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RefugeUpdate

National Wildlife Refuge System

www.fws.gov/refuges

INSIDE: Nisqually National Wildlife Refuge near Seattle and in the shadow of Mount Rainier has been designated as a U.S. Fish and Wildlife Service regional priority urban refuge. For more about the Urban Wildlife Refuge Program – including an interview with Secretary of the Interior Sally Jewell – see the Focus section, beginning on page 6. (Ian Shive)

New *Conserving the Future* Program To Make Ambassadors of All Employees

A regional program that gained widespread praise among Southwestern refuges in the late 1990s will debut nationally throughout the Refuge System in 2015.

The national Ambassador Program – a product of the *Conserving the Future* Interpretation and Environmental Education implementation team – will adapt hospitality industry concepts to the U.S. Fish and Wildlife Service by training employees, volunteers, Friends and partners to provide top-notch customer service.

The Southwest Region instituted a similar program in 1997, training employees over three years in a program that was part customer service and part community engagement, recalls Mike Carlo, a member of the *Conserving the Future* team who then worked as a park ranger at Santa Ana National Wildlife Refuge in Texas. He is now in the Refuge System Headquarters Branch of Visitor Services.

The national Ambassador Program, in the planning stage, has support from top Service leadership. It will not only equip the Service's work force to deliver exemplary service but also improve communications by providing clear and consistent national

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SoCal Project Plants the Flag In Los Angeles

By Bill O'Brian

Los Angeles has long been a gap in the U.S. Fish and Wildlife Service's ability to connect Americans with nature. Sure, there are national wildlife refuges to the south. And, yes, there are refuges to the north. But the United States' second-largest city itself has represented a gap in conservation coverage.

That gap was filled last summer with the formation of the SoCal Urban Wildlife Refuge Project. San Diego National Wildlife Refuge Complex, which competed with other urban refuges for the honor, is receiving $1 million above its base budget annually to manage the SoCal Project.

"It seemed important to us to plant

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From the Director

Reaching Into Cities Will Help Kids, Wildlife

I was at Great Swamp National Wildlife Refuge in New Jersey with Secretary Jewell to celebrate the 50th anniversary of the Wilderness Act in September. I know for most, New Jersey isn't the first state that comes to mind when wilderness is discussed.

Dan Ashe

But Great Swamp, 26 miles as the crow flies from Times Square, was the first Department of the Interior designated wilderness. Today, you can hike eight miles of trails across 3,660 acres of wilderness and experience nature in solitude. Imagine that.

Places like Great Swamp are more than just escapes from the modern world. From John Heinz National Wildlife Refuge at Tinicum near Philadelphia to Bayou Sauvage Refuge in New Orleans, urban refuges are a key part of our conservation strategy: working with partners to engage urban populations in building an inclusive conservation movement.

More than 80 percent of Americans now live in urban environments – a shift that has profound implications for the health and well-being of millions of people, especially youth. We're learning that kids who spend more time in nature are physically healthier, cognitively more advanced and suffer fewer emotional problems.

Today's children soon will be our nation's elected officials, business leaders, parents, activists and public servants. What happens when a generation disconnected from the outdoors is in

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Chief's Corner

Going Urban

Our urban refuge initiative is off to a good start.

We have sent $1 million to San Diego National Wildlife Refuge Complex to implement the innovative SoCal Urban Wildlife Refuge Project. As soon as we get our fiscal year 2015 final appropriation, we hope to award $1 million to a second refuge in our continuing urban refuge challenge.

Jim Kurth

In addition, we now have 14 Urban Wildlife Refuge Partnerships that bring the conservation message to cities where we may not own any land.

Most important, we have lots of creative refuge staff who are finding new partners who want to work with us in cities across the country.

As I think back on my field days, I have to admit that I was happiest in wild places far from the city.

I loved Seney Refuge in Michigan's Upper Peninsula. There were only 8,000 people in Schoolcraft County, and not a single traffic light. I think about that community often as I commute into Washington, DC, in snarled, never-ending traffic.

