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Ten Centennials

Ten national wildlife refuges – nine established by President Theodore Roosevelt, founder of the National Wildlife Refuge System – will celebrate centennials in 2009.

One of two refuges celebrating in Alaska, Alaska Maritime includes lands that were once part of 10 previously-established refuges. Composed of more than 2,500 islands, spires, rocks, and reefs, the refuge spreads along most of Alaska’s 47,300-mile coastline. Also in Alaska, Yukon Delta, the nation’s second largest refuge at more than 19.1 million acres, sees millions of water birds return to nest each spring.

Other refuges celebrating their centennial are:

- Hawaiian Islands, part of the Papahānaumokuākea Marine National Monument
- Deer Flat, ID
- Pathfinder, WY
- Cold Springs, OR
- National Elk Refuge, WY
- Minidoka, ID
- Culebra, PR
- Farallon, CA

RefugeUpdate

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New Marine National Monuments Expand Refuge System



Seven pristine national wildlife refuges in the Central Pacific – remote coral reef ecosystems that support hundreds of fish species and large numbers of nesting birds – are included in three new marine national monuments. The U.S. Fish and Wildlife Service will manage nearly all of the new monuments. (Jim Maragos, USFWS)

Six national wildlife refuges – remote coral reef ecosystems that contain hundreds of thriving fish species and support large numbers of nesting seabirds and migratory shorebirds – are at the heart of the Pacific Remote Islands Marine National Monument, one of three marine national monuments announced on January 6.

Former Secretary of the Interior Dirk Kempthorne made the U.S. Fish and Wildlife Service responsible for managing nearly all of the new marine national monuments, adding about 54 million acres to the National Wildlife Refuge System. Some portions of the monuments will be managed in part by the National Oceanographic and Atmospheric Administration and in part by the Service.

The “national monument” designation provides added protection for some of the Pacific Ocean’s most pristine areas. Combined, the three monuments encompass nearly 200,000 square miles, making it the largest fully protected area in the world.

“For seabirds and marine life, they will be sanctuaries to grow and thrive,” said Bush. “For scientists, they will be places to extend the frontiers of discovery. And for the American people, they will be places that honor our duty to be good stewards of the Almighty’s creation.”

The new **Pacific Remote Islands Marine National Monument**, which spans areas to the far south and west of Hawaii, consists of Baker, Howland and Jarvis Islands, Johnston Atoll, Kingman

Largest Friends Conference Brings Hundreds to Capital City

“People who never go to a national conference don’t realize the enormity of the Refuge Friends movement,” says Nancy Menasco, president of Friends of Red River NWR in Louisiana. “The enthusiasm of the people who attend and the quality of the speakers are extraordinary. Everything is so well planned.”

Planning for the 2009 National Friends Conference was indeed key as nearly 500 people came together February 21-23 in Washington, DC, for the largest such conference in the history of the Refuge Friends movement. Sponsored by the U.S. Fish and Wildlife Service and the National Wildlife Refuge Association (NWRA), the conference featured nearly two dozen training sessions and special forums, all under the theme, “Friends Unite!”

Nearly 300 Friends representing 230 national wildlife refuges, 161 Friends organizations and every state except Wyoming joined about 200 representatives from the U.S. Fish and Wildlife Service and speakers at

a conference that focused on such strategic issues as climate change, citizen science programs and understanding the business of Friends.

“Sometimes, as you’re working in the field, you can feel the great bureaucracy of the federal government pressing down on you,” says Menasco. “When you come to a conference like this, you can be with people who are like minded, who share your vision for what the Refuge System can be, and it is rejuvenating.”

Training sessions were offered in three tracks: Refuge System resource challenges; tools, programs and strategies for success; and Friends capacity building. Among the topics that Menasco and others found especially useful were how to develop and energize a board of directors and how to recruit and retain members. Other sessions delved into the implications of climate change for the Refuge System and how



local land use decisions impact national wildlife refuges.

“Our national wildlife refuges are canaries in the coal mine when it comes to pressing issues like climate change, competition for water and combating invasive species,” said Evan Hirsche, president of the NWRA and Jim Kurth, deputy chief of the Refuge System, in issuing the conference invitation. “Fortunately, Friends have always risen to the occasion during hard times.”

“What I always like best about conferences like these is the networking possibility,” concluded Menasco. “You come away with ideas from people throughout the Refuge System and from other Friends groups. You get a sense of being part of something much larger than your organization.” ♦



Greg Siekaniec

Chief's Corner As I Take the Helm

The National Wildlife Refuge System has changed a great deal since I last served

eight years ago as deputy chief in the Washington Office. At the end of 2000, we had 37 wetland management districts and 530 national wildlife refuges, having established, among others, Big Oaks Refuge in Indiana and the then 66-acre Northern Tallgrass Prairie Refuge in my home state of Minnesota. Today, we have 587 units within the Refuge System – the same 37 wetland management districts, but having added

a total of 20 national wildlife refuges and national monuments.

In 1999, while I was still deputy chief of the Refuge System, an Assistant Director of the Division of Refuges and Wildlife not only oversaw refuges and realty, but also directed other programs, including the Fish and Wildlife Service’s law enforcement, Office of Migratory Bird Management and Duck Stamps. Now, the Refuge System is a stand-alone program within the Service.

Times have changed.

Not only does the National Wildlife Refuge System have an Assistant Director – a position I am honored

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RefugeUpdate

Ken Salazar
Secretary
Department of the
Interior

Greg Siekaniec
Assistant Director –
National Wildlife
Refuge System

Martha Nudel
Editor in Chief

Michael Wright
Managing Editor

Address editorial
inquiries to:
Refuge Update
USFWS-NWRS
4401 North Fairfax Dr.,
Room 634C
Arlington, VA
22203-1610
Phone: 703-358-1858
Fax: 703-358-2517
E-mail:
RefugeUpdate@fws.gov

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Service Unveils Draft Climate Change Plans



Climate change strategic and action plans are expected to take their final forms in late 2009, reflecting input from Service employees. (USFWS)

With the U.S. Fish and Wildlife Service seeking employee comments on a draft climate change strategic plan and five-year action plan, the issue has moved front and center as never before. Although the Service does not expect to issue its final strategic plan until late 2009, the Refuge System, as well, has been analyzing how climate change will affect national wildlife refuges and has been assembling approaches to help solve unprecedented challenges.

The Service's draft plans – released for employee comment on December 12, 2008 – make clear the urgency of developing capacities to address such complex influences as sea-level rise,

drought and the limited adaptive capacities of many species and natural systems. The draft plans stress that climate change will magnify existing management challenges involving such matters as habitat fragmentation, invasive species, the impact of growing urbanization, and the quality and quantity of available water. The draft action plan covers fiscal years 2009-2013. The drafts are available online at http://www.fws.gov/home/climatechange/strategic_plan.html

Further underscoring the need for action, the U.S. Geological Survey (USGS) reported in December 2008 that during this century, climate change will produce “abrupt” shifts – those occurring over decades or less –

capable of posing “clear risks to society in terms of our ability to adapt.” The report suggests, among other findings, that rapid and sustained arctic sea ice loss is likely and that southwestern United States droughts may intensify. The USGS findings are available at <http://www.climate-science.gov/Library/sap/sap3-4/final-report/default.htm>

Although the Service's draft plans have not been publicly released, Service employees were encouraged to suggest refinements as well as additional ways of working in tandem with partners such as the USGS, the states and tribes.

Inspiring and Empowering

The Service kicked off its many-faceted effort to address climate change with a series of regional forums that began in Alaska. The sessions were intended to help collect information on the potential

effects of climate change in the Refuge System's array of landscapes.

The Service Director created a seven-member Directorate Working Group to ensure that any plans would be both comprehensive and coordinated. The draft plans – and the vision and science underpinning the documents – are the handiwork of 20-member team of professional career staff members (including four Refuge System representatives) that went to work in June 2008.

