deck that allows viewing of the Pelican Island rookery and launch a project for the students to create a native butterfly garden.

Across the state at St. Marks NWR, college students from Michigan and Indiana participating in the National Alternative Spring Break Program worked with refuge maintenance staff to construct a new nest platform for breeding least terns. The students also removed six miles of barbed wire fence along the old Aucilla Tram road, picked up garbage along the freshly burned dikes and trimmed the Mounds hiking trail. The Alternative Spring Break Program, begun in 1991, now involves students from 123 campuses nationwide — an estimated 38,000 this year — seeking experience serving in communities on a host of social issues.

Oklahoma: More than 100 elementary school students inspired by the unique beauty of selenite crystals they studied during a trip to Salt Plains NWR successfully petitioned the state legislature to make it the official state crystal. The unique hourglass-shaped, sand-inclusioned selenite crystals can be found only on the Salt Plains Refuge. The students' efforts were bolstered by a valuable connection — one of their mothers is State Senator Kathleen Wilcoxon, who drafted the legislation. "I'm so impressed with these children," Senator Wilcoxon said, "They had done their research and found that 15 states already have an official gemstone." The bill passed the legislature and was signed by Oklahoma Governor Brad Henry in April. "What an incredible lesson for these students," Wilcoxon said, "They've learned about geology, geography, research and state government."

Washington: In April, a dozen volunteers — refuge neighbors, Friends group members and others — helped Willapa NWR combat an infestation of gorse — a spiny weed that can grow up to 10 feet tall — by pulling up thousands of gorse seedlings before the plants became so large they would require special equipment to remove. Not only did the volunteers keep a popular trail open on the Leadbetter Unit, where the extremely flammable gorse is a major problem, but they also helped reduce the risk of wildfires. Their efforts were covered on the front page of the local newspaper, the *Chinook Observer*, and were so successful that a second, larger effort is planned for this summer. "We've learned that ever since the organized effort, several of the volunteers have continued to go up to the trail to help keep the gorse in check," said Outdoor Recreation Planner Kristine Massin.

Arizona: Fourteen Sierra Club members traveled from across the U.S. to Buenos Aires NWR in March to donate a week's worth of vital repair and restoration work. Volunteers removed 14,000 linear feet of barbed wire fence, 160 feet of hog wire and 235 fence posts left over from ranching operations in Brown Canyon and grassland sections of the refuge. The crew also repaired flood damage on Brown Canyon Road at three creek fords, cut brush to reduce fire hazard around buildings and improved 2,500 feet of hiking trails. This is the ninth Sierra Club work crew in five years to donate their time and effort to the refuge.



Schoolchildren's experience during a field trip to Salt Plains NWR to study selenite crystals inspired them to petition the legislature to have selenite recognized as the official State Crystal of Oklahoma. (USFWS)

Fire Preparedness Pays Off for Puerto Rican Refuges

By Catherine J. Hibbard

In March, Southern Area Coordination Center Meteorologist Kevin Scasny delivered some sobering news to the Fish and Wildlife Service's Southeast Region Fire Coordinator Roger Boykin about the upcoming fire season: Puerto Rico was having the second driest spring in 50 years. The drought and an abundance of dry grass produced by heavy rains the previous summer and fall suggested the fire season could be red hot.

Primed with this information, Boykin developed a regional "severity funding" package. Typically, fire coordinators prepare for the fire season using funds allocated for preparedness. Faced with abnormally high fire activity or forecasts of such, the Service can provide severity funding for extraordinary preparedness activities.

From January 1-March 29, Puerto Rico had 5,100 fires, more than triple the number last year. The Refuge System Branch of Fire Management approved \$270,000 in national severity funding over three two-week periods, allowing the Regional Fire Office to mobilize resources for Cabo Rojo, Culebra and Vieques refuges. An incident commander (IC) and IC-trainee from the Service, and 6-10 emergency firefighters on temporary hire from local fire departments, were dispatched to each refuge. From mid-March through April alone, more than 50 wildfires blazed. All were contained to less than 100 acres, thanks to the severity funding.

