



RefugeUpdate

National Wildlife Refuge System

www.fws.gov/refuges



Sangre de Cristo Conservation Area was established in southern Colorado, thanks to a large easement donation in the Sangre de Cristo Mountains by conservationist Louis Bacon. It was one of three new refuges established in September. (Trinchera Blanca Ranch)

Three New Refuges in West Bring National Number to 560

The National Wildlife Refuge System had a growth spurt in September as Secretary of the Interior Ken Salazar announced the establishment of two new refuges in New Mexico and a new conservation area in Colorado. The expansion brings the number of refuges to 560.

In late September, Valle de Oro National Wildlife Refuge near Albuquerque and Rio Mora National Wildlife Refuge and Conservation Area in northern New Mexico were established.

“Today we celebrate two new jewels in the National Wildlife Refuge System—Valle de Oro, an urban oasis for people and wildlife just five miles from downtown Albuquerque, and Rio Mora, which will serve as an anchor for cooperative conservation efforts in the Rio Mora watershed,” Salazar said.

Valle de Oro Refuge was formally established through the acquisition of 390 acres of a former dairy and hay farm. The refuge’s name, which means Valley of Gold in Spanish, was selected after a social media campaign solicited suggestions.

The U.S. Fish and Wildlife Service intends to work with partners to restore native bosque forest at the refuge, establish recreation and environmental education

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Conserving the Future Teams Develop Training, Ambassadors Programs

Conserving the Future implementation teams took their evolving concepts to the Refuge System Leadership Team in late October as they eyed meeting deadlines in 2013, when strategies are to be finalized and programs are to begin taking root on wildlife refuges and across the country.

The Leadership Team includes the chief and deputy chief of the National Wildlife Refuge System as well as Headquarters division chiefs and the eight regional refuge chiefs.

The work of two implementation teams is directly relevant to better serving visitors at refuges.

The Hunting, Fishing and Outdoor Recreation implementation team is collecting examples of innovative

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From the Director

Hunters Help Make Conservation Possible

The U.S. Fish and Wildlife Service and our partners have been trying for years to get more people hunting and fishing. And a new survey shows our work is paying off.



Dan Ashe

The National Survey of Fishing, Hunting and Wildlife-Associated Recreation, conducted every five years, shows that the number of hunters and anglers in 2011 is up 10 percent over 2006.

This is great news, for conservation and for the national economy.

I know that many non-hunters just shake their heads when the strongest conservationist they know turns out to be an avid hunter. But for me, and many hunter-conservationists like me, the two go hand in hand.

Hunters have always been dedicated conservationists.

They supported many early laws to conserve species and set up programs, such as the Federal Duck Stamp and the Wildlife and Sport Fish Restoration Program, both of which provide money for conservation.

Another example: A group of duck hunters from Alabama persuaded the powers that be to establish Eufaula National Wildlife Refuge in 1964.

The habitat protected by our refuges such as Eufaula not only conserves some of our important wildlife species but also offers some of the nation's best hunting. And we remain committed to increasing hunting opportunities throughout the National Wildlife Refuge System—wherever hunting is compatible with refuge purposes.

We recently opened the Detroit River International Wildlife Refuge in Michigan to migratory bird hunting, upland game hunting and big game hunting, while expanding hunting activities at 16 national wildlife refuges in 14 states.

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Chief's Corner

Being in the Arena

Two words keep coming up as the nine *Conserving the Future* implementation teams plan for a new tomorrow: communications and partnerships.



Jim Kurth

We're wildly successful and notably lacking in each. How's that possible? How can we improve?

Consider the establishment of the Everglades Headwaters National Wildlife Refuge and Conservation Area in Florida this

year. It conserves forest, wetland, grassland/shrub/savanna habitat and the area's ranching and farming heritage on a landscape scale. The success came from a partnership among three federal agencies, the Florida Fish and Wildlife Conservation Commission and at least two nonprofit organizations. All of us worked for years in partnership with one another and with a community of private landowners.

When we ultimately protect the entire 150,000 acres, two-thirds of the acreage will be held in conservation easements purchased from willing sellers.

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Refuge Update

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published on recycled
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Blackwater National Wildlife Refuge and partners are adapting to sea-level-rise-related "marsh migration." Page 6

FOCUS: Urban Wildlife Refuge Initiative

Of the 24 Conserving the Future recommendations, No. 13 might be the most ground-breaking. It introduced a novel concept: the urban wildlife refuge initiative. Pages 8-13

Monitoring Marsh Elevation and Sea-Level Rise

By Nicole Rankin

Oligohaline marshes are biologically diverse ecosystems upstream from tidal salt marshes and downstream from tidal freshwater marshes. Such marshes provide food and habitat for numerous bird species. Their tidal creeks provide forage habitat, nursery zones, spawning grounds and migratory corridors for aquatic invertebrate and fish species.

But oligohaline marshes—with their very low salinity—face big challenges from sea-level rise and its attendant saltwater intrusion at Savannah National Wildlife Refuge and other coastal refuges. The salinity in oligohaline marshes ranges from 0.5 to 5 parts per thousand (ppt), whereas full-strength seawater is 35 ppt.

As sea-level rise occurs, marshes are inundated, often resulting in significant habitat conversion or loss. To learn more about the impact of sea-level rise, the Southeast Region Inventory and Monitoring (I&M) Network is monitoring elevation in oligohaline marsh, salt marsh and pocosin wetlands at 18 coastal refuges in the South Atlantic Landscape Conservation Cooperative (LCC).

“This project will monitor rates of wetland elevation change and relative sea-level rise, and using this information, we can forecast the longevity of these habitats on refuges and actions we need to undertake to sustain natural resources,” says Southeast Region I&M Network coordinator Laurel Barnhill.

As a coastal ecologist with the Southeast Region I&M Network, I have been working with refuges and scientists from Atkins Global, an engineering consulting firm, to install rod surface elevation table (RSET) benchmarks at coastal refuges from North Carolina to Florida. It’s tough work that involves standing on a platform above marsh grasses and driving stainless steel rods 40 to 100 feet deep to reach a hard-soil subsurface.

We started last spring at Savannah Refuge, which includes low-lying wetlands along the South Carolina-Georgia border. In addition to saltwater intrusion,

development and harbor dredging threaten the marsh. The refuge once contained more than 6,000 acres of oligohaline and tidal freshwater marshes. In part because of past Savannah River dredging, the refuge has less than 3,000 acres of marsh today. Those marshes and their tidal creeks benefit king rail, least bittern, American coot, ducks, herons, white and brown shrimp, blue crabs, Atlantic croaker, bay anchovy, red drum and Atlantic menhaden, to name a few.



Scientists Dave O'Loughlin and Jeremy Schmid of Atkins Global, an engineering consulting firm, install a rod surface elevation table (RSET) benchmark at Pinckney Island National Wildlife Refuge, SC. The Southeast Region Inventory and Monitoring (I&M) Network is monitoring marsh elevation at 18 coastal refuges. (Nicole Rankin/USFWS)

The I&M network is monitoring elevation in oligohaline marsh, salt marsh and pocosin wetlands at 18 coastal refuges in the South Atlantic Landscape Conservation Cooperative (LCC).

Information from the marsh elevation monitoring project “will be essential for us to determine how to proactively respond to habitat changes that are due to factors largely outside of our control,” says Savannah Refuge supervisory wildlife biologist Chuck Hayes.

Starting this fall, marsh surface elevation is being measured from each RSET benchmark. Height measurements (in millimeters) are being taken by attaching the RSET instrument to the permanent benchmark and lowering pins to the

marsh surface. During the first year, measurements will be collected quarterly by refuge biologists; biannually the second and third years; and annually thereafter. Each RSET benchmark is also being surveyed so marsh surface elevation can be linked to local sea level. The information will be entered into a regional database for storage and analysis, and will be made available to biologists, planners and researchers.

In addition to the 18 refuges and Atkins Global, the Southeast I&M Network is partnering with the U.S. Geological Survey, The Nature Conservancy, the National Park Service, the South Atlantic LCC, the National Estuarine Research Reserve System and the National Geodetic Survey to develop and share data about landscape-scale changes resulting from sea-level rise.

“Working together is the only way we will be able to compile information to help answer questions at multiple scales,” says Barnhill. “We are leveraging multiple agency efforts in order to sustain our natural landscapes.”

Nicole Rankin is a coastal ecologist based at Cape Romain National Wildlife Refuge, SC.