The Service's strategic plan focuses on three “integral and essential” commitments: Helping fish, wildlife and their habitats adapt to climate change; mitigating levels of greenhouse gases in the Earth's atmosphere; and expanding awareness of the national and international effects of climate change among Service employees, external audiences and partners, “and inspiring and empowering them to help.”

The Service has already identified a key first step: establishing dedicated, full-time climate change coordinators at the national level within each appropriate Service program. Additionally, a Service coordinator will be identified within the office of the science advisor.

Each of the Service's regions has not only held public forums on the issue of climate change, but they have also begun work on their own plans. The first session was held in Alaska in February 2007. There followed workshops in, among other locations, Portland, OR, Amherst, MA, and Denver, Co. The Mountain-Prairie Region held its most recent climate change team meeting on January 23 to identify roles and potential products and develop a work plan and criteria that will ultimately lead to regional actions. Later in the month, a two-day workshop in San Francisco focused on “Climate Change, Natural Resources and Coastal Management.” ♦

Win-Win all Around



Blackfoot Valley National Wildlife Refuge is composed entirely of land protected by a patchwork of conservation easements, the result of the U.S. Fish and Wildlife Service building lasting relationships with ranchers and showing respect for their way of life. (Noah Kahn)

by Noah Kahn

I have a pretty great job. I actually get paid to stand up and declare with conviction that national wildlife refuges are special places worthy of more attention, protection and dollars. I carry on about refuges to Congress, the media, other non-profits organizations, Refuge Friends groups, anybody who will listen, really. Luckily, the good conservation being done by dedicated U.S. Fish and Wildlife Service employees across America provides all the compelling anecdotes this advocate could ever want.

Several tales have become well-worn favorites: hurricane recovery on the Gulf Coast, nutria eradication at Blackwater Refuge in Maryland, volunteers restoring habitat at Presquile Refuge in Virginia, the truly impressive value of partnerships at San Luis Refuge in California.

Of course, I sometimes pepper in “chicken little” stories, too, like the more than 35 percent of the nation’s refuges that are entirely unstaffed, the grossly inadequate law enforcement presence on refuges everywhere, and the several million acres overrun with invasive plants.

But let’s get back to the good news; that’s what really engages people and infuses them with the necessary passion to solve problems.

After an October 2008 jaunt around Montana, I’m very excited to have added a newer, sharper arrow to my advocacy quiver. As a member of CARE, the coalition that works to increase Refuge System funding, I met our Service guides in Billings on a seasonably chilly afternoon. Following an unforgettable stop at Charles M. Russell Refuge to hear elk deliver their otherworldly bugles and learn about fire management and cattle grazing impacts, and a brief visit to the rolling prairie at Benton Lake

Refuge, we pushed west to the eastern slope of the Rockies.

Building from Bottom Up

It wasn’t until we visited two relatively new and stunning additions to the Refuge System, Rocky Mountain Front Conservation Area and Blackfoot Valley Wildlife Management Area, that I discovered my newest story, my latest “advocacy arrow.” Both of these units are a patchwork of conservation easements built from the bottom up by forming lasting relationships with ranchers and respect for their way of life.

Here, Service staff isn’t just paying lip service to buzzwords like “partnership-based” and “landscape-scale.” By embedding staff in local communities, the Service is making the investments necessary to develop a larger land protection strategy by first creating trusting partnerships. Never before had I seen such genuine camaraderie between rural cattle ranchers and employees of the big, bad federal government! In Montana, their shared goals were to prevent the subdivision of large, working ranches (which, incidentally, provide unbroken tracts of wildlife habitat) and to restore degraded areas, such as cattle-trampled trout streams. With Rocky Mountain Front and Blackfoot Valley, remarkable progress is being made on both fronts.

Learning of the innovative conservation being practiced in western Montana reminded me of the larger task now awaiting all Americans worried about wildlife. We need to quickly, yet strategically grow the Refuge System, with careful consideration of climate change and land-use patterns. Our efforts should protect imperiled ecosystems and species underserved by existing conservation areas, secure adequate water for conservation purposes, and emphasize connecting and buffering habitats through acquisitions or easements. As I saw in Montana, perpetual easements are one very

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Blackfoot Challenge Creates Trust and Benefits Wildlife

by Lani Sinclair

Montana's Blackfoot Challenge – and the 48,120 acres of land already conserved within Blackfoot Valley Wildlife Management Area and Benton Lake Wetland Management District – are proof that private landowners, the U.S. Fish and Wildlife Service and community leaders can find common ground in their commitment to conserving a critical watershed.

The Blackfoot Challenge is private nonprofit organization that had its roots in the mutual concerns of landowners and the Service for the diverse habitat, fish and wildlife, and beauty of the 1.5-million-acre Blackfoot River Valley. The valley is home to grizzly bears, wolves, bull trout, westslope cutthroat trout, sandhill cranes, long-billed curlews and trumpeter swans.

The valley has a long history of harmful mining, logging and grazing practices, and has suffered declining fisheries. In the early 1990s, development of summer homes, golf courses and other commercial sites posed a long-term threat to the watershed. The Service wanted to resolve the valley's natural resource issues, but at that time, much of the degraded and threatened habitat was on private land. In 1991, community leaders organized a meeting for stakeholders, including the Service, to discuss the future of the Blackfoot Valley.

The result in 1993 was the Blackfoot Challenge, whose mission is to coordinate efforts to enhance, conserve and protect the natural resources and rural lifestyle of the Blackfoot River Valley. The Challenge's key strategies include partnering with private landowners, state and federal agencies, foundations and nonprofit organizations in conservation easements and fee title acquisitions.

Private, Public Lands Woven Together

Conservation easements have played a major role in expanding the three waterfowl production areas, Blackfoot, Kleinschmidt Lake and H2-O. These easements, Greg Neudecker says,

have benefited the larger Crown of the Continent Ecosystem, which includes Glacier National Park and the Bob Marshall Wilderness Complex in Montana. Neudecker is assistant state coordinator of the Service's Montana Partners for Fish and Wildlife Program and vice chair of the Blackfoot Challenge. According to Gary Sullivan, realty supervisor in the Service's Montana Realty Program, the Blackfoot watershed is critical buffer habitat for such federal trust species as lynx and wolverine.

Neudecker notes that, "The Blackfoot Challenge has woven together pieces of property owned by the Service and state and federal agencies through conservation easements on private lands." Of the Blackfoot watershed's 1.5 million acres, more than a million acres are now protected through public ownership and conservation easements. Those include 19,398 acres of refuge lands purchased with Land and Water Conservation Funds, 4,556 acres of Waterfowl Production

Areas and 24,166 acres of additional conservation easement purchased mostly with Migratory Bird funds.

Sullivan was instrumental in the formation of the Blackfoot Challenge, helping to create the organization's structure, name, nonprofit status, mission statement and board of directors. "Refuge system lands are part of the patchwork quilt that makes up the Blackfoot watershed," he said.

Grizzlies, Trumpeter Swans

In the early 1990s, there were fewer than five grizzly bears frequenting refuge lands and private lands in the Blackfoot watershed, according to Neudecker. Today, there are approximately 50. The trumpeter swan was documented in the Blackfoot Valley by Meriwether Lewis on his trip back east in the early 1800s, but had disappeared by 2005. The species has been successfully reintroduced by the Service and partners within the watershed

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Montana's Blackfoot Challenge, a private nonprofit organization whose partners include more than 500 land owners, works with the U.S. Fish and Wildlife Service to preserve the diverse habitat, wildlife and beauty of the Blackfoot River Valley. (USFWS)

Recreating an Estuary on Puget Sound

With the help of generous partners, Nisqually National Wildlife Refuge in Washington is restoring 762 acres of former farmland back to an estuary. The three-year undertaking – the Northwest’s largest estuary restoration project – also will revive and enhance 37 acres of riparian surge plain forest and 246 acres of freshwater wetlands. It will increase salt marsh habitat by 50 percent in south Puget Sound.