The response was facilitated by Service grants from the Rural Fire Assistance (RFA) program to five volunteer fire departments in Puerto Rico. RFA grants have been available since 2001 to volunteer fire departments in small, rural communities near national wildlife refuges, fish hatcheries and waterfowl production areas. The grants allow the department



Around the same time as the Culebra fire, another occurred on the Island of Vieques in Puerto Rico, threatening the refuge and the surrounding community. The local fire department and Fish and Wildlife Service employees suppressed the fire. (Josh O'Conner)

to acquire wildland firefighting equipment, supplies and training.

In Puerto Rico, the grants helped train 100 volunteers in wildland fire behavior, fire suppression and safety — especially important because the three refuges do not have fire personnel on staff. They depend on the local fire departments for initial attack of fires.

The events in Puerto Rico last spring exemplify how fire season forecasting can be used effectively to allocate funds and efforts where they are needed most. In the Southwest, for example, below normal potential for wildland fire was predicted for high elevations, while above normal potential was forecast for lower elevations because greater-than-expected precipitation produced abundant vegetation growth that will dry out in the summer and provide fuel for wildfires.

"This isn't typical," said Rick Ochoa, fire weather program manager at the National Interagency Fire Center in Boise, ID. "Normally the higher elevations are more at risk. So we had an opportunity here to focus on prevention efforts at lower elevations." Ochoa's program also predicts above normal potential for wildfires in Florida and the Pacific Northwest, and a normal to below normal potential in the Northeast.

For more information on the national fire weather outlook, visit www.nifc.gov and click on "Current Fire Information." ♦

Catherine J. Hibbard is a refuge program specialist in the Fish and Wildlife Service's Northeast Regional Office.

Predicting Fire Seasons

Rick Ochoa, fire weather program manager at the National Interagency Fire Center in Boise, ID, identified three factors that help develop fire season forecasts.

Weather and related factors: Long-range forecasts from the National Weather Service and other forecasting agencies evaluate rainfall history (available for several years in some areas), snow pack and temperature patterns. The combination of very low snow packs and continuing drought escalated the risk of wildfires in the Northwest this year.

Fuel moisture/fire danger: The growth of grass and brush at low elevations after a wet winter in the Southwest increased the supply of fuel and the wildfire threat. Insect-killed spruce trees in the western Kenai Peninsula of Alaska also pose a threat for high fire potential. Various instruments and computer models are used to determine these conditions.

Human Resources: Availability of personnel and equipment for suppressing wildland fires may be affected by such weather events as monsoon season. Fire season forecasters consider such events to predict what resources will be available and where they will be located.

Ivory Billed Woodpecker – from pg 1

The recovery effort will cover the bird's historic range, focusing on the Big Woods corridor of central Arkansas, eastern Texas' Big Thicket, Louisiana, Mississippi, Alabama, Florida, southern Georgia and the Carolinas.

From Extinction to Recovery

The largest woodpecker in the United States, the Ivory-billed woodpecker is the second largest in the world and had been one of six species of birds in North America thought to be extinct. It once nested in bottomland swamps and adjacent pine forests throughout the Southeastern United States and Cuba. In this country, the bird ranged from the coastal plain of North and South Carolina, Georgia, Florida, large portions of Alabama, Mississippi and Arkansas, Louisiana, eastern Texas, western Tennessee, and small areas of Illinois, Kentucky, Oklahoma and Missouri. By the late 1800s, the Ivory-billed woodpecker was no longer found in Oklahoma, Missouri, Illinois or Kentucky.

News of the bird's rediscovery came from the Interior Department, the Cornell Lab of Ornithology, The Nature Conservancy, the Arkansas Game and Fish Commission



Trying to catch a glimpse, crew members waded in waist-deep water and mounted tree perches. (Mark Godfrey/TNC)

Ivory-Billed Woodpecker Recovery Team Executive Committee

- Sam Hamilton, Southeast Regional Director of the Fish and Wildlife Service and chair of the recovery team's executive committee
- John Bridgeland, President and CEO, Civic Enterprises, and recently assistant to the President of the United States and the first Director of the USA Freedom Corps
- Brig. General Robert Crear, District Engineer, U.S. Army Corps of Engineers
- Nancy Delamar, Director of External Affairs, The Nature Conservancy's south central division
- Kirk Duppes, board member, National Fish and Wildlife Foundation
- Dr. John Fitzpatrick, Director, Cornell University Laboratory of Ornithology and co-leader of the search effort in Arkansas
- Scott Henderson, Director, Arkansas Game and Fish Commission
- Dr. Peter Roussopoulos, Director, Forest Service's southern research station
- Dr. James Tate, Science Advisor, Interior Secretary Gale Norton
- Larry Wiseman, President and CEO, American Forest Foundation

and other members of the Big Woods Conservation Partnership on April 28, when the groups announced they had collected evidence of the bird's existence at Cache River Refuge. Their primary evidence consists of video footage, while secondary evidence consists of seven eyewitness sightings and audio. Recordings of the bird's distinctive double rap and call are still under analysis. After conducting its own peer reviews of the evidence, the journal *Science* published the groups' findings on its Web site on April 28, following up with a feature in the June 3 issue of the journal.