QDMA and Refuges Seek to Conserve Swaths of Habitat

By Heather Dewar

The Quality Deer Management Association is thinking beyond its namesake species.

In an experiment involving landscape-scale wildlife habitat management, the nonprofit QDMA and three refuges are teaming with neighboring landowners to build a new conservation coalition.

The refuges—Washita and Deep Fork in Oklahoma and Shiawassee in Michigan—are helping QDMA set up private-public cooperatives, which met for the first time this fall. The goal is for landowners, refuge staff members, state biologists and QDMA experts to share ideas and information to conserve wildlife on swaths of land near refuges.

QDMA focuses primarily on sustainable management of white-tailed deer, but QDMA biologist Kip Adams says cooperative members will decide which wildlife species to protect—perhaps waterfowl, songbirds or native species.

“Deer are generalists,” says Adams, who leads the initiative. “Ninety percent of the time, if you create good deer habitat you’re creating good habitat for other species.”

At the first meeting near Washita National Wildlife Refuge, participants discussed managing land for quail and deer, according to refuge manager Amber Zimmerman, who is eager to take part in the experiment.

“First and foremost, we cooperate with others,” she says. “That’s right there in our mission statement. And everyone is realizing that to have a big impact you have to reach beyond your borders and manage on a landscape scale.”

Nine private landowners attended that meeting. Their holdings and the refuge’s 8,075 acres make a local conservation footprint of about 20,000 acres.

“People came in a bit leery,” Zimmerman says, but they warmed to the concept when they saw that QDMA, not the federal government, is taking the lead—



The Quality Deer Management Association and three refuges are teaming with private landowners to manage wildlife habitat on land near refuges for various species, not just deer. Here, deer and geese coexist at Washita National Wildlife Refuge in Oklahoma. (Levi Feltman/USFWS)

and “nobody is trying to tell them what to do with their land.”

Adams says biologists will encourage landowners to follow science-based management but won’t ask them to sign any agreements.

Reputation Is a Plus

Similarly, the refuges are “very important partners, [but] the Fish and Wildlife Service isn’t driving this,” he says. QDMA conducts landowner outreach; meetings are on private property; and most management suggestions will come from QDMA or state biologists.

Shiawassee Refuge biologist Michelle VanderHaar, the Michigan refuge’s liaison to the cooperative, thinks QDMA’s reputation among deer hunters is a plus.

“QDMA will get their attention,” she said before the local cooperative’s first meeting in October. “People in Michigan follow them closely.”

Darrin Unruh, Deep Fork Refuge manager, likes the cooperative’s potential to strengthen community ties. Founded in 1993, Deep Fork is a waterfowl refuge with many inholders—private landowners within the refuge boundary.

“For a refuge that has a checkerboard ownership, it’s really important to communicate with the neighbors,” Unruh says. The cooperative “will be an

educational process for inholders and should strengthen the relationship.”

The QDMA cooperative approach was field-tested at Sam D. Hamilton Noxubee Refuge in Mississippi, where it had a short but useful life, say Adams and Larry Williams, a former Noxubee deputy refuge manager.

Williams, who now heads the South Florida Ecological Services Office, left the Noxubee Refuge by the time the cooperative was launched in 2005 but kept track of its work. Initially, he says, the cooperative included all surrounding landowners. After a few years, though, participants lost a sense of urgency, and the cooperative waned. This time, Williams and Adams say, the refuges are signing on for the long haul.

Williams hopes the cooperatives lead to a powerful nationwide partnership with QDMA, similar to the Service’s relationship with Ducks Unlimited.

Roughly 10 million acres of refuge land is in white-tailed deer habitat, and U.S. deer hunters far outnumber waterfowl hunters, Williams says, “so it’s an important species for America and an important species for refuges.”

Heather Dewar is a writer-editor in the Refuge System Branch of Communications.

Sea Turtle Success at Archie Carr Refuge and Beyond

By Ben Ikenson

Were Archie Carr alive today, he no doubt would be pleased. The 2012 sea turtle nesting season at the refuge bearing his name was the best in 14 years, especially for loggerheads.

“It was incredible,” says Archie Carr National Wildlife Refuge manager Kristen Kneifl. “You could barely walk 10 steps without being on top of a nest.”

When Carr, a conservationist and University of Florida researcher, died in 1987, it was difficult to say if sea turtles were recovering because of protections under the Endangered Species Act and the international attention he helped bring to their plight. But two years later, nesting survey programs were established to monitor and assess sea turtle populations.

This year’s Archie Carr Refuge tally of 18,797 loggerhead turtle nests, 3,288 green nests and 50 leatherback nests is the highest since 1998 and markedly more than last year’s estimate of 18,000 for all three species.

With 20 miles of undisturbed Atlantic coastline in central Florida, the refuge includes what is considered one of the two most important loggerhead beaches in the world. The other is on Masirah Island in the Arabian Sea.

Fortunately, Archie Carr Refuge enjoys excellent and long-standing support in conserving the beach’s nesting habitat. Carr’s protégé, Llewellyn Ehrhart, and Ehrhart’s students at the University of Central Florida were monitoring these beaches for seven years in the 1980s before the state of Florida and the U.S. Fish and Wildlife Service established an index nesting beach survey program—and before the refuge existed. While Carr articulated the threats to sea turtles, which included commercial fishing practices, coastal development and poaching, Ehrhart’s data revealed the global importance of beaches in central Florida and helped lead to the refuge’s establishment.



A loggerhead sea turtle returns to the Atlantic Ocean at Archie Carr National Wildlife Refuge. This year, the Florida refuge had its best loggerhead nesting season since 1998. (Vince Lamb/Friends of Archie Carr National Wildlife Refuge)

Today, UCF students and other researchers conduct surveys and assess hatching success during nesting season from early March to late September. They also help Archie Carr Refuge collect data on predation, disorientation caused by light and other disturbances, which are reported to proper agencies for resolution.

Cautious Optimism

Because sea turtles in North America primarily nest on beaches along the Atlantic Southeast and Gulf of Mexico coasts, similar efforts are ongoing at refuges and conservation areas across the region, where the season’s nesting numbers have been encouraging. Cape Romain Refuge in South Carolina, for example, recorded close to 1,600 loggerhead sea turtles nests this year, the highest since 1978. Other refuges reporting increased nests include Blackbeard Island and Wassaw (in Georgia), and Merritt Island, Egmont Key and Hobe Sound (in Florida).

But biologists aren’t yet saying recovery is imminent for loggerheads or other sea turtles.

“We’re cautiously optimistic because we’ve seen an upswing in the numbers. But we really don’t know what this means in terms of the long-term situation for loggerheads,” says

Sandy MacPherson, the Service’s national sea turtle coordinator.

Kneifl points to daunting challenges associated with climate change.

“Global warming is a definite threat to sea turtles,” she says. “The temperature of the sand determines the sex of sea turtles, which could cause an imbalance in sex ratios. In 2012, the sea turtle nesting season began one month early due to warmer water temperatures. Sea-level rise will certainly have an effect on the availability and quality of nesting beach habitat.”

Still, monitoring remains crucial in determining the efficacy of conservation measures, such as those intended to decrease fishing industry turtle bycatch or increase the likelihood that hatchlings reach the water.

Chuck Hunter, chief of the Service’s Southeast Region strategic resource management division for refuges, says, “Only through long-term monitoring will we be able to tease these and other factors apart and make adjustments as needed to conserve nesting populations on U.S. beaches and protect the entire population at sea.” 🐢

Ben Ikenson is a New Mexico-based freelance writer.

Adapting to “Marsh Migration” at Blackwater Refuge

By Karen Leggett

Marsh at Blackwater National Wildlife Refuge is widely known as a stopover for migratory birds. What may be lesser known is that the marsh itself is migrating.

Since 1938, the Maryland refuge has lost 5,000 acres of brackish marsh—and 3,000 upland acres have converted to brackish marsh. A new strategy to address sea-level rise, called the Southern Dorchester County Climate Adaptation Project, is working to facilitate this “marsh migration.”

“If Blackwater is going to be successful at meeting its established purposes” as a waterfowl sanctuary along the Atlantic Flyway, says refuge biologist Matt Whitbeck, “we have to have wetlands, and we have to understand how to help marshes migrate across the landscape. We don’t claim to understand how this is going to work. It’s very much in the experimental stage—an adaptive management process.”