“This is a complex project that has involved more than 10 years of planning and the support of many private and public partners and the public,” says refuge manager Jean Takekawa. “In the end, we’ll have a model of how partners can work together to restore a system.”

The \$13 million restoration, part of a regional effort to restore salt marsh and estuaries in the highly developed Puget Sound area, got underway in July 2008. It involves many federal, tribal, state, local and private partners, including the Nisqually Tribe, who recently restored 140 acres of estuary on tribal lands within refuge boundaries. A cooperative agreement between the refuge and tribe facilitates management of tribal lands as part of the refuge. Ducks Unlimited has provided not only financial support but also technical expertise, engineering and contracting services.

In addition to funding from the U. S. Fish and Wildlife Service and Ducks Unlimited, more than \$4.5 million in grants has come from, among other sources, all five watersheds in south Puget Sound using Puget Sound Acquisition and Restoration funds and Salmon Recovery Funding Board dollars, the Estuary and Salmon Restoration Program administered by the Washington Department of Fish and Wildlife, the Puget Sound Partnership, National Oceanic and Atmospheric Administration, Environmental Protection Agency and National Fish and Wildlife Foundation.



In the Northwest’s largest estuary restoration project, Nisqually National Wildlife Refuge, WA, is restoring 762 acres of former farmland and fresh water wetlands back to an estuary. (Linda Watters, USFWS)

Diked and Drained

Before the late 1800s, the Nisqually estuary was intact, but by the early 1900s, much of its salt marsh had been diked and drained. Altogether, more than 80 percent of Puget Sound’s estuary habitat has been similarly lost.

In 2004, the refuge completed its Comprehensive Conservation Plan with the decision to restore the estuary. The Puget Sound Partnership, a state agency, recently identified the Nisqually project as a top priority.

The project’s initial phase, which ended in November 2008 with the arrival of the rainy season, focused on building a new exterior dike to protect the freshwater wetlands that will be retained and the refuge headquarters. In spring 2009, contractors are scheduled to begin removing much of the main dike, the Brown Farm Dike, a 12-foot-tall barrier, more than five miles long, built by hand in the late 1800s to protect a farm. The dike also supports the popular Brown Farm Dike Loop Trail, so construction of

a new, shorter boardwalk trail that will go into the restored estuary is an important part of the project.

Talking to the Community

Nisqually Refuge attracted more than 180,000 visitors in 2008. The refuge is working to provide educational opportunities to help people learn about restoration and the changes in public access during restoration. Frequently revised construction updates and advisories on trail conditions are displayed on the refuge web site, at the fee station, visitor center and along trails.

A richly-detailed brochure explains the importance of estuaries and outlines the expected work schedule. A newsletter, published quarterly by the refuge Friends group has dispensed information. For a while longer, the refuge will be alive with the roars and rumbles of earth moving equipment. “A lot of people are coming out just to look,” Takekawa says. “We have a great opportunity to show visitors that restoration of an estuary is possible if we work together.” ♦

Greg Siekaniec Named New Refuge System Chief

Greg Siekaniec, a 24-year veteran of the National Wildlife Refuge System, was named Assistant Director, Refuge System by then-U.S. Fish and Wildlife Service Director H. Dale Hall. Before taking the helm of the Refuge System in January, Siekaniec spent eight years as manager of Alaska Maritime National Wildlife Refuge, one of the Refuge System's most remote and far flung units. The refuge encompasses more than 2,500 islands and nearly five million acres.

Among his many achievements at Alaska Maritime Refuge, Siekaniec developed a host of partnerships with national conservation organizations to restore island biodiversity and rid islands of destructive invasive species – foxes and rats – that had nearly eradicated native seabirds and other wildlife. Alaska Maritime Refuge provides nesting habitat for approximately 40 million seabirds, about 80 percent of the state's nesting seabird population.

Siekaniec began his career at J. Clark Salyer National Wildlife Refuge, ND, as a refuge clerk and moved up into management positions in Montana, North Dakota and Wyoming in addition



Greg Siekaniec, a 24-year veteran of the National Wildlife Refuge System, has been named the new Assistant Director for the Refuge System. (USFWS)

to Alaska. He served as deputy chief of the Refuge System before taking over leadership at Alaska Maritime Refuge in 2001.

Through a varied career with the Service – always working in the Refuge System – Siekaniec has gained experience with small to large construction projects, large-scale habitat restoration, law enforcement, wetland management, environmental cleanup, land acquisitions, establishing new refuges and sensitive wilderness stewardship issues.

Siekaniec earned a bachelor's degree in wildlife biology from the University of Montana. He completed the Senior Executive Service Candidate Development Program in 2008, the same year that he completed the Senior Executive Fellows Program at Harvard University's John F. Kennedy School of Government.

Siekaniec and his wife, Janelle, and their two children credit his work with the Service for the opportunities to live a rural subsistence lifestyle and, at other times, be immersed in a rapidly growing urban area. "The varied cultural and geographic experiences have led us to firmly embrace the importance of conservation partnerships," said Siekaniec. "Whether acquiring lands for the Refuge System or working to remove Norway rats from a seabird island, it's all about working together and maintaining relationships."

During their years in Alaska, the Siekaniec family could often be seen fishing the Kenai River, hiking and camping across the state, and hunting from the end of the Alaska Peninsula to the northern Brooks Range. ♦

Blackfoot Challenge Creates Trust and Benefits Wildlife – continued from pg 5

on private and Refuge System lands, and now numbers over 40.

The Blackfoot Challenge has accomplished other impressive achievements. At least 52 stream tributaries have been restored, including 62 miles of riparian restoration. Habitat improvements include the restoration of 2,600 acres of wetlands and 2,300 acres of native grasslands. More than 460 miles of fish passage barrier have been removed.

Since its creation, the Challenge has expanded its partners to include more than 500 private landowners and more than 160 agencies, conservation groups

and foundations. This partnership has raised \$100 million dollars for conservation since 1976. In 2006, the Service and the Blackfoot Challenge received an Innovation in American Government Award from Harvard University's Kennedy School of Government for rewarding "voluntary conservation of habitats for wolves, trout, grizzlies and other wildlife in the Blackfoot Watershed through cooperative, community-based partnerships."

According to Sullivan, "Here in the Mountain-Prairie Region, we have found that combining habitat restoration

activities of the Partners for Fish and Wildlife Program with the use of conservation easements across large, intact landscapes has been very successful. The approach is built upon establishing trust and credibility with landowners where there is compatible land use – like working cattle ranches – and a shared vision of maintaining functional landscapes that support viable populations of federal trust species." ♦

Lani Sinclair is a free-lance writer in the Washington, DC, metropolitan area. She has written extensively on conservation issues.

Where Underground Condos Are a Big Hit

by Michael Wright

Don Gillis, the natural resources manager at the Army's Umatilla Chemical Depot in northeast Oregon, not too far from Umatilla National Wildlife Refuge, wanted to provide additional nesting habitat – coyote-proof, if possible – for the depot's colony of burrowing owls.

In the fall of 2007, he approached the U.S. Fish and Wildlife Service with a plan for assembling a team to build and install artificial burrows for the owls,

whose populations in the region have been declining because of development and farming. The following spring, when the birds reproduce, Mike Gregg and James Rebholz, wildlife biologists at Mid-Columbia River National Wildlife Refuge Complex, became collaborators.

Among other contributions, Gregg and Rebholz selected specific sites for artificial burrows (based on their proximity to natural, occupied burrows), took Global Positioning System coordinates and, working with the Gillis, helped manage the project.