Following credible reports of sightings of the bird, a multi-partner team spent more than a year searching in the Big Woods of Arkansas. The evidence collected led scientists to conclude that the Ivory-billed woodpecker is now present in that area.

The team was led by Dr. John Fitzpatrick, director of the Cornell Laboratory of Ornithology, and Scott Simon, Arkansas state director of The Nature Conservancy, with assistance from the Service, Arkansas Game and Fish Commission and the Arkansas Natural Heritage Commission.

Given the excitement over the woodpecker's return, Cache River Refuge is taking steps to ensure the bird's protection while allowing birders to share in the joy of this momentous discovery. While determining the appropriate level of use, the refuge has established a 5,000-acre managed access area within the 65,000-acre refuge. Five refuge access points and maps are available for visitors hoping to catch a glimpse of the woodpecker. The refuge is working with partners to provide public facilities to make viewing easier. ♦

Leadership that Makes a Difference

Skippy Reeves Retires from Okefenokee Refuge



Okefenokee Refuge Manager Skippy Reeves retired in June after 20 years with the Fish and Wildlife Service. He earned respect from peers and partners alike for bringing people together to reach consensus on challenging management issues. (USFWS)

By Shawn Gillette

Skippy Reeves, project leader of the Okefenokee and Banks Lake NWRs, GA, retired June 30, leaving an indelible legacy of effective partnerships and leadership.

Since his boyhood days hunting and fishing in the Piedmont hills around Macon, GA, Reeves aspired to be outdoors. His Forestry and Wildlife Management degree from the University of Georgia focused his career pursuit, leading to positions with the Georgia Department of Natural Resources, the U.S. Army Corps of Engineers and the Cooperative Extension Unit of Alabama.

His 20-year career with the Fish and Wildlife Service included assignments at St. Marks NWR, FL, and the Mississippi Sandhill Crane NWR. In 1987, Reeves transferred to Atlanta, where he coordinated the Regional Fire Program for southeastern refuges. He became refuge manager at Okefenokee in 1993.

Reeves' approach to team-building transcends the refuge to include numerous partners. "Some of the issues facing Okefenokee also affect other lands down stream," said Kirk Webster, deputy executive director of the Suwannee River Water Management District in Florida. "Skippy recognizes that management of a natural system means going beyond political and state boundaries."

When the DuPont Mining Company proposed establishing a strip mine on lands immediately adjacent to Okefenokee Refuge in 1997, Reeves' collaborative management style was effective in bringing about a resolution, but he is quick to point out that this conservation victory would not have been accomplished without assistance from others. "Never in our wildest dreams could we have hoped to do this without the help of the local community, private landowners and businesses, The Conservation Fund, and of course, the DuPont Mining Company itself," Reeves said. "We made a difference because we worked together."

Additionally, Reeves worked with representatives of the various water resource agencies that manage the Suwannee River, which originates within Okefenokee Refuge. Together, they formed the Suwannee Basin Interagency Alliance, which brought together a coalition of Georgia and Florida agencies to collaborate on issues affecting the river and water quality.

"Skippy recognizes the value of an individual," added Webster. "He meets with individuals from all sides of an issue and successfully brings them together in a collaborative process for problem-solving. It takes a unique personality to accomplish this, and Skippy possesses that in abundance."

Working Collaboratively

When fire within the refuge threatened valuable private timber resources outside the refuge, Skippy worked with the vari-

ous private landowners to form the Greater Okefenokee Association of Landowners (GOAL) in 1994. GOAL members worked together to form a coordinated fire suppression system and establish measures that aid in the prevention of future wildland fires. GOAL continues to be active today, and cooperative efforts have expanded to include endangered species surveys and joint maintenance projects.