The goal of the project—a partnership among the U.S. Fish and Wildlife Service, The Conservation Fund and Audubon Maryland/DC—is to maintain the ecological functions of the salt marsh somewhere on the landscape. The refuge is part of the Northeast’s most extensive contiguous tidal marsh, a Ramsar Wetlands of International Importance and an Audubon Important Bird Area for salt marsh bird species. Audubon Maryland/DC director of bird conservation Dave Curson has called the refuge “Maryland’s Everglades.”

The tiny saltmarsh sparrow, whose primary range is the northeastern United States and Canada, is directly affected by sea-level rise, as are black rails, clapper rails and seaside sparrows.

“If we want these species to persist, we have to adapt to these changes,” says Whitbeck. “The saltmarsh sparrow is just one piece of the puzzle. As we evaluate how these systems migrate across the landscape, we have to know how all the pieces will move as well.



In partnership with The Conservation Fund and Audubon Maryland/DC, the U.S. Fish and Wildlife Service is trying a new strategy to address sea-level rise at and near Blackwater National Wildlife Refuge in Maryland. The saltmarsh sparrow is directly affected by sea-level rise. (Matthew Tillett)

It’s responsible stewardship to hang on to all the pieces.”

And all the pieces are connected. The salt marsh provides vital nursery grounds for commercial fisheries, generates \$27 million in annual revenue from tourism/recreation, creates a buffer for communities against storm surges, and filters sediment and nutrient pollution in the Chesapeake Bay watershed.

“We don’t claim to understand how this is going to work. It’s very much in the experimental stage.”

The salt marsh birds are among the keystone species in the Strategic Habitat Conservation Plan for the Chesapeake Marshlands Refuge Complex, which includes Blackwater Refuge. The landscape-level, across-

boundary actions taken and the lessons learned in the Southern Dorchester County Climate Adaptation Project may be a model for other coastal zones confronting sea-level rise.

The project is in the second year of a grant cycle that provided \$265,000 from Maryland’s Town Creek Foundation. Using the Sea Level Affecting Marshes Model (SLAMM) and other factors, the project identified where the “largest jaw-dropping contiguous areas of high marsh habitat are likely to be over the next century,” Whitbeck says. “We will control what we can and work with the changes we can’t control.”

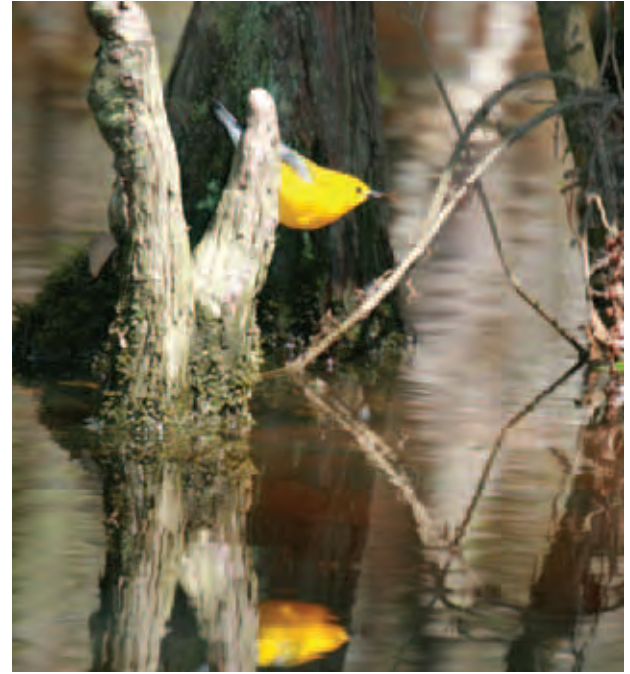
Two examples illustrate the project’s approach. The first is biological, the second outreach-related.

Traditionally, refuge managers have removed phragmites from established marsh. Now, before that invasive reed can take hold, herbicides are used to remove it from areas to which marsh is migrating. Then, students and Friends help plant native species there. “If we can manage phragmites in transition, we might be able to improve more acres with the same amount of resources,” says Whitbeck.

Regarding outreach, Samantha Pitts, Audubon Maryland/DC volunteer coordinator and naturalist, is using social media, educational programs and field trips to build support for salt marshes. The local Pickering Creek Audubon Center’s Facebook page, for example, features educational posts about Atlantic Flyway salt marshes on Marsh Mondays.

“It’s important for communities to have their own connection with where they live,” says Pitts, “Blackwater is the epicenter for salt marshes on the East Coast. We are trying to reach people and connect them with the resource.” 🦋

Karen Leggett is a writer-editor in the Refuge System Branch of Communications.



The Migratory Bird Conservation Commission approved acquisition of habitat at Red Rock Lakes National Wildlife Refuge in Montana, left, and Waccamaw National Wildlife Refuge in South Carolina, right. (USFWS)

Seven Refuges Acquire Wetland Habitat

Seven national wildlife refuges grew by about 10,640 wetland acres all told when the Migratory Bird Conservation Commission (MBCC) approved almost \$11 million in land acquisitions at its final meeting of 2012.

The National Wildlife Refuge System purchases were announced in September by Interior Secretary Ken Salazar.

Of particular note is the commission's action at Red Rock Lakes National Wildlife Refuge, MT. By approving a boundary expansion of more than 12,000 acres in the largest wetland

complex in the Greater Yellowstone Ecosystem, the commission is protecting high densities of breeding lesser scaup and breeding trumpeter swans. Of that expansion, about 6,600 acres were acquired.

The habitat purchases and leases were supported by the Migratory Bird Conservation Fund (MBCF), which includes proceeds from the sales of Migratory Bird Hunting and Conservation Stamps, aka Duck Stamps.

Here are the refuge acquisitions:

Red Rock Lakes Refuge, MT—Boundary addition of 12,352 acres, including acquisition of 810 fee acres at \$3.6 million and 5,834 lease acres at \$11,085, to protect breeding habitat for 21 species of waterfowl.

San Bernard Refuge, TX—Boundary addition and price approval for 1,441 fee acres for \$2.59 million, to benefit wintering, migratory and resident waterfowl.

Trinity River Refuge, TX—Boundary addition and price approval for 200 fee acres for \$176,200, to protect biologically significant bottomland hardwood forest for waterfowl as part of the East Texas Bottomland Hardwood Initiative.


Montezuma Refuge, NY—625.39 fee acres for \$2.38 million, to increase the refuge's capacity to support an additional 9,000 migratory waterfowl in spring and more than 18,000 in fall.

Tualatin River Refuge, OR—23.59 fee acres for \$82,500, to support large populations of wintering waterfowl, including tundra swans, mallards, northern pintails, canvasbacks, ring-necked ducks and lesser scaup.

Tulare Basin Wildlife Management Area, CA—164 easement acres for \$309,000, for winter foraging and nesting habitat for waterfowl, including mallards, northern pintails, gadwall, cinnamon teals and northern shovelers.

Waccamaw Refuge, SC—1,542.83 fee acres for \$1.85 million, for habitat consisting of alluvial bottomland hardwoods and a network of oxbow lakes, ephemeral creeks, and tidal lakes and sloughs.

The commission also approved \$18.4 million in federal funding to conserve more than 95,000 acres of wetlands and associated habitat in the United States under the North American Wetlands Conservation Act (NAWCA).

Since 1929, the MBCC has met several times a year to consider land purchases through the MBCF. Its next meeting is scheduled for March 2013. More information is at <http://www.fws.gov/refuges/realty/mbcc.html>. 

Focus...Urban Wildlife Refuge Initiative

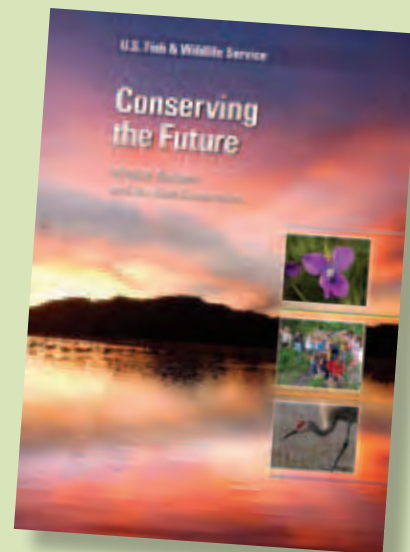
Conserving the Future

Last year, hundreds of U.S. Fish and Wildlife Service employees and partners forged the *Conserving the Future: Wildlife Refuges and the Next Generation* vision for the National Wildlife Refuge System. This year, we are implementing that vision.