Assembling the owl condos (as they're called) isn't a complicated process. It requires taping together plastic barrels and buckets and connecting them to an entrance tunnel – 10 feet of flexible drainage pipe too small for most predators, including coyotes, to crawl



To provide additional nesting habitat for burrowing owls, 18 artificial burrows were installed at an Army facility in Oregon with the help of refuge biologists. Most were quickly occupied by young owls. (USFWS)

Uncovering the Mysterious Life of a Snake

by Steve Kahl

Shiawassee National Wildlife Refuge in Michigan, one of only three refuges known to be home to the eastern fox snake, is partnering with our refuge Friends group, Central Michigan University and Potter Park Zoo in nearby Lansing to study one of the most threatened and least understood reptiles in the Midwest. The study is an important first step as the refuge seeks to develop a conservation strategy.

The eastern fox snake's range is confined to the coastal plains of parts of three Great Lakes – Huron, Erie and Ontario. Once common, the snake's population has declined drastically due to loss of coastal wetlands and habitat fragmentation and persecution. Many snakes are killed because they are mistaken for rattlesnakes (a threatened fox snake sometimes shakes its tail).

Shiawassee Refuge, with the extensive wetlands, grasslands and riparian habitats favored by the eastern fox snake, has worked to maintain, enhance and restore snake habitat.

Little is known about the refuge's fox snake population, including its abundance, age and sex ratios, genetic diversity, habitat preferences, nesting sites, hibernacula, daily and seasonal movements and mortality factors. Further, no formal program to monitor the species' population exists at the refuge.

Radio Telemetry Study

Kile Kucher, a university master's degree candidate, began a radio telemetry study in spring 2008, with 12 snakes now roaming the refuge that have radio transmitters that were surgically implanted by Potter Park Zoo staff. As Kucher travels the refuge, beeps from the transmitter allow him to track the

Refuges

through. The condos are modeled on previously tested and successful designs used in Washington.

With volunteers, including members of the depot staff, pitching in, the first batch of condos were buried three-to-four feet below the surface in May 2008. Initially, three condos were fabricated and installed in a cluster about 100 meters from active owl burrows. An additional 15 condos were installed in June.

Knocking on the Front Door

The hope was that young owls mature enough to wander away from their nests would discover, and be attracted to, a condo's front door – the dark mouth of the entrance tube. To help increase the visibility of the nearby empty condos, tree limbs were positioned so that the pipe openings – surrounded with loose dirt so they would appear to have been

recently dug – could be more readily spotted by a perching owl.

“They took to the condos right away,” says Gillis. “Within the first 24 hours, an owl moved in – we nicknamed her ‘Buffy’ – and within weeks we saw activity in 14 of the 18 condos.”

Adds Gregg: “From the start it was an appealing idea because once we have burrows in place, we can answer a lot of questions we have about the life of the burrowing owl – such things as dispersal and reproductive success.” A Land Management and Research Demonstration biologist since January 2004, his primary focus on the shrub-steppe ecosystems of the region has involved him in research and restoration projects on public and private lands in three states. This is first project involving the owls.

“This spring, we’ll find out if breeding pairs are actually raising young in the artificial burrows,” he says. “If they are, then we will install more burrows. We may be seeing young owls that were hatched in a condo eventually building their nests in another condo.”

An engineering firm has agreed to provide a wireless power source so that a low-light video camera can be installed to monitor life in the condos. Like many other isolated military installations – where the fences that provided security also protect wildlife – the 19,728-acre facility is a sanctuary for a range of species. The depot has its own herd of pronghorn antelope; large numbers of long-billed curlews nest there. ♦

Michael Wright is managing editor of Refuge Update.



At Michigan's Shiawassee National Wildlife Refuge, researchers are studying one of the most threatened and least understood reptiles in the Midwest – the eastern fox snake. (USFWS)

snakes' movements; the frequency of the beeps tells him an individual snake's temperature.

Kucher's study is on hold during the snakes' cold-weather hibernation. “I'll be at the refuge five to seven days a week later this year,” he says. “I look for snakes all day with a light-weight receiver and directional antenna.” When he locates a snake, he records habitat composition as well as environmental variables.

The study is being funded through a U.S. Fish and Wildlife Service Challenge Cost Share Grant. It is being facilitated by the Friends of Shiawassee National Wildlife Refuge, who are administering the grant funds.

Not every snake Kucher catches is implanted with a transmitter. “But I inject all of them with a microchip about the size of a grain of rice under their skin. When I catch a snake, I scan it with a tag reader. If it has a chip, the reader will display a nine-digit number. With the chips, I can keep a list of all the snakes I've captured.”

Kucher captured one male snake six times within just a few weeks. “It was courting a female that had been implanted with a radio transmitter,” he recalls.

Some Revealing Information

The study is already revealing important information. For example, road mortality could be a significant threat to refuge snakes. The refuge is crossed by few public roads, but the roads cross rivers that the snakes may use as travel corridors. So far, we've found three snakes apparently killed by passing vehicles.

Better news is that the refuge may have more eastern fox snakes than previously thought. So far, Kucher has captured 50 snakes. ♦

Steve Kahl is manager of Shiawassee National Wildlife Refuge in Michigan.

At vanguard of shaded fuel breaks

Studying Endangered, and Picky, Songbirds

by Chuck Sexton

At Balcones Canyonlands National Wildlife Refuge, deep in the heart of Texas Hill Country, a primary research challenge involves figuring out ways to monitor the health of two species of endangered songbirds, the golden-cheeked warbler and black-capped vireo. We also want to implement management practices that will both enhance and restore their habitat and mimic natural processes, for example, using prescribed burns that duplicate the effects of periodic wildfires, that we expect were at work in pre-settlement days.

The birds require distinctly different habitats. The warbler is a bird of old-growth juniper-oak woodlands, which can be devastated by wildfires and are threatened by adjacent urbanization

(the refuge, 25 miles from Austin, is in one of America's fastest growing metro areas). We monitor these and other threats and try to direct our limited resources to ameliorating their influences.

Our efforts to reduce wildfires have put us at the vanguard of the study and creation of shaded fuel breaks – areas where dead limbs and low-hanging foliage are trimmed from about head height down to the ground – at our wildland-urban interface. These breaks establish defensible spaces around the perimeter of important habitat and urban edges where wildfire is a threat but where traditional clearing of woodlands for firebreaks is not an option.

Black-capped Vireo

The black-capped vireo, for its part, prefers successional brushlands, where

Tracking Rafinesque's Big-Eared Bats

by David Richardson

Not much is known about where the Rafinesque's big-eared bat, a species whose range is mostly in the southeast, goes home to roost once the sun comes up. Here, among the mature bottomland hardwoods at Noxubee National Wildlife Refuge in east-central Mississippi, we're trying to come up with answers.

The answers matter because the bat is a species of concern in every state within its range and listed as threatened or endangered in several states. The U.S. Fish and Wildlife Service has undertaken a preliminary review to determine if the species warrants consideration for listing under the Endangered Species Act.

Researchers at other Mississippi refuges also have focused on Rafinesque's big-eared bat. Staff at St. Catherine

Creek Refuge, in conjunction with Bat Conservation International, for one, has been studying artificial roosts for use in forests too young to have lots of tree cavities. Their work has shown some promising success with bats using the artificial structures.

In 2009, the research will be expanded and replicated on a larger scale to examine other hardwood forests. Work is presently planned for Theodore Roosevelt Refuge Complex and North Mississippi Refuges Complex.

The investigation underway at Noxubee Refuge has involved repeated inspections of more than 600 trees with basal cavities to determine why and when the bats favor certain tree species. The inspections aren't for the squeamish; they typically involve lying on your back and sticking your head into a narrow



Searching for roosting bats is not for the squeamish; it can involve sticking your head into a small opening at the base of a hollowed-out hardwood or – as David Richardson demonstrates – stepping inside a narrow 'window' cut into the side of a tree. (USFWS)

Refuges



At Balcones Canyonlands Refuge in Texas, a primary research challenge involves monitoring the health and habitat of two species of endangered songbirds, the golden-cheeked warbler and the black-capped vireo (USFWS).

habitat is shaped by fire and vegetation disturbance such as the removal of juniper and grazing. Finding effective ways to manage vireo habitat on a tight budget has required us to be creative with hand-cutting, mechanical treatments and prescribed burning.