"Skippy has the ability to step back and see an issue from all sides, not just the government side," said Wesley Langdale, vice president of the Langdale Corporation. "Then he works with all viewpoints involved to reach a solution that works for everybody. In the end, it's the team that gets the credit for the successes, but Skippy deserves a large part of it."

The list of Reeves' honors is long and distinguished, including an On-the-Spot and other awards from the Fish and Wildlife Service for resolving sensitive issues related to the DuPont Mining proposal in 1997, a commendation award from the Governor of Georgia for his work with the SRWMD, an Interior Department Superior Service Award for outstanding leadership and outreach in 2000, a Unit Award for Excellence in Service in recognition of his management of the Blackjack Bay Complex Fire, and most recently the Wildlife Conservationist of the Year award from the National Wildlife Federation.

"Over the years, I've learned how important it is to get all viewpoints on an issue and then help people realize their common interests and go from there," said Reeves. "That has helped us get through many a challenge at Okefenokee, at the same time helping the refuge reach its potential as an internationally acclaimed treasure." ♦

Shawn Gillette is a refuge ranger at Okefenokee and Banks Lakes NWRs, GA.

Hopper Mountain Refuge Shares Expertise with Japanese

By Denise Stockton

Hopper Mountain NWRC, CA, hosted three members of Japan's fledging white crested ibis recovery program for a week in March, giving them a firsthand look at the captive breeding work of the California Condor Recovery Program, which is managed at the refuge. The visit launched an active working relationship.

Following the visit, Hopper Mountain Refuge staff sent the Japanese team California condor release protocols and put them in touch with California Central Valley rice farmers, who provide wetland habitat for wildlife by using innovative land management practices.

The white crested ibis, known as the Toki in Japanese and extinct in the wild in that country, is a bird with significant historical and cultural value to the Japanese. The Toki Project, considered by Japan's Ministry of the Environment as one of that country's most important conservation efforts, is currently in a captive breeding phase at the Sado Toki Conservation Center, located on Sado Island off the western coast of Japan. The center has produced more than 50 birds from just three founding birds obtained from China. Scientists hope to reintroduce birds into the wild on Sado Island in a couple of years.

Like the Toki, the California condor, also of cultural and historical value, nearly became extinct. Both species declined from loss of habitat, pesticide use, being killed for their feathers or because they were thought to be responsible for the loss of crops and livestock. Many of these threats can be ameliorated through public education. The Condor Program has had an active outreach program since its beginning.

Realizing the importance of education, the Toki Project team was eager to discuss the public perceptions and resulting outreach efforts that affect the Condor Program. One educational challenge for Toki reintroduction is Japanese rice farm-



Known as the Toki in Japanese, the white crested ibis is extinct in the wild in Japan, where the Ministry of the Environment is working to help the bird make a comeback. Hopper Mountain Refuge, CA, is advising the Japanese based on efforts to recover the California condor. (Japan Ministry of the Environment)

ers' belief that the birds damage rice seedlings.

The Japanese delegation met with various Condor Program partners, saw condor field reintroduction around the Hopper Mountain Refuge and visited breeding facilities at the Los Angeles Zoo, San Diego Wild Animal Park and the San Diego Zoo. The team took a tour of the Western Foundation of Vertebrate Zoology, another Condor Program partner and site of the world's largest collection of bird eggs. The Japanese delegation included Junko Chida, chief of the ministry's wildlife protection section, Niigata Wildlife Office; Kumiko Yoneda, senior research scientist with the Japan Wildlife Research Center; and Ichiro Aoyama, a raptor specialist.

"Reintroducing species that have gone extinct in the wild is a complicated process and the Condor Program and Toki Project

share some of the same challenges," said Project Leader Marc Weitzel. "We hope that our experiences through trial and error can help the Japanese. We look forward to supporting the Toki Project as they transition to the reintroduction phase of recovery." ♦

Denise Stockton is an outdoor recreation planner at Hopper Mountain NWRC, CA.

Secretary Norton Visits Blackwater Refuge for Earth Day

Interior Secretary Gale Norton made Blackwater NWR, MD, one of her Earth Day stopovers on April 18. Working alongside volunteers, the Secretary and Congressman Wayne Gilchrest (R-MD) planted marsh vegetation as part of an ongoing wetlands restoration effort.