In 2012, *Refuge Update* has been presenting a series of Focus sections devoted to the implementation. This Focus section, the final installment in that series, looks at some objectives of the Urban Wildlife Refuge Initiative implementation team as they pertain to recommendation 13 of the vision.

Recommendation 13: Create an urban refuge initiative that defines excellence in our existing urban refuges, establishes the framework for creating new urban refuge partnerships and implements a refuge presence in 10 demographically and geographically varied cities across America by 2015.

The section includes articles about where the urban wildlife refuge initiative stands, and how existing urban refuges in Michigan, New England, California, Louisiana and New York are connecting with their communities. 🐦



Conserving the Future Teams Develop Training — continued from page 1

ways that refuges and other conservation agencies across the country have attracted and engaged new recreation users. The case studies will determine how these opportunities were developed and implemented. They will be a great resource for Refuge System employees.

At the same time, the team is developing a pilot outdoor skills program, including new staff training and guidance on creating, maintaining and staffing outdoor skills centers, where refuges can show the finest ways they are working with states and other partners to teach new recreation skills to the uninitiated.

The Interpretation and Environmental Education implementation team is refining a revitalized Ambassadors Program, both to help increase awareness of the Refuge System and to develop ongoing training for staff, volunteers and partners in how to communicate enthusiastically, clearly and effectively. Training will be comprehensive, ranging from customer service and hospitality to interpretation and a train-the-trainer element.

The team also recognizes that Americans today are embracing “anytime,

anywhere” methods of learning, even as millions are craving meaningful hands-on experiences. So, the team is exploring how to blend traditional approaches to environmental education with the need to incorporate mobile platforms. Among the team’s ideas are a more comprehensive menu of “citizen science” programs and tools to engage visitors and volunteers in conservation-related work. The team is also seeking new ways to offer unstructured nature exploration areas at refuges.

Two themes run through the work of all nine implementation teams: partnerships and communications.

Working in partnership with the Aldo Leopold Foundation, the team plans to launch a new Land Ethic Leaders program for community and conservation officials to reflect on how they and their communities can build relationships to land and water. A series

of two-day training sessions are expected to be piloted at selected refuges through early 2014.

Over the past year, *Conserving the Future* implementation coordinator Anna Harris has found that two themes run through the work of all nine implementation teams: partnerships and communications.

“We recognized in the *Conserving the Future* document that no single organization can elevate the status of conservation in Americans’ minds and their daily lives,” said Harris. “As strategies become realities, it’s become clear that we need not only cross-team approaches to blend the work of volunteers, Refuge Friends and Refuge System staff; we also need to work with state fish and wildlife agencies, conservation partners and a host of others across the country to achieve the ambitious goals of *Conserving the Future*.”

For more information about *Conserving the Future* implementation and to follow the progress of the teams, go to <http://AmericasWildlife.org/>. 🐦

Conservation in the City

By Bill O'Brian

Of the 24 *Conserving the Future* recommendations, No. 13 might be the most ground-breaking. It introduced a novel concept: the urban wildlife refuge initiative.

Recommendation 13 has three parts.

First, it mandates defined standards of excellence for the dozens of existing urban national wildlife refuges. Second, it mandates establishment of a framework for creating new urban refuge partnerships. Third, it mandates a new refuge presence in 10 demographically and geographically varied cities by 2015.

The *Conserving the Future* Urban Wildlife Refuge Initiative implementation team—co-chaired by U.S. Fish and Wildlife Service Midwest Region deputy regional refuge chief Tom Worthington, Northeast Region regional refuge chief Scott Kahan, and Headquarters visitor services and communications chief Marcia Pradines—is addressing those mandates.

The standards of excellence are a work in progress. Once approved by National Wildlife Refuge System leadership, the standards will articulate best practices related to community engagement; cultivating partnerships; financial resources and leveraging funding; sustainability and leading by example; urban access to refuges; dispelling urban fears and myths about wildlife; making the Service an authentic member of the community that promotes conservation beyond refuges; and more.

“Just like conservation must happen at a landscape level, so must engagement,” says Pradines.

“This isn’t about creating new refuges or places, or developing a program on our own. It’s about the Service partnering with the community.”

The implementation team has met with more than a dozen of the nation’s leading

conservation organizations and with colleagues from other Service programs to discuss a framework for new partnerships. “Without exception, they are all keenly aware of the need to reconnect and restore conservation relevance with the growing urban population,” says Worthington.

A new Refuge System presence in 10 cities, also a work in progress, will “foster a more informed citizenry that actively supports and understands the value of conservation,” says Kahan.

Training Scheduled

A key component of the refuge urban presence effort, says Pradines, will be “nurturing staff culture to understand how to work in communities that are diverse in generations, wildlife values and ethnicities. We know how to work with people who *already* value conservation and love wildlife. How do we reach and impact the others without sounding preachy and with effectiveness?”

The implementation team has scheduled a training of staff from existing urban refuges, as well as partners, next fall at the National Conservation Training Center to discuss the urban wildlife refuge initiative.

One topic likely to emerge is exactly how the urban concept fits into the Service mission. The initiative does not call for the establishment of new urban refuges, but it does not dismiss the idea, either.



Interior Secretary Ken Salazar presses the flesh at newly established Valle de Oro National Wildlife Refuge near Albuquerque, NM. The urban wildlife refuge initiative calls for a new Refuge System presence and new partnerships in cities. (Tami Heilemann/DOI)

“We know that the strategic growth of the Refuge System will be guided—very correctly—by biological criteria, criteria that by and large would not put a very high priority on lands or waters in urban settings,” says Worthington. “We also know there are rare and extraordinary circumstances where a refuge in an urban context can have societal and System-wide values that overshadow their strictly biological contributions ... In those rare and exceptional situations, the Service will look favorably at the possibility of establishing a refuge in an urban area.”

That said, Worthington is quick to praise biological successes at existing urban refuges, particularly salt marsh recovery at Don Edwards San Francisco Bay Refuge, trout spawning “in the shadow of the Mall of America” at Minnesota Valley Refuge, and the overall ecological benefit of Silvio O. Conte Refuge in New England.

“Urban refuges aren’t just for people,” he notes. 🦋

Focus...Urban Wildlife Refuge Initiative



From 1946 until 1990, this recently restored habitat in Michigan was an industrial site. From 1990 until 2002, it was a brownfield. Now it is becoming the gateway to Detroit River International Wildlife Refuge. (Jerry Jourdan)

An Extreme Makeover at Detroit River Refuge

By John Hartig

What comes to mind when you think of Detroit? Automobiles? Motown? Professional sports?

Each of those answers is accurate, but you may be surprised to learn that the Motor City is also becoming well recognized for public-private partnerships for conservation and outdoor recreation through the efforts of Detroit River International Wildlife Refuge.

Not only is Detroit River Refuge the lone international wildlife refuge in North America, it also is one of the few bona fide urban refuges in the National Wildlife Refuge System.

Nearly seven million people live within a 45-minute drive of the refuge, which incorporates more than 5,700 acres along 48 miles of the lower Detroit River and western Lake Erie. The refuge focuses on conserving, protecting and restoring habitat for 29 waterfowl species, 23 raptor species, 31 shorebird species, more than 100 fish species and more than 300 bird species.

A sure sign of major conservation progress in this resolutely urban area is that more than 100 public and private partners have come together over the past eight years to clean up an industrial brownfield and transform it into the Refuge Gateway—high-quality wildlife

habitat and the possible home of a Detroit River International Wildlife Refuge visitor center.


The Refuge Gateway will serve as a hub for environmental education and outdoor recreation. It also will be a model of sustainability. Everything visitors see and do will teach them how to live sustainably.

For 44 years, from 1946 to 1990, the 44-acre waterfront site housed an automotive brake and paint plant facility. After the facility was closed, the site sat vacant as an industrial brownfield for 12 years before Wayne County acquired the land in 2002 for development as the Refuge Gateway. In 2004, a county-U.S. Fish and Wildlife Service master plan was developed to guide cleanup, restoration and construction work for public-use infrastructure, including a Leadership in Energy and Environmental Design (LEED) platinum-rated visitor center, a school ship dock and public fishing pier, a kayak landing, an innovative storm water treatment system and greenway trails. All cleanup/restoration was completed this fall.

The transformation of the Refuge Gateway can best be described as an extreme makeover. It includes daylighting a creek, restoration of 16 acres of wetlands in a river that has lost 97 percent of its coastal wetland habitat, control of invasive phragmites along 2.5 miles of shoreline, restoration of 25 acres of upland buffer

habitat and control of other invasive species on 50 acres of upland habitat.