We have set up a series of vegetation transects to compare and contrast

the outcomes of different kinds of habitat management on an area of new vireo habitat. Graduate students from Texas State University and Texas A&M University are monitoring vireo production and dispersal.

We can't study all of the refuge's incredible biological diversity, so we have actively solicited help from universities. Indeed, while we often have a long, ready list of research questions that we would like to study, in practical terms it is the research interests of university faculties and students that drive much of the research on the refuge. During the past few years, we have hosted graduate students from the University of Texas and at least 10 other universities and organizations who have studied such diverse topics as cave faunas, soil micro-organisms, lichen diversity, rare plant genetics, invasive species control, Monarch butterfly migration and prairie restoration.

University of Texas professor Sahotra Sarkar has organized mini-symposia as information-sharing venues for students and faculty engaged in research on the refuge and at a nearby nature preserve. Two have been held so far, and we expect this to be an annual event. The most recent gathering, which featured about a dozen wide-ranging presentations, was attended by 30 to 40 students, faculty and staff. The symposia are one outgrowth of our role as a Land Management Research Demonstration Refuge.

Another is our effort to engage surrounding communities and interested groups in two-way conversations about land and wildlife matters. Our fire crew has done demonstration projects of shaded fuel breaks in surrounding neighborhoods, and we regularly organize specialty workshops. ♦

Chuck Sexton is the wildlife biologist at Balcones Canyonlands National Wildlife Refuge, TX.

opening at the base of a tree or stepping inside a narrow "window" that's been cut into the side of a hollow tree.

Most of the cavities abound with crickets, spiders and mosquitoes. Now and then, a snake or woodrat will slip by the side of your head. Eye reflections you catch in a flashlight beam are those of half dollar-sized spiders, not bats. Now and then, a closer look into the upper reaches of the cavities can reveal the prominent erect ears of the big-eared bat.

On a good day, one might encounter several trees with bats, mostly single big-eared bats, presumably males, which tend to roost alone. Other trees hold colonies of small southeastern myotis, a species that also favors roosting in tree hollows. (The cavities share several characteristics with the caves that other American bat species prefer; the hollows provide stable temperature and humidity and protection from rain, wind and predators.)

Complicating the surveys is the fact that big-eared bats usually don't stay put. It's not uncommon for a bat to use a cavity for weeks then switch to another.

Locating large maternal colonies requires attaching transmitters to individual females. Many tracked females head for cypress trees – some of them more than 500 years old. Access to the decayed center of cypresses typically is provided through top or side openings. However, to look inside, you plunge a chainsaw through the 4-6 inch wall at the base to create a 14 x 14 inch window – big enough to climb through – that can be reinstalled. Depending on the time of year, these portals can provide glimpses of thriving mini-ecosystems – including roosts of 100 or more female big-eared bats with their pups.

In the fall and winter, even the mostly solitary males abandon their summer cavities and roost with females and juveniles. It may be at this time that

breeding occurs; females, though, do not give birth until the following summer. The big-eared bats from hundreds or even thousands of acres of bottomland forest may be concentrated in a single tree.

Meanwhile, researchers at other Mississippi refuges also have focused on Rafinesque's big-eared bat. Staff at St. Catherine Creek Refuge, in conjunction with Bat Conservation International, for one, has been studying artificial roosts for use in forests too young to have lots of tree cavities. Their work has shown some promising success with bats using the artificial structures. ♦

David Richardson is a wildlife biologist at Noxubee National Wildlife Refuge, MS.

Where Have the Rusty Blackbirds Gone?



At Alaska's Tetlin Refuge, researchers are examining the nesting habits and habitat affinities of the rapidly disappearing Rusty Blackbird and relating these findings to the boreal forest landscape. (David Shaw)

by Bud Johnson

Tetlin National Wildlife Refuge, Alaska's Land Management Research Demonstration (LMRD) area, has been collaborating with the non-profit Alaska Bird Observatory (ABO) to study the nesting habits of the rapidly disappearing rusty

blackbird and relate those findings to the boreal forest landscape, the birds' nesting ground.

Indeed, Tetlin Refuge was selected in 2002 for LMRD designation in part

because the refuge is located entirely in boreal forest. The boreal forest, one of the world's largest terrestrial ecosystems and a critical carbon reservoir, is an important habitat component of many Alaska refuges. Eight refuges in Alaska contain approximately 30 million acres of boreal forest, roughly a third all land in the refuge system.

Tetlin Refuge's on-going research is one of several investigations underway in Alaska to study the breeding ecology of the rusty blackbird. The U.S. Fish and Wildlife Service's migratory bird management office in Anchorage has been working with ABO and the state's Department of Fish and Game to coordinate the studies. The rusty blackbird, which breeds exclusively in the wetlands of the boreal forest, has – for reasons unknown – suffered one of the

Rare Turtles Back on Assabet River Refuge

by Lani Sinclair

There are very few sites in New England that are home to more than 50 Blanding's turtles, a yellow-flecked freshwater turtle that may live more than 70 years. Two are on national wildlife refuges in Massachusetts – and with a repatriation program that started in 2007, the Assabet River National Wildlife Refuge may become the third site.

Blanding's turtles require large, unfragmented blocks of diverse wetland and upland habitat, but these locations are becoming scarcer in the United States, especially in the Northeast. Currently, this species occurs in only 15 states and three Canadian provinces. Massachusetts has listed the Blanding's turtle as threatened, and the U.S. Fish and Wildlife Service is determining if federal listing is warranted.

Two of the largest known Blanding's turtle populations in New England are

on Oxbow and Great Meadows National Wildlife Refuges. Biologists at the Eastern Massachusetts Refuge Complex have partnered with the Savannah River Ecology Laboratory (University of Georgia) and Oxbow Associates Inc. (Massachusetts) to repatriate the species to the Assabet River Refuge, which is roughly equidistant between Oxbow and Great Meadows Refuges.

Using one of the established sites for a donor population, biologists are collecting Blanding's turtle hatchlings, individually marking them, and then either releasing them directly in nearby wetlands at the donor site or new site or raising them in captivity for their first year. The year-old "head-started" turtles are larger and more likely to survive into their second year when they are released into the wild. Decades of vigilant monitoring and nest protection at the donor site have resulted in a healthy population that can now sustain limited removal of young turtles.

The year-old "head-started" turtles are larger and more likely to survive.

Refuges

steepest declines of any bird species in North America. The North American Breeding Bird Survey shows the population has declined by more than 95 percent since 1966.

Though the species has been identified as a high priority for conservation at the continental level by the international Partners in Flight initiative and is included on the International Union of Conservation Red List, it has been little studied – in part because the birds breed in such remote locations.

To learn more, the LMRD program used a Challenge Cost-Share agreement to begin a study with the ABO that focuses on the breeding ecology and habitat affinities of rusty blackbirds. The findings, when coupled with the results of other studies, may identify the limiting factors for this species so we can move

toward conservation measures that will reverse the birds' precipitous decline.

Finding 13 Nests

The first year of fieldwork, which focused on 600 acres on the southeastern edge of the refuge, was led by a graduate student from Antioch University. In a search that began in May 2008, she and her field assistant located 13 nests by watching adults from a distance and following them back to their nests, a process that requires lots of time and patience. The searching was conducted on foot and sometimes by canoe. The nests were revisited every two to seven days to determine clutch size and hatchability of eggs, length of incubation and nestling periods, nest survival, number of young fledged from successful nests and the causes of failed nesting attempts.

She monitored the birds until July 2008, when the birds began to disperse from the study area. Her data are being compared with information gathered at random sites elsewhere on the refuge and at other locations near Fairbanks and Anchorage. We hope to expand the refuge study this summer in partnership with the Alaska Department of Fish and Games Nongame Program. In addition to placing more people in the field, we plan to examine the phenology, abundance and diversity of dragonflies and damsel flies, an important food resource for Rusty Blackbird nestlings. ♦

Bud Johnson is LMRD biologist at Alaska's Tetlin National Wildlife Refuge.