Responding to decades of wetlands degradation, the Fish and Wildlife Service and partners are developing plans to restore 8,000 acres of refuge wetlands in the Blackwater River watershed, hoping the area can once again live up to its common moniker as the “Everglades of the North.”

Secretary Norton also toured part of a 900-acre hazardous fuels reduction project at the refuge made possible by the Healthy Forests Restoration Act signed by President Bush in 2003. The project reduced excessive fuel loads to reduce the risk of uncontrolled wildfires. In addition, she participated in the reforestation of a 55-acre forested wetland, an area damaged by a tornado in 2001 — a project supported by a 2003 Interior Department Cooperative Conservation Initiative Grant.

Broad and successful partnerships made Blackwater Refuge an appealing site for the Secretary’s tour, with longstanding conservation projects supported by groups ranging from the Chesapeake Bay Foundation to the Boy Scouts of America, from the U.S. Army Corps of Engineers to Ducks Unlimited.

“We have a big job to do here at Blackwater and in the surrounding community to help these forested wetlands and marshes live up to their potential as world-class habitat,” said Glenn Carowan, project leader for the Chesapeake Marshlands NWR. “We’re fortunate to have a lot of partners and conservation-minded citizens here in the Chesapeake Bay area.”

Bringing Back the Marsh

Blackwater Refuge, established in 1933 and now comprising more than 27,000

acres, is designated a Wetland of International Importance under the Ramsar Convention and one of The Nature Conservancy’s “Last Great Places,” as well as a priority wetland area under the North American Waterfowl Management Plan. Even with this recognition and support, the challenges can be overwhelming. According to Carowan, the refuge has lost 8,000 acres of highly productive marshland over the last several decades due to rising sea levels, subsidence, erosion, saltwater intrusion and invasive species.

“We’re still losing 500-1,000 acres of wetlands each year,” said Carowan, “but we’re hopeful that some of our new efforts are going to help us make a turnaround.”

Carowan was referring to two experimental wetlands restoration efforts that involved using clean sediment material from another area of the refuge to restore 12 acres in the 1980s and another 15 acres in 2003. These experimental efforts involved the U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, Maryland Department of Natural Resources, National Fish and Wildlife Foundation, National Aquarium in Baltimore, Friends of Blackwater and Ducks Unlimited. Restoration was highly successful.

Carowan and a host of partners are working with the Corps of Engineers on an effort to restore 8,000 acres of Blackwater marshlands using clean dredge material from Maryland shipping channels, returning what are now lakes back to marshlands. The Corps is currently reviewing public comments on a draft



Interior Secretary Norton celebrated Earth Day by working alongside refuge volunteers planting vegetation in one of Blackwater Refuge's many forested wetlands. (Tami A. Heilemann/DOI)

Environmental Impact Statement to use clean dredged material from Port of Baltimore shipping channels to help fill in open water at Blackwater Refuge and allow revegetation for marshlands restoration.

The EIS is just one hurdle, however, because even if Blackwater is chosen as one of the sites for dredge placement, a separate feasibility study will need to be completed before the work can commence. The good news is non-federal partners have indicated they may be willing to share the \$5 million needed for the Corps to complete the feasibility study.

“It will be a long road to make this happen, but in the end, when we see the marsh and the birds return, it will be worth it,” said Carowan. ♦

Scholarships Support Coral Reef Conservation

By Steve Farrell

The National Wildlife Refuge System welcomed two recipients of the Second Annual Governor Tauese P.F. Sunia Memorial Coral Reef Conservation Summer Internship Awards in June. The internships support programs to improve management of 14 refuges with coral reef ecosystem resources, including coral reefs, associated hard bottom habitats, seagrass meadows, mangrove forests and estuaries.

Kassandra Cervený, a Daytona Beach, FL, native and graduate student attending the University of Puerto Rico, and Tiffany Robinson, a Honolulu, HI, native and undergraduate attending Western Washington University in Bellingham, are the Sunia Scholarship recipients.

Led by the Refuge System's Marine Program Specialist, Andrew Gude, the Sunia scholars will spend the summer analyzing coral reef resource issues from the Refuge System's headquarters in Arlington, VA.

Cervený will investigate the history of Navassa Island NWR and produce a white paper summarizing the marine biology, geography, natural history and human use of the Caribbean refuge. The

white paper will include proposed management strategies and foster cooperative conservation of this spectacular coral reef ecosystem.