The Refuge Gateway is adjacent to the refuge's 410-acre Humbug Marsh Unit. Humbug Marsh is Michigan's only Wetland of International Importance designated under the Ramsar Convention. Humbug Marsh is ecologically vital to the Detroit River corridor and the Great Lakes Basin Ecosystem. It represents the last mile of natural shoreline on the U.S. mainland of the river. Humbug Marsh supports remarkable biodiversity, including 51 fish species, 90 plant species, 154 bird species, seven reptile and amphibian species, and 37 dragonfly and damselfly species. The transformation of the Refuge Gateway expands the ecological buffer for Humbug Marsh.

Nationally, Detroit River International Wildlife Refuge has been recognized by the White House Conference of Cooperative Conservation for its leadership in use of public-private partnerships for conservation and outdoor recreation. Locally, the refuge is helping change the perception from that of a Rust Belt city to one where urban conservation efforts reconnect people to nature, improve quality of life, showcase sustainable redevelopment and enhance community pride. 

John Hartig is Detroit River International Wildlife Refuge manager.

At Conte Refuge, Partners Conserve the Watershed

By Bill O'Brian

Andrew French fully appreciates the urban refuge concept of bringing the place to the people if the people can't or won't come to the place.

The place is Silvio O. Conte National Fish and Wildlife Refuge. The people are the 2.4 million residents of the 396 communities in the Connecticut River watershed, which encompasses the refuge's legislated project area. Refuge manager French, staff and partners have been bringing the refuge to the people for three years via the Watershed on Wheels (WoW) Express, a mobile visitor center.

Now that Interior Secretary Ken Salazar has designated the Connecticut River as the first national blueway, French hopes to bring more people to the refuge.

Last spring's national blueway designation was a milestone.

"It's pretty darn impressive when you remember that 40-50 years ago the Connecticut River was described as the nation's best landscaped sewer," says French. He sees the blueway designation as an endorsement of the Friends of Conte Refuge and the watershed partnership concept.

Conte Refuge "is the only true watershed project in the National Wildlife Refuge System. The Secretary said, 'It's not only okay; I want to see more of this,'" says French. "It's my hope that other refuge managers will seize the opportunity created by Secretarial Order 3321, look up into *their* watersheds and figure out how to network their refuge into a watershed partnership, making the Service and the System more relevant to people and beneficial for our trust resources."

The Friends and more than 50 conservation, recreation, economic and education partners have networked to form an association of private/federal/state/local/non-governmental



Last spring, Interior Secretary Ken Salazar designated the Connecticut River and its watershed as the first national blueway. The watershed comprises the entirety of Silvio O. Conte National Fish and Wildlife Refuge's legislated project area. (Lamar Gore/USFWS)

organizations to increase outdoor recreation and the conservation estate that, French says, "is approaching two million acres." In other words, more than 20 percent of the watershed's 7.2 million acres are conserved.

French, the Take Pride in America 2012 U.S. Fish and Wildlife Service federal land manager of the year, expects to use the national blueway status to engage even more people and federal agencies in the watershed.

The refuge plans to work with partners in coming years to establish a water trail along the Connecticut River's 410-mile course from Canada to Long Island Sound. The objective, says French, is to have boat access every 10 miles and overnight accommodations (public or private campsites/lodging) every five miles. The water trail would be educational, too. Information panels and QR codes en route would highlight natural history, wildlife biology and points of interest.

The goal is to give people a top-flight outdoor experience within the watershed. "If we can strike a balance between sustaining high-quality habitat while accommodating the demand for quality and compatible recreation, we'll have

to do a lot less advocating for our trust resources—because others will do it for us," says French.

Nonetheless, Conte Refuge remains committed to bringing the refuge to the people. It is developing three new outreach endeavors to cultivate citizen stewards. Conte Corners are refuge exhibits at museums, environmental centers and elsewhere. Adopt a Habitat encourages schools to help manage watershed land similar to a refuge. The Biological Assessment Trailer (BAT) Express serves as a mobile lab that supports plant and animal inventorying events at schools.

Then there's the WoW Express.

"It takes the show on the road, promoting Service messages at schools, camps, fairs and community events. It allows us to introduce the Service, the System, the refuge, the watershed and our trust resources to rural, suburban and urban audiences alike," says French. "The WoW Express allows us to make strategic first contacts, but we have to take the next step to nurture the relationship to expand our relevancy to a diverse constituency. Beyond our mission and related successful outcomes, relevancy is the big thing." 🦋

Focus...Urban Wildlife Refuge Initiative

Reaching Out to Traditionally Under-Served People

As the *Conserving the Future* urban wildlife refuge initiative takes shape, refuges have been taking steps large and small to connect traditionally under-served people with conservation and nature. Here are just three examples.

San Diego Bay National Wildlife Refuge, CA

The refuge's Sweetwater Marsh unit is in the city of Chula Vista, seven miles from downtown San Diego. The refuge is engaging Hispanics and other urban residents in cooperation with two nonprofit organizations.

In conjunction with *Celebra las Playeras* (Celebrate Shorebirds), the refuge hired seasonal intern Jennifer Keliher-Venegas for three months this fall to promote the refuge at community centers, schools and libraries in Chula Vista, which is 58 percent Hispanic. *Celebra las Playeras* is funded by the U.S. Fish and Wildlife Service and Environment for the Americas, a nonprofit devoted to international bird conservation. The program, which also placed interns at Don Edwards San Francisco Bay Refuge and Oregon's Bandon Marsh Refuge, aims to foster a connection between nature and Latinos.

San Diego Bay Refuge also works with the Living Coast Discovery Center to help make that connection. The center, a nonprofit aquarium/zoo that draws about 70,000 visitors annually, leases land from the Service on the 316-acre Sweetwater Marsh unit. A shuttle operates daily to take center visitors across a parcel of private property to the refuge trails.

Bayou Sauvage National Wildlife Refuge, LA

This 24,000-acre refuge is within the city limits of New Orleans, whose population is 60.2 percent African American. To reach out to the black population, for the past three years the refuge has been part of the C2E (Connect 2 Educate)



Wertheim National Wildlife Refuge, in the Long Island suburbs east of New York City, recently persuaded Suffolk County Transit to put a bus stop at the refuge entrance. (USFWS)

Collaborative, which puts the refuge and other local organizations in touch with the city's public schools. The collaborative produces the Connect 2 Educate (C2E) Notebook: A Public Schools Guide to Community Resources, in which the refuge is listed.

When school groups visit, the refuge offers several environmental education programs, including a 2½-hour "Survival Wetland Wildlife Style" session for second- and third-graders and a four-hour "Habitat Is Where It's At" program for fourth- to sixth-graders. In addition, refuge staff is in regular contact with principals and science coordinators. And, when time and resources allow, refuge rangers visit city schools.

Wertheim National Wildlife Refuge, NY

As the Long Island refuge was opening its new visitor center this year, it contacted Suffolk County Transit about putting a bus stop at the refuge entrance.

The transit authority agreed, and now the Route 7E bus stops at the refuge. The refuge will be labeled on the Suffolk County Transit system map.

The new bus connection "provides visitors and refuge volunteers who do not use a vehicle the opportunity to access the refuge," says refuge manager Michelle Potter. "I think it could change the face of our visitors to some extent ... Public transportation is an avenue that urban refuges can utilize in an effective manner to increase awareness of the Refuge System."

This trend is not only among local residents, Potter says. "We recently had a couple from Germany who came out from New York City on the Long Island Rail Road and a Suffolk County Transit bus specifically to visit the refuge."



*Compiled by David Wagner and
Bill O'Brian*

Let It Rain

By Amanda Fortin

The first three months of 2012 were even wetter than normal in metropolitan Portland. March alone saw a record 7.89 inches of rain. It impacted everything from rivers to roads and didn't do much to improve the malaise that sets in for Oregonians that time of year. At Tualatin River National Wildlife Refuge, however, the rain was fun, fun, fun—thanks to the Puddle Stompers program.

While many Portlanders remained indoors, kids and their parents put on rain gear and ventured out to the refuge. From January through March, refuge staff and volunteers led six sessions in which young nature enthusiasts (ages one to five) sang songs, read stories, went on walks and, of course, stomped in puddles. They did it all in the name of learning about the animals that thrive in Oregon's rainy climate.

About to enter its fourth year, Puddle Stompers registers individuals and groups, such as day care centers, for its sessions. The program, which is promoted in Friends, volunteer and refuge newsletters and local Web sites, is so popular there is often a waiting list.