Assabet River Refuge, about 25 miles west of Boston, supports a diverse mix of migratory birds as well as mammals, reptiles, amphibians, fish and invertebrates.

Since fall 2007, 88 newly-emerged and head-started hatchlings have been relocated to Assabet River Refuge. An additional 34 hatchlings are being raised in captivity for release this spring.

Monitored Weekly

During the spring and summer of 2008, biologists also trapped six juvenile Blanding's turtles at the donor site, attached radios to them and relocated them to Assabet River Refuge. These are being monitored weekly by radio telemetry, providing valuable information about their movement patterns and habitat selection, and the feasibility of using juvenile turtles in the relocation effort. Telemetry data will be analyzed to determine if it is appropriate to move more juveniles this year. Modeling efforts are also providing insight about how many turtles the donor population can safely contribute.

All the relocated juvenile turtles have survived the first year of relocation, according to Stephanie Koch, wildlife biologist at Eastern Massachusetts Refuge Complex. "Four of the six turtles

have been recaptured since the initial release, and all of these have increased in weight and size, suggesting they are finding adequate food in their new home," she said.

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In 2008, Beth Schlimm, a biological intern, and others trapped six juvenile Blanding's turtles, attached radios and relocated them to Assabet River National Wildlife Refuge in Massachusetts. (Stephanie Koch/USFW)

Not Your Grandparents' Tour Guide

by Karen Leggett

From a single Friends member in New York to scientists all over the state of Iowa, the stories of national wildlife refuges are showing up online, on podcasts and on cellphones. These various technologies reach new and younger audiences and offer incredible flexibility.

“We spend thousands of dollars for a sign that stays up for five to 10 years and doesn't change, unless we can come up with several thousand dollars again” says Cindy Samples, visitor services manager at Upper Mississippi National Wildlife and Fish Refuge, “but we can change the cellphone message 15 times a day if we want to.”

Drive. Dial. Discover.

Samples worked with Guide by Cell (www.guidebycell.com) to create “Drive. Dial. Discover - CellPhone Tour.” The minimum charge is \$200 a month; the cost is determined by the number of calls. Refuge partners, the Great River Road and the Friends groups are funding the project and they get promos on the messages. Cellphone tour signs are posted at overlooks and pull-offs around the refuge alerting visitors to stop and call 609-669-9059, where they can access messages. Each message lasts less than two minutes. The messages may also be downloaded as podcasts from the refuge Web site and Friends of the Upper Mississippi River Refuges Web site (www.friendsofuppermiss.org/podcasts.html).

In one message, Samples describes receiving a postcard from a little boy asking about the mountains of insects piled under street lamps in July – a perfect opportunity to describe the mating practices of mayflies along the river. “When the swans come in, we'll have swan messages at Brownsville Overlook,” she says.

The messages can also be recorded in different languages.

The Voices of Montezuma

In New York, Georgena Terry, a member of the Friends of the Montezuma Wetlands Complex, began creating podcasts about “things that interest me as a visitor.” She has interviewed a wildlife biologist about prescribed burns; the Friends president, an expert on grasslands; and a conservation biologist from the Cornell Lab of Ornithology about the cerulean warbler.

The interviews may be heard online or downloaded as podcasts from the Friends Web site (<http://www.friendsofmontezuma.org/audio.html>). “The possibilities for topics are endless,” says Terry. “It adds another dimension to our Friends group and brings people back to the Web site.”

For more information on creating podcasts, visit http://www.fws.gov/refuges/birding/pdfs/Podcast_Instructions.pdf.

Just Listen To It

“Find out what you don't know about your own backyard,” says the Science in Iowa Web site (www.scienceiowa.org/nwr/), a production of the Iowa Academy of Science. With the help of a Preserve America grant, the academy produced multiple podcasts for the six national wildlife refuges and one wetland management district in Iowa. The podcasts were created by academy members who offer personal reflections, conservation history, geological information and other bits of history and science.

High school science teacher De Anna Tibben narrates one podcast about DeSoto National Wildlife Refuge, recalling that as a child she had “marveled that right in the middle of the lake, we could stop and stand up in the water.” Later she learned about oxbow lakes – which in turn gave this lake its colloquial name, DeSoto Bend – and

the Web site (<http://www.scienceiowa.org/nwr/audio/de-soto-nwr>) includes a color animation of how an oxbow lake is created. Individual and classroom activities accompany each podcast.

The Iowa Academy of Science podcasts are on a separate Web site (<http://www.scienceiowa.org/>) with a section for each refuge or wetland management district. There are links to the refuge itself and any Friends organizations.

Seavey says the Academy and its partner organizations are promoting the podcasts at teacher conferences and registering the site at Earthcache.org, which introduces visitors to special places with unique geoscience features. ♦

Karen Leggett is a writer-editor at Refuge System headquarters in Arlington, VA.

Rare Turtles Back on Assabet River Refuge – continued from pg 13

Because “Blanding’s turtles don’t reproduce until they’re at least 16 to 20 years old,” she said, “this is a long-term project that requires long-term partnerships and investment.”

Adopt a Turtle

In 2007, Bristol-Myers Squibb, a major pharmaceutical company that is building a new facility near Oxbow Refuge, decided to adopt the Blanding’s turtle. Company employees have participated in on-the-ground work, for example, hand pulling non-native invasive plant species to improve nesting habitat. This growing

partnership also includes Friends of Oxbow and Assabet River Refuges, the Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife and MassHighways. The partners worked together to maintain and install fencing along a major highway to reduce adult turtle mortality from vehicles.

Project Leader Libby Herland of Eastern Massachusetts Refuge Complex praised the partnership. “We are fortunate to have such diverse, dedicated partners and look forward to future years of successful Blanding’s turtle

work,” she said. Another partner was the National Fish and Wildlife Foundation, which funded researchers. “The project would not have happened without them,” she said. ♦

Lani Sinclair is a free-lance writer in the Washington, DC, metropolitan area. She has written extensively on conservation issues.

New Marine National Monuments Expand the Refuge System – continued from pg 1



The “national monument” designation provides added protection for some of the Pacific Ocean’s most pristine areas. (USFWS)

Reef, Palmyra Atoll and Wake Island. All but Wake Island are units of the National Wildlife Refuge System. The islands are an important part of the most widespread collection of marine- and terrestrial-life protected on the planet under a single country’s jurisdiction. They sustain many endemic species including corals, fish, shellfish, marine mammals, seabirds, water birds, land birds, insects and vegetation not found elsewhere.

A diamond-shaped island to the east of American Samoa, the **Rose Atoll Marine**

National Monument is the southernmost point of the United States. This small atoll, which includes the Rose Atoll National Wildlife Refuge with about 20 acres of land and 1,600 acres of lagoon, remains one of the most pristine atolls in the world. Rare species of nesting petrel, shearwaters, and terns thrive on the

island. Its surrounding waters are the home of many rare species, including giant clams and reef sharks – as well as an unusual abundance of rose-colored coral reefs.

The third and largest of the protected areas surrounds the **Northern Mariana Islands National Monument** and includes the Marianas Trench, the deepest canyon on earth. The Mariana Islands monument alone protects 95,000 square miles, encompassing areas believed to harbor some of the oldest known life on the DNA tree. By itself, this monument is the third largest marine reserve in the world. Among its diverse and remarkable underwater features are the second

known boiling pool of liquid sulfur and huge, active mud volcanoes.

Historic, Scientific Significance

The marine monuments were created under the Antiquities Act, signed in 1906 by Theodore Roosevelt, which allows the President to aside places of historic or scientific significance to be protected as national monuments.