I cherish the time I spent on the Arctic Refuge. A day doesn't go by that I don't think about the place.

Of course, I enjoyed my time in more urban places, like Rhode Island and South Florida. I was thrilled to work for the U.S. Fish and Wildlife Service when Bayou Sauvage Refuge became a reality, close to the people of New Orleans. But I was always more comfortable in lonelier places.

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Refuge Update

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Inside

Correction

A refuge was misidentified in a caption under a photo of summer campers that accompanied an article about climate change education in the September/October issue. The photo was taken at Pocosin Lakes National Wildlife Refuge.

DeSoto and Boyer Chute Refuges Retool After 2011 Flood

L: Usfws; R: Bill O'Brian/USFWS

DeSoto and Boyer Chute National Wildlife Refuges have not fully recovered from a historic 2011 flood. The flood overwhelmed the DeSoto visitor center, left, and covered hundreds of acres of prairie grassland at Boyer Chute, right, several feet deep in sandy silt. The visitor center reopened relatively quickly, but the silt remains today.

By Bill O'Brian

Three-and-a-half years ago, a flood of rare magnitude and duration inundated DeSoto and Boyer Chute National Wildlife Refuges. The two refuges, which are co-managed along the Missouri River in Iowa and Nebraska, have not fully recovered from that deluge, but they have learned from it and incorporated those lessons into a new comprehensive conservation plan (CCP).

They have learned that, "other than from a people perspective, floods can do a lot of good," says refuge manager Tom Cox. "They are extremely negative and have a horrible impact on the residents of a floodplain, on people as a whole or the visitors to the refuge who lose certain facilities. But from a wildlife perspective, we see a real boon."

DeSoto Refuge, Cox says, has seen fish production flourish, "bird life from waterfowl to warblers has just been amazing," and a flood-induced forest successional setback is occurring on the 8,365-acre refuge. Some mature cottonwood forest is being replaced by native floodplain grasses.

At Boyer Chute Refuge – 4,040 acres within a 10,010-acre acquisition boundary – expansive prairie grasslands were inundated with silt (they don't call the Missouri "the Big Muddy" for nothing). And bottomland cottonwood forest is taking root.

"We're looking at the opportunities that the river gave us," Cox says. "That flood forced us to rethink how we're going to manage these refuges in the future."

"That flood forced us to rethink how we're going to manage these refuges in the future."

The 2011 flood, which rose to almost six feet above flood stage and 17 feet above normal flow, was the second-highest on record along the Missouri. It lasted almost three months – June into September. "There wasn't that up-down cycle you see with a lot of floods," says Cox. "It came up and stayed up. It was pretty awe-inspiring, really."

The flood necessitated the temporary closing of the DeSoto Refuge visitor center and the rapid evacuation of the 250,000-artifact Steamboat *Bertrand* museum collection (see July/August 2014 *Refuge Update* article). It severely damaged refuge roads. "Trails and the auto tour route were completely buried in sand, and everything had to be dug out," says Cox. The flood overwhelmed the visitor center's HVAC and electrical systems. Repairs took months and cost roughly $1 million, but the flood spawned a new approach.

With Midwest Region office cooperation, Cox and staff decided to lead by example as inhabitants of a floodplain and not to replace the flood-damaged Boyer Chute headquarters building, the DeSoto oxbow lake aeration system, comfort stations, a boathouse, boat ramps, parking lots, trails, picnic shelters and other destroyed infrastructure, much of which predated the refuges' establishment. The DeSoto center now welcomes visitors to both refuges.

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The Guadagno Legacy: A Seed of Inspiration

By Leann Wilkins

Maggie DeLauter is proof positive that the conservation legacy of Richard Guadagno lives.

Guadagno was passionate about the environment. He had been since he was young. At the time of his death, on Sept. 11, 2001, aboard United Flight 93, he was refuge manager at Humboldt