"The goal of Puddle Stompers is connecting young people with nature," says Gardiner Platt, environmental education coordinator at Tualatin River Refuge. "We have a weekly theme—like ducks, frogs or water—and we get dirty and have fun exploring them."

The kids aren't the only ones having fun.

"We didn't anticipate how important this connection would be for parents," says Platt. "They are having a good time alongside their little ones and seeing winter weather and wildlife in new ways."

Just ask Carissa Ainoa, mother of 15-month-old Anuheia: "Not only did the group learn about tadpoles becoming frogs, the kids were actually dressed like frogs in their matching rain gear, which was really funny."



Tualatin River National Wildlife Refuge outside Portland uses western Oregon's plentiful precipitation to good advantage in an education program for kids that is fun, fun, fun—as this Puddle Stomper makes clear. (USFWS)

That gear was supplied by the refuge and Challenge Cost Share, a Service grant-matching program that provided start-up money for Puddle Stompers. Recurring costs—supplies and educational staff positions, such as Platt's full-time job—are covered by Friends of Tualatin River Refuge grants.

"What is better than stomping in puddles and learning at the same time?"

Nearly 500 kids and adults have splashed and splashed with Puddles Stompers so far, estimates visitor services manager Kim Strassburg, who came up with the idea. "I went to the YMCA during winter and saw little kids and parents inside participating in crafts," she says,

"but back at the refuge there were no preschool children and parents out exploring."

Strassburg saw a need to "make going outside in winter fun and attractive to parents and their children," and Puddle Stompers was born. "What is better than stomping in puddles and learning at the same time?"

Refuge manager Erin Holmes echoes Strassburg. "It is really about the joy of being outside," Holmes says. The kids "don't have to know the names of the trees, bugs or birds, but if they know they can come

here to discover them, that is what we want."

Platt calls volunteers "the heart and soul of Puddle Stompers ... They plan the activities, choose the stories, lead the walks and even write some of the songs we sing."

Because of the program's growing popularity, Platt plans to increase its capacity slightly when it runs again January through March 2013.

"Kids and parents tell me they look forward to it each week," says Platt. "We offer the opportunity for discovery, and we want to continue to do this, rain or shine." 🦵

Amanda Fortin is a Student Career Experience Program (SCEP) intern in the Pacific Region office in Portland.

Around the Refuge System

Oregon-Nevada

An aerial survey of Hart Mountain and Sheldon National Wildlife Refuges showed a record number of pronghorn last summer. The refuges are co-managed and just 15 miles apart—Hart Mountain in southeastern Oregon and Sheldon in northwestern Nevada. Each summer since the 1950s, refuge staff has conducted surveys to monitor pronghorn population. Results indicate pronghorn numbers have been increasing, particularly since the 1990s. Until recently the population within the refuges was estimated at 3,700. This summer, the record was shattered when more than 6,200 pronghorn were seen at the refuges. Both refuges were established in the 1930s for the conservation of pronghorn and other wildlife native to the Great Basin. In the 1920s, pronghorn were believed to be near extinction with fewer than 20,000 remaining; today, the species is estimated at nearly one million animals from Mexico to Canada.

In related news, Friends of Nevada Wilderness volunteers and U.S. Fish

and Wildlife Service staff removed the final four miles of old range fence from Sheldon Refuge. To make the interior of the refuge fence free, volunteers and staff have taken down more than 150 miles of barbed-wire since 2009. Fencing interferes with pronghorn migratory paths and water access, and it can harm sage-grouse, low-flying birds that become entangled in the barbed wire.

Florida

J.N. “Ding” Darling National Wildlife Refuge and its Friends group made a powerful statement in the global battle against plastic debris this fall. On National Public Lands Day, the Gulf Coast refuge rolled out its “Kick the Bottle” campaign and ended sales of bottled water at its Nature Store. Instead, the store now sells reusable, collapsible water bottles labeled with the refuge’s name and a Kick the Bottle logo for \$1.25, just 25 cents more than it charged for bottled water.

“We already have clean, filtered water, and we would rather make it easier for people to refill their bottles than to sell

disposable bottled water, which is both wasteful and hazardous to wildlife,” said refuge manager Paul Tritaik.

“It takes the United States only 27 hours to use enough water bottles to encircle the Earth’s equator if laid end-to-end,” said supervisory refuge ranger Toni Westland. She indicated that the refuge plans to promote the Kick the Bottle initiative beyond its boundaries.

In other news, Ding Darling Refuge was among six tourism spots worldwide to receive a 2012 Phoenix Award from the Society of American Travel Writers. Since 1969, the prestigious award has recognized destinations that have contributed to a quality travel experience through conservation, preservation, beautification or environmental efforts.

Illinois

Two national wildlife refuges are part of Illinois River habitat that has been named a Wetlands of International Importance under the Ramsar Convention. Chautauqua Refuge, Emiquon Refuge and The Nature Conservancy-owned

Emiquon Preserve together have been recognized as the 34th Ramsar site in the United States. There are more than 2,000 such sites worldwide. The Ramsar Convention is an international treaty signed in Ramsar, Iran, in 1971 to encourage voluntary protection of wetlands. Countries that sign the treaty demonstrate commitment to conserve wetlands as a contribution toward sustainable development. The



An aerial survey of Hart Mountain and Sheldon National Wildlife Refuges showed a record number of pronghorn. Here a herd speeds across Sheldon Refuge in northwest Nevada. (Gail Collins/USFWS)

newly recognized site, called the Emiquon Complex, lies within the former natural floodplain of the Illinois River. The site and adjacent lands support at least 87 species of fish, 23 freshwater mussels, 19 amphibians, 41 reptiles, 260 birds and 28 mammals, many of which are state endangered, threatened or rare.

Rhode Island

Just days after Sachuest Point National Wildlife Refuge reopened its renovated visitor center, 100 college student volunteers helped restore native shrubland and clean up beaches at the refuge five miles east of Newport. About 80 students from Providence College and 20 from Roger Williams University spent almost 800 hours cumulatively on consecutive days planting native shrubs, clearing debris and litter from the coastline and improving beach habitat by removing invasive Asiatic sand sedge. Native shrubland is essential for many species of migratory birds, and Sachuest Point Refuge is a critical stopover point along their flyway. The refuge is also working to provide habitat for the New England cottontail rabbit, which benefits from shrubland restoration. Students pulled the invasive sedges to make room for native grasses and wildflowers to grow back. Next spring, refuge staff and volunteers plan to further restore the land by planting native beachgrass plugs. The visitor center was renovated to install new exhibits that tell the story of Sachuest Point, which over centuries has been a Native American settlement, a farm, a sheep ranch and a Navy communications center.

Nebraska

The Service and the Nebraska Game and Parks Commission are joining forces this fall to make improvements for fishing access at Valentine National Wildlife Refuge. Boat ramps are being built, replaced or improved at four of the nine lakes that are open to fishing at the refuge. All of the ramps will be Americans with Disabilities Act (ADA)-accessible. The projects are being funded with U.S. Fish and Wildlife Service visitor facilities enhancement funding and money from

the purchase of Nebraska Aquatic Habitat Stamps. Valentine Refuge attracts about 15,000 fishing visitors annually. Available species include largemouth bass, yellow perch, bluegill and northern pike.

North Dakota

Audubon National Wildlife Refuge won a 2012 Federal Energy and Water Management Award presented by the Department of Energy. The refuge was honored for the sustainable design and Leadership in Energy and Environmental Design (LEED) gold rating of its 17,123-square-foot visitor center/headquarters. The \$6.1 million building, completed with American Recovery and Reinvestment Act funding in 2010, emphasizes energy efficiency, renewable energy, recycled materials and water conservation. Its total energy savings compared to an average building is approximately 289.2 million BTUs per year. Its energy intensity is estimated to be 67 percent less than the building it replaced, and it minimizes greenhouse gas emissions by some 30 metric tons of carbon dioxide equivalents annually. The award cited the Audubon Refuge project team of Michael Crocker, Sheri Fetherman, Jackie Jacobson, Lloyd Jones, Eric Jordan and Gary Williams.

Take Pride Awards

Andrew French, project leader at Silvio O. Conte National Fish and Wildlife Refuge in New England, and the Friends of St. Croix Wetland Management District have been named 2012 Take Pride in America Award winners.