The United States has jurisdiction over the areas because all the islands are U.S. territories. With the designations come restrictions on the use of waters. Destruction or extraction of protected resources within the boundaries of the monuments is prohibited, as is commercial fishing in almost all of the monument coral reef ecosystem areas. Scientific and recreational activities are permitted consistent with the care and management of the protected resources of the monuments.

Parts of the new marine monuments were the scene of intense military activity during World War II. Wake Island was invaded and occupied by Japanese forces. Wake’s lands are currently administered by the Air Force. Other designated islands and atolls have housed naval and air force stations and other U.S. military facilities. ♦

Around the Refuge System

Pennsylvania

The U.S. Fish and Wildlife Service has approved the establishment of Cherry Valley National Wildlife Refuge in eastern Pennsylvania. The refuge's boundary encompasses 20,466 acres in Monroe and Northampton counties, within which the Service may begin acquiring nationally significant habitat. Once formally established with the first land transaction, Cherry Valley will become the state's third national wildlife refuge.

The Service's next step is to work with partners and landowners to identify land that can be acquired through easements and fee title. Within the boundaries of Cherry Valley Refuge are rare ecosystems, several plants and animals protected under the Endangered Species Act and numerous species of concern within the conservation community.

Mississippi

A new visitor center opens this spring at Grand Bay National Wildlife Refuge. The \$7 million, 16,000-square-foot structure is being constructed in partnership with the Grand Bay National Estuarine Research Reserve with building funds provided by the Mississippi Department of Marine Resources and the National Oceanic and Atmospheric Administration.

Once completed, the center – a “green” demonstration project – will house interpretive exhibits, classrooms, laboratories, a dormitory for visiting researchers and graduate students and administrative office space. The structure will include a rainwater collection and filtering system to eliminate potable water use for toilet flushing

and an innovative chilled water storage system to reduce cooling costs.

The center is one of several improvements envisioned by the refuge's recently-adopted Comprehensive Conservation Plan. The plan also calls for the eventual restoration of wetland pine savanna to provide a viable habitat for a second population of Mississippi sandhill cranes. The endangered species currently exists only near Mississippi Sandhill Crane Refuge.

California

With the addition of seven wild California condor chicks in California and two more in Arizona during 2008, the wild population of the endangered birds now outnumbers those in captivity for the first time since condors were first reintroduced in 1992. “This is an exciting time for the condor recovery effort,” said Marc Weitzel, project leader



With the addition of seven wild California condor chicks in California and two more in Arizona during 2008, the wild population of the endangered birds now outnumbers those in captivity for the first time since condors were first reintroduced in 1992. (USFWS)

of Hopper Mountain National Wildlife Refuge Complex and head of the binational California Condor Recovery Program. Bitter Creek and Hopper Mountain provide important foraging and refuges habitat.

The addition of the seven chicks brings the total California population to more than 80 birds flying free. The total number of California condors, which are also found in Arizona, Utah and Mexico, is more than 320. The population reached a low of 22 birds in 1982.

Birding Team

The Refuge System's Birding Team has four new members. They are John Christian, assistant regional director for Migratory Birds, Midwest Region; E.J. Williams, assistant regional director for Migratory Birds, Mountain Prairie Region; Janet Ady, chief, Division of Education and Outreach, National Conservation Training Center; and Miyoko Chu, director of communications, the Cornell Lab of Ornithology.

The Birding Team, which now has 24 members, was created with the 2006 launching of the Refuge System's Birding Initiative. The team is spearheading efforts to raise awareness among America's birders of the bird watching opportunities and conservation programs on refuges.

Northeast Region

In March, firefighting specialists from Maryland's Blackwater National Wildlife Refuge and Virginia's Shenandoah National Park will train 35 AmeriCorps volunteers based at Perry



The Northeast Region's fire program has trained 85 AmeriCorps members for duty alongside seasoned wildland firefighters. Another class starts in March. (USFWS)

Point, MD, for duty alongside seasoned wildland firefighters.

Northeast Region fuels coordinator Steven Hubner will coordinate the instruction for the volunteers, ages 18-24. AmeriCorps secures the training location and provides the volunteers with their personal protective equipment. The three-year-old program has evolved into annual, week-long sessions of classroom and field training for AmeriCorps volunteers. The Northeast Region fire program has trained 85 AmeriCorps members; several have obtained paid seasonal jobs with the Service after leaving AmeriCorps.

In 2008, AmeriCorps firefighters saved the federal fire suppression program an estimated \$57,000 in salary costs. The volunteers also assist refuges with prescribed fire programs and respond to hurricanes, tornados, floods and ice storms.

Minnesota

The U.S. Fish and Wildlife Service and The Nature Conservancy have partnered to add more than 3,500 acres of restored wetlands and prairies to

Glacial Ridge National Wildlife Refuge. The addition brings the refuge's total acreage to more than 6,300.

The Service purchased the land from the Conservancy as the first of several acquisitions recently approved by the Migratory Bird Conservation Commission. Altogether, the commission authorized the purchase of 18,118 acres for the refuge.

"Adding these acres will ensure that these tallgrass prairie habitats, the most imperiled ecosystem in North America, will be managed for future generations to enjoy and appreciate," says refuge manager Dave Bennett. The Conservancy plans to restore the more than 18,000 acres it still owns at Glacial Ridge. Most of that property is open to the public for recreation, including hiking, hunting and birding.

New Mexico

John Taylor, senior biologist at Bosque Del Apache National Wildlife Refuge from 1985 until his death in 2004, was honored at a mid-December 2008 dedication of the John Taylor Water Management Project. The facility will

deliver water to a 1,798-acre restored area of the refuge.

A memorial site overlooking the restored tract and a half-mile walking trail was opened for public use. The memorial site is on the bank of a former channel of the Rio Grande. The local chapter of Ducks Unlimited contributed \$50,000 in Taylor's name to assist with the restoration.

Taylor, the Service's first Land Management Research and Demonstration site biologist, researched and implemented innovative techniques for conserving river water during severe droughts. He was Refuge System Employee of the Year in 2003.

Texas

At Aransas National Wildlife Refuge, 2008 was a good year for two endangered species – whooping cranes and Kemp's ridley turtles.

By year's end, a record 270 cranes had arrived at their refuge wintering grounds, up from 266 in 2007. The only naturally wild flock of whooping cranes, the birds nest in the Northwest Territories of Canada and annually fly 2,500 miles to spend the cold-weather months at Aransas and nearby points along the Texas Gulf coast.

Forty-one juveniles fledged from the 64 chicks produced in Canada last year; 38 completed the flight to Texas. Adult mortality, estimated at 13 percent, was extremely high between spring and fall 2008, keeping the flock from increasing even more.

Meanwhile, on the refuge's Matagorda Island Unit, the 2008 nesting season for Kemp's Ridley turtles – the smallest and most endangered of maritime turtles – was better than the previous year's. Altogether, 13 nests containing 1,041 eggs were documented in 2008; eight nests with 807 eggs were discovered in 2007.

Chief's Corner – continued from pg 2

to occupy – but our lands span more than 150 million acres. Those acres including the recently-established Pacific Remote Islands Marine National Monument, now managed by the Fish and Wildlife Service.

We have more than 200 Refuge Friends organizations. The National Friends Conference to be held in late February will be the largest we've ever hosted, with about 500 people in Washington, DC, to show their support for the world's most important network of public lands devoted to wildlife and wildland conservation. The Cooperative Alliance for Refuge Enhancement (CARE) continues to urge Congress to provide the Refuge System with \$1 billion for green jobs as part of the nation's economic stimulus package.

In the midst of all of this – and so much more – I have been given the privilege of serving as Chief of the National Wildlife Refuge System.

That's far more than I dreamed of when I was growing up in Minnesota on the boundary of Tamarac National Wildlife Refuge. That's a great deal more than I imagined 24 years ago when I started my career as a refuge clerk at J. Clark Salyer Refuge, named for a man who may have been the greatest Refuge System Chief in our history.