Robinson will develop a comprehensive analysis of the Refuge System's coral reef management programs. She will compile and analyze the coral reef ecosystem resources and management activities for all refuges with coral reefs and associated habitats. The analysis will provide information about natural and cultural resources and challenges, in addition to marine recreation opportunities for use in education materials.

The Department of the Interior Office of Insular Affairs funds the Sunia Scholarship. Awards are based on professional experience, academic background, an essay and letters of recommendation. The selection committee matches candidates' aspirations with the coral reef conservation and management priorities of the U.S. Coral Reef Task Force. ♦

Steve Farrell is a communications specialist in the Division of Visitor Services and Communications in Refuge System Headquarters.



Kassandra Cervený



Tiffany Robinson

Refuge System's Coral Reefs

- 🌿 The 14 national wildlife refuges that have coral reef ecosystems within their boundaries are considered the crown jewels of the U.S. coral holdings and total about 3 million acres.
- 🌿 Among the nation's most remote and pristine possessions, the "coral reef" refuges include, for example, the Remote Pacific Islands Complex encompassing Baker Island, Howland Island, Jarvis Island refuges, the atolls of Palmyra,

Johnston and Rose Atolls, and Kingman Reef, and Key Deer, Key West and Great White Heron refuges in the lower Florida Keys.

- 🌿 The Pacific, Hawaii and Navassa national wildlife refuges are natural laboratory ecosystems that serve as benchmarks against which other fished and developed areas are compared for coral health and predator and species assemblages.

Chief's Corner – from pg 2

when George Benson, the reservation warden at Malheur National Wildlife Refuge in Oregon, strapped his canoe to his motorcycle's sidecar, not only was he headed for one of our water trails, but he also was probably among the first to use an auto trail.

Early in my career, I had the chance to play an active role in the development of the national trails program. My experience in the purchase and acquisition of parts of the Appalachian National Scenic Trail, which runs through Wallkill River National Wildlife Refuge in New Jersey, helped me appreciate the value of trails. Today, the Fish and Wildlife Service has special interest in trails because they bring people closer to their lands through boardwalks, auto trails, accessible trails and other facility enhancements. For the first time, federal legislation will allow the Refuge System to spend transportation money in FY 2006 for the maintenance and improvement of our trails network.

The decision comes none too soon. Americans, conscious of their health and enamored of their lands, don their hiking boots, pack their tackle boxes, round up the family and take to the trails. The Refuge System stands ready to welcome and orient visitors who find our trails the best way to meet the world of wildlife.

Foster Parents – from pg 7

realized that the young bat could be reintroduced into its natural environment, and began to work with the Fish and Wildlife Service's Ecological Services Office in Honolulu to have it transferred into the Service's care.

Brooke and two volunteers, Jennifer Farley and Dusty Janecke, constructed a large cage with room for the bat to fly and placed it in a sheltered area near a cliff face on a part of Guam NWR that is closed to public access. In late December, Brooke and her team took over as the bat's foster parents.

The team visited the bat several times a day and fed her a variety of native fruits, weaning her off the apples and oranges she had grown accustomed to eating. Brooke encouraged the young bat to fly through activities designed to strengthen her wings, and even introduced her to a brown tree snake, a predator of young bats. Feeling rain and wind and seeing the world at night were all new experiences for the young bat.

In late January, the team decided it was time for the bat to strike out on her own.



Wildlife Biologist Anne Brooke, a fruit bat expert, holds an orphaned Mariana fruit bat that she helped raise and reintroduce to the wild. (Matt Brown/USFWS)

They left the cage open, and as team members took pictures, she flew up into a tree and climbed to the top. They left food and water in the tree. By morning the food had been eaten and the young bat had flown away for good.

The Mariana fruit bat was listed as endangered on Guam in 1984, but subsequent research showed that the bats move between Guam and the Northern Marianas, so the Service reclassified the Guam population as threatened in 2005 and also listed the Northern Marianas population as threatened. ♦

Susan Saul is an outreach specialist in External Affairs in the Fish and Wildlife Service's Pacific Regional Office.

Send Us Your Comments

Letters to the Editor or suggestions about *Refuge Update* can be e-mailed to RefugeUpdate@fws.gov or mailed to *Refuge Update*, USFWS-NWRS, 4401 North Fairfax Dr., Room 634C, Arlington, VA 22203-1610.



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