French was cited as the U.S. Fish and Wildlife Service's Federal Land Manager

Washington



The Environmental Education Center at Nisqually National Wildlife Refuge has new artwork in its entryway—a hand-painted tile mural highlighting salmon species of the Pacific Northwest. The mural was created and installed by six-to-12-year-old students at Mariah Art School in nearby Olympia. It is the latest of four murals the school has installed since the center opened in 2009. With the largest estuary restoration project in the Puget Sound region underway at Nisqually Refuge, critical salmon habitat is returning. (Michael Schramm/USFWS)

of the Year. The award honors a manager who has demonstrated an innovative approach to managing volunteers on federal lands. French was recognized for his leadership and creativity in fostering productive and far-reaching partnerships that have benefitted conservation and communities in the four states the refuge spans in the Connecticut River watershed: Vermont, New Hampshire, Massachusetts and Connecticut.

St. Croix WMD Friends group was cited in the nonprofit group category. The group was recognized for a string of accomplishments in 2011-12. The Friends group introduced local residents to the wetland management district's prairie habitat in west-central Wisconsin via numerous outreach events; used a National Fish and Wildlife Foundation grant to develop an auto tour birding guide of the district and state wildlife area; and used grants and partnerships to encourage residents to volunteer for habitat restoration work. As a result, 468 people contributed more than 4,800 volunteer hours to the WMD. 

Civil War History at Lower Rio Grande Valley Refuge

By Douglas Murphy

Lower Rio Grande Valley National Wildlife Refuge in deep South Texas is one of the most biodiverse refuges in North America. It draws tens of thousands of visitors annually from across the nation. Unbeknownst to many of them, the 90,000-acre refuge along the winding Rio Grande also includes the site of the last land battle of the Civil War—the Battle of Palmito Ranch.

Soon, history enthusiasts will have an opportunity to experience the site's heritage.

Working with the National Park Service and Texas Historic Commission, Lower Rio Grande Valley Refuge is building an overlook of the Palmito Ranch battlefield and developing interpretive information about the clash that occurred on refuge grounds.

During the Civil War, the Rio Grande delta attracted attention, not for its wildlife but as a vital depot for the Confederate cotton trade.

“White Gold”

When U.S. naval ships sealed off ports from Virginia to Texas, Confederate leaders transported their “white gold” across the Rio Grande, loaded it onto Mexican flagships and sailed it safely past the blockading forces. For years, trade through the region helped sustain the Confederate war effort.

The thriving trade made Fort Brown, in the city of Brownsville, a strategic location. In November 1863, Union forces invaded the Texas coast and occupied Brownsville to halt the flow of cotton. Confederate troops recaptured Brownsville in July 1864 and pushed the Union troops back to Brazos Island, the southernmost barrier island on the coast. The two forces would be divided by the 20 miles of coastal prairie for the remainder of the war.

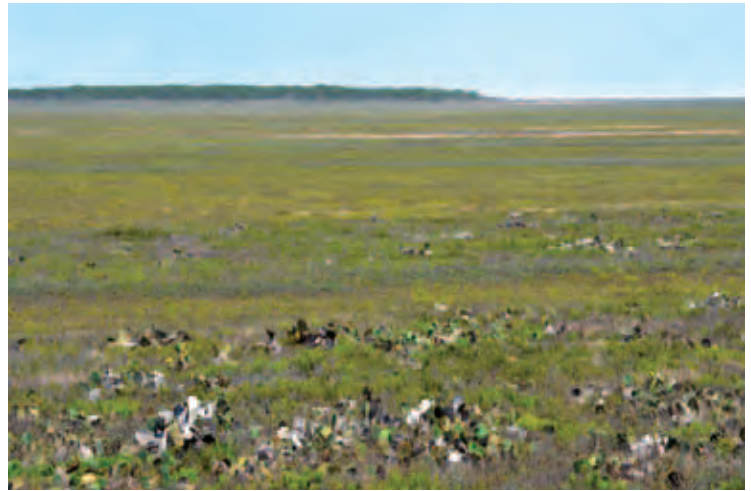
After the surrender of Confederate Gen. Robert E. Lee at Appomattox, VA, on April 9, 1865, the military leaders on

the Rio Grande wisely adopted an informal truce.

But that agreement collapsed on May 12, 1865, when Col. Theodore Barrett led 300 Union troops inland to Palmito Ranch on the banks of the Rio Grande, engaging Confederate pickets in an apparent attempt to capture Brownsville. Confederate troops responded the next day, when 350 cavalry soldiers drove back the Union forces. Union troops counted two killed, 28 wounded and more than 100 captured. Confederate troops suffered only minor casualties and earned a final victory in an otherwise lost cause.

Today, the Lower Rio Grande Valley Refuge preserves the Palmito Ranch battlefield in much the same natural state as it appeared in 1865.

The coastal prairie and lomas are home to many of the 1,200 documented plant species that thrive in the rich soils of the



This flatland at Lower Rio Grande National Wildlife Refuge was the site of the final land battle of the Civil War, which occurred after the April 1865 Confederate surrender at Appomattox, VA. (Scot Edler/USFWS)

Rio Grande delta, where four climates (temperate, desert, coastal and subtropical) converge and the growing season is 365 days.

Birdwatchers' Paradise

The refuge lies at the northernmost point for many birds migrating from Central and South America and at the juncture of two migratory flyways, the Central and Mississippi—making it a birdwatchers' paradise. More than 520 documented bird species include neotropical migratory birds, shorebirds, raptors and waterfowl. Among them are the aplomado falcon, green jay, plain chachalaca, great kiskadee, red-billed pigeon, Altamira oriole and ringed kingfisher.

The Lower Rio Grande Valley also boasts approximately 300 documented species of butterfly, many of which cannot be seen elsewhere in the United States. The endangered ocelot, a favorite South Texas feline, is part of this historic landscape, too.

A site set aside to preserve wildlife is also preserving the final land battle site of the nation's bloodiest war. It's a natural fit. 🦋

Douglas Murphy is a National Park Service historian.



Protecting an Alaska Village from Wildfire

By Maureen Clark

The central Alaska village of Ruby is adjacent to 2.1-million-acre Nowitna National Wildlife Refuge, where the landscape has been influenced over thousands of years by lightning-caused fires that have left a mosaic of black and white spruce, birch, alder, willow, shrubs and grasses. While natural fire is essential to the health of the ecosystem and the diversity of wildlife on the refuge, controlling such fire is essential to the safety of the 180 residents in Ruby.

To help protect the village, the Ruby Tribal Council turned to the U.S. Fish and Wildlife Service Hazardous Fuels Reduction Program.

Fifty-four acres have undergone hazardous fuels reduction since 2009. The program provides technical assistance and funding to reduce the threat of wildfire in communities within and near refuges by controlling “hazardous fuel,” the twigs, low-hanging limbs and other vegetation that ignites easily and burns rapidly.

So, one day last summer on a ridge above the Yukon River village, Service-funded tribal employees were moving through the woods, cutting and pruning trees, removing highly flammable black spruce and clearing a stretch of forest to create a firebreak between Ruby and the possibility of wildfire. Before long, the sky darkened and a thunderstorm rolled across the valley, underscoring the importance of the crew’s efforts in interior Alaska’s boreal forest, where summer lightning strikes are common.

Service fire managers helped the community develop a fire mitigation plan that was implemented in stages over the past four summers. Service funding enabled the tribe to purchase tools and safety equipment and to hire and train village residents.

Nowitna Refuge was established in 1980 to conserve fish, wildlife and habitats, in particular trumpeter swans, white-fronted geese, canvasback ducks, moose,



The village of Ruby is next to 2.1-million-acre Nowitna National Wildlife Refuge in central Alaska. For help in safeguarding the village from wildfire, the Ruby Tribal Council turned to the U.S. Fish and Wildlife Service Hazardous Fuels Reduction Program. (USFWS)

caribou, marten, wolverines, salmon, sheefish and northern pike. The fire project gave the refuge a chance to be a good neighbor.

“When it comes to fire, our first priority is protecting life and then property,” says refuge manager Kenton Moos. “The hazardous fuels reduction funds help us do that. The program also provides some much-needed income in a community where jobs are scarce.”

The fire project gave Nowitna National Wildlife Refuge a chance to be a good neighbor.

Walking around the village with refuge fire management officer Ben Pratt, it’s easy to see what’s been done. Where once a thick black spruce forest came up to the edge of the road that rings the village, some trees have been removed and lower limbs have been pruned. Such thinning

reduces the likelihood of fire moving into the canopy of the trees, where it can spread quickly.