There is a steep learning curve inherent in any new position, and I have begun to move up that curve. One of our most pressing challenges is to plan our conservation strategies in the face of climate change. Others include funding

for a Refuge System with growing responsibilities; strategic habitat conservation with partners who can help us ensure the long-term health of our precious resources; engaging our supporters to help a new generation learn the joys of the outdoors; and enhancing leadership development for a workforce that too often is asked to do more with less.

For now, I am humbled to become even a small part of the Fish and Wildlife Service's history. I am energized by the millions of people who know that wildlife refuges are some of the best places to learn an appreciation of the natural resources that are the very foundation of our nation's greatness. And I hope to see you soon on a national wildlife refuge. ♦

Win-Win all Around – continued from pg 4

important and sensible approach toward the pursuit of refuges forming the backbone of a broader network of wildlife conservation lands in America.

After meeting the dedicated people that made these refuges possible, the tremendous value of the Partners for Fish and Wildlife Program became crystal clear. The Partners program helps non-federal landowners restore wildlife habitat and with two-thirds of the nation's land in private ownership, Partners is an indispensable program for the Service to accomplish its broad objectives. Unlike most other regions, where Partners is housed within Ecological Services, in the Mountain-Prairie Region, Partners works hand-in-glove with refuges and is able to develop the trust and personal connections necessary for long-term, partner-based conservation.

Everyone Wins

Refuges are the lovable land base; the public face; the non-regulatory "good cop" of the Service. The positive experiences that refuge and Partners staff are creating for rural Montanans



The Partners for Fish and Wildlife Program is an indispensable program that helps the Service accomplish its broad objectives. (Noah Kahn)

will undoubtedly maintain and even strengthen that reputation. While cattle ranchers are growing more trusting of the federal government, fish and wildlife are benefiting from the emphasis on maintaining or restoring habitat connectivity, which will only grow in importance as critters shift their ranges in response to climate change. Win-wins all around.

I left Montana with these lessons stuffed securely in my quiver, and I offer my sincere thanks to Service employees everywhere who continually impress with their admirable dedication to conservation. ♦

To read a coalition report, Keeping Every Cog and Wheel: Reforming and Improving the National Wildlife Refuge System, with specific recommendations on strengthening the Refuge

System, visit www.defenders.org/refuges/ transition. To learn how Defenders of Wildlife is helping to protect and restore habitat on private lands, visit www.defenders.org/livinglands.

Noah Kahn is manager of the National Wildlife Refuge program, Defenders of Wildlife

An Award-Winning Archaeologist's Perspective

Debra Corbett, the only U.S. Fish and Wildlife Service historic preservation officer for Alaska, received one of four Secretary of the Interior Historic Preservation Awards in December 2008. Here, she talks about her 15-year career and the importance of historic preservation.

How have you seen the importance of historic preservation change during your 15-year career?

In Alaska, refuge staff and planners are including a cultural resource goal with achievable objectives in Comprehensive Conservation Plans. We have already written cultural resource step-down plans for several refuges, and more in the works. This is a huge step toward fully incorporating cultural resource management into the day-to-day workings of refuges.

Many refuges are more interested in incorporating human history and culture into visitor center exhibits and science/culture camps, traditional ecological knowledge into refuge biology programs, and archaeological and historical information into environmental restoration.

What has been your single most rewarding accomplishment?

In the mid-1990s, the Kenaitze Indian Tribe's cultural heritage director, Alexandra Lindgren, challenged me to participate in her Susten Camp. "Susten" means "breaking trail" in Dena'ina Athabascan. The camp was conceived as a way to reconnect tribal youth with their cultural and natural heritage. So, we took the campers onto Kenai Refuge for an archaeological survey. The kids performed like champs.

Next, I tried an excavation with the kids at a prehistoric site at the confluence of the Kenai and Russian Rivers, one of the most popular sport fishing sites in Alaska that has attracted people for 9,000 years. The excavation made some major discoveries,



Debra Corbett, the U.S. Fish and Wildlife Service's historic preservation officer for Alaska, on the job. (USFWS)

including the first documented use of the region by Riverine Kachemak people between about 200 BC to 800 AD. Since then, we have worked on some early historic Dena'ina sites closer to the towns of Kenai and Soldotna.

Second is the partnership with the Alutiiq Museum on Kodiak. With the museum's help, we have completed archaeological surveys of large parts of Kodiak Refuge, giving us a more complete picture of the prehistory and cultures. The refuge and my cultural resources program have joined with the museum to create a heritage stewardship program. Most of the stewards are setnet fishermen who monitor sites. Since the program was established, the number of sites damaged by looters or vandals has dropped dramatically.

How can the Service make historic preservation a higher priority?

It is going to take a mental shift at the highest levels. A friend recalled one Service employee, when asked how the Service could manage 85 million acres with one cultural resource manager, was told that cultural resources are neither fish nor wildlife. Our decision makers and leaders have to accept that cultural resources, and other values, are an integral part of federal land management.

How do you see historic preservation working on behalf of habitat preservation?

Understanding the role of humans in the environment is possibly the greatest contribution that historic preservation, or heritage management, can make

to habitat preservation. Preserving or protecting habitats will automatically preserve most archaeological sites.

How do you convey the history of a place when visitors are coming just to view wildlife?

Show visitors a human connection to wildlife and to the past. Wildness is part of who we are. What drew homesteaders to the Kenai Peninsula draws people today. Homesteaders came for the sense of freedom and, more prosaically, for fish, mainly salmon. During winter, they moved inland to hunt and trap. Visitors walk the same trails, travel the same rivers, and use the same cabins as a homesteader of 100 years ago. That gives not only a richer and more meaningful connection with the past, but also an appreciation for the fish, the landscape and the river. ♦

A Look Back . . . Ira Gabrielson 1889-1977

“When I learned there were actually jobs where people were paid for studying birds and mammals, I knew exactly what I wanted to do.”

Ira Gabrielson

Ira Noel Gabrielson devoted his life not only to studying animals but also to protecting them and conserving their habitats. Born in Sioux Rapids, Iowa, “Dr. Gabe” began working with the Bureau of Biological Survey in 1915.

He replaced J. “Ding” Darling as director of the Survey in 1935, and when the Survey and the Bureau of Fisheries became the U.S. Fish and Wildlife Service in 1940, Gabrielson became its first director. Six years later, he left the Service to head the Wildlife Management Institute and later helped to organize and preside over the World Wildlife Fund.

Gabrielson was instrumental in the establishment of the Patuxent Wildlife Research Refuge in Maryland. During his leadership, he oversaw a four-fold expansion of the National Wildlife Refuge System.

The passage of several milestone wildlife laws took place during his tenure,

including the Migratory Bird Hunting Stamp Act, the Bald Eagle Protection Act and the Federal Aid in Wildlife Restoration Act, better known as the Pittman-Robertson Act, which levies an excise tax on the sale of sporting firearms and ammunition.

A tribute in *The Auk*, the journal of the American Ornithologists’ Union, recalled that Gabrielson’s “straightforward manner, sense of fairness, remarkable communication skills, knowledge and perception caught the attention of the press, politicians, statesmen, nobility and other leaders.” In 1949, he published *A Guide to the Most Familiar American Birds*, which sold more than five million copies before it was reissued in 2001. He wrote detailed diaries for almost 60 years and his unpublished autobiography is held at NCTC as a 700-page, double-space, typed manuscript.

While Gabrielson was thinking globally, he was also acting locally – though it took the efforts of a local Girl Scout leader to

acknowledge it. He was the founder and first chairman of the Northern Virginia Regional Park Authority, selling his wooded property to the park authority in 1966. The extensive gardens Gabrielson planted next to the small home in Oakton, Virginia, have returned to nature, but there is a plaque honoring his contributions at the site known as Gabrielson Gardens Park. The plaque, unveiled last year before 18 family members, identifies Gabrielson as a “pioneer conservationist, distinguished field ornithologist and renowned author.” ♦



Ira Gabrielson (USFWS)

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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Room 634C
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