Brush was piled neatly, before being burned in the fall after the threat of wildfire passed. Trees have been cut down to create a buffer around the village dump and thinned around the cemetery.

“If a fire crew had to come in to protect the town from a wildfire, they would be impressed and very grateful for the work that’s been done,” says Pratt.

For Ruby residents, the project brings a measure of comfort.

“I think they’re really happy knowing they’re safer from fire,” says tribal administrator Pat Sweetsir. “And the crew is glad to be doing work that helps the community.” 🦋

Maureen Clark is a fire information specialist in the Alaska Region office in Anchorage.

From the Director — continued from page 2

Hunting is a key part of our shared national heritage, and I am confident that learning to hunt will grow into a real love for the outdoors. What people love, they protect.

This increase in hunters and anglers reverses decades of declines and offers us a great opportunity to get out the “greatest conservation story never told,” which involves sportsmen and -women and their industries.

The Wildlife and Sport Fish Restoration Program, which collects excise taxes on hunting and fishing gear and returns the money to the states for conservation, got its start thanks largely to the support of manufacturers and users of such gear. Imagine! Taxing themselves for conservation.

WSFR, celebrating its 75th anniversary, has provided more than \$14 billion for conservation since 1937.

We cannot afford to lose the money and passion hunters bring to conservation ... or what they pump into the economies of local communities.

In 2011, hunters, anglers and wildlife watchers spent \$145 billion on related gear, trips and other purchases such as



Federal wildlife officer Rachel York speaks with a hunter at William L. Finley National Wildlife Refuge in Oregon. “Hunting is a key part of our shared national heritage, and I am confident that learning to hunt will grow into a real love for the outdoors,” writes U.S. Fish and Wildlife Service Director Dan Ashe. “What people love, they protect.” (George Gentry)

licenses, tags and land leasing and ownership.

These wildlife supporters made purchases throughout community economies: at sporting goods stores, guide and outfitter services, gas stations, cafes, hotels and many other enterprises.

These contributions also led to jobs at these same businesses. And this spending generated tax revenue for local economies.

Hunters and anglers have given America a great gift; let's get out there and enjoy it.



Chief's Corner — continued from page 2

Everglades Headwaters Refuge is a sterling example of our new way of doing business, working with people who want to conserve a way of life as much as we want to conserve the wildlife values.

We have loads of partnerships, with state agencies, land conservation partners, private landowners and nonprofit organizations. But have we exported our expertise in partnerships to reach private enterprise? Not often enough.

Let's consider communications. This year, *Parade*, the nation's most widely read magazine with some 32 million in circulation, put National Wildlife Refuge Week right at the top of its “Parade Picks” page. The story wasn't long, but it went with a great photo that we

supplied. That's success, and I could reel off others.

A few years ago, the Refuge System produced a television public service announcement that garnered more than \$26 million in free airtime, returning about \$2,000 for every \$1 we spent on production. That's success.

But then recently a National Public Radio station in Florida announced that it was National Wildlife Refuge Week and told people it was a great time to visit a park. A park!

What's the takeaway? First, we have demonstrated that we know how to generate media attention and successful partnerships. Second, you can do everything right and still not have the

perfect outcome every time. But most importantly, you have to be in the game if you hope to win.

In the words of President Theodore Roosevelt, “the credit belongs to the man who is actually in the arena, whose face is marred by sweat and blood ... who errs, comes short again and again, because there is no effort without error and shortcoming.”

Our implementation teams are in the arena on communications and partnerships—and on science, environmental education, recreation and conservation planning, too. We won't always succeed, but we won't be what Roosevelt called “the cold and timid souls” who never try.



Three New Refuges in West Bring National Number to 560 — continued from page 1

programs for local residents, and perhaps provide demonstration areas for sustainable agriculture.

Rio Mora Refuge and Conservation Area was established by a Thaw Charitable Trust donation of more than 4,200 acres. The refuge, two hours northeast of Albuquerque, is in a transition zone between the Great Plains and the southern Rocky Mountains. The Mora River flows through the refuge for about five miles in a 250- to 300-foot-deep canyon.

The refuge will protect and restore riparian and grassland habitat, reversing erosion and bringing back the river's natural meanders. Species that stand to benefit include long-billed curlew, loggerhead shrike, burrowing owl, mountain plover, Southwestern willow flycatcher, a number of aquatic species, and migratory grassland and woodland birds.

In mid-September, Sangre de Cristo Conservation Area was established in southern Colorado, thanks to a large easement donation in the Sangre de Cristo Mountains by conservationist Louis Bacon.

Bacon, a proponent of landscape and wildlife conservation, donated an easement on nearly 77,000 acres of his 81,400-acre Trinchera Ranch. He previously announced his intention to donate an easement on 90,000-acre Blanca Ranch, bringing the total amount of perpetually protected land to nearly 170,000 acres. When completed, the two easements will be the largest donation



Rio Mora National Wildlife Refuge and Conservation Area, northeast of Albuquerque, NM, was established by a Thaw Charitable Trust donation of more than 4,200 acres. (Tami Heilemann/DOI)

ever to the Service. The Blanca Ranch easement donation was to be finalized late this year.


Rio Mora Refuge and Conservation Area is in a transition zone between the Great Plains and the southern Rocky Mountains.

“We are too quickly losing important landscapes in this country to development—and I worry that if we do not act to protect them now, future generations will grow up in a profoundly different world. This motivates me and is why I am proud to place Trinchera Ranch, Blanca’s adjoining ranch, into a conservation easement,” said Bacon. “I am also honored to help Secretary Salazar and the U.S. Fish and Wildlife Service create the Sangre de Cristo Conservation Area in Colorado’s San

Luis Valley. It is an area widely known for its cultural, geographic, wildlife and habitat resources.”

Trinchera Blanca Ranch is the largest contiguous, privately owned ranch in Colorado and features vistas of high desert shrubs and mountain grasslands, combined with alpine forest and alpine tundra. The area stretches to the top of Blanca Peak (14,345 feet above sea level). It falls in the center of the Sangre de Cristo mountain range, the longest mountain chain in the United States, and borders the Sangre de Cristo Wilderness near Great Sand Dunes National Park and Preserve.

Among the species that benefit from the new conservation area are Rio Grande cutthroat trout, a candidate for listing under the Endangered Species Act, and the threatened Canada lynx.

The Refuge System grew by five units in the fiscal year that ended Sept. 30. In addition to 560 refuges, the Refuge System includes 38 wetland management districts. 



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A Look Back ... Paul Springer

In the early 1970s, researchers and students from Humboldt State University in northern California conducted daily counts of Aleutian cackling geese leaving their roost near Castle Rock for mainland pastures. Paul Springer—Doc to those who knew him—would help.

“He was so detailed that when individual flock counts did not match, even by less than five birds, he would immediately recount and then make a notation that he would bring up at the end of fly-off to iron out the discrepancies,” recalls Jock Beall, supervisory refuge biologist at Willamette Valley National Wildlife Refuge Complex, OR.

Beall remembers Springer’s legendary filing system: “The stacks on the desk in his Arcata office were so high you could barely see him sitting behind it. But when you walked in, he never failed to pull what he needed from some giant pile. I use a similar system today.”

Springer worked as a U.S. Fish and Wildlife Service research biologist from 1947 to 1984, serving on the




As a U.S. Fish and Wildlife Service research biologist, Paul Springer (1922-2007) helped recover the Aleutian cackling goose. (Courtesy of Virginia Springer)

recovery team that rebuilt the Aleutian goose population and helped ensure that the geese’s roosting site off the California coast would become Castle Rock National Wildlife Refuge. He negotiated with landowners, farmers and government officials to conserve foraging areas for wintering geese on privately

owned fields. His work helped boost the goose population to about 100,000, prompting him to say, “I guess we may have over-succeeded.”

Springer was highly regarded by Humboldt State students and refuge biologists/managers he mentored. “He was a powerful influence and an extremely critical editor—fair, but infamous for his late-night phone calls,” says Eric Nelson, manager of Humboldt Bay National Wildlife Refuge. The Paul Springer Student Award is given to the best student poster at the biennial Humboldt Bay Symposium to honor Springer’s contributions to understanding of the bay’s ecology.

Since Springer’s death in 2007, professional accolades have poured in, but one of his four sons, Peter, treasures a more personal memory: “We’d get up at 4 in the morning, and he would sometimes take one of us along to count birds. He would share some hot soup from his thermos, and I would think this is just about the coolest thing I could be doing with my dad.” 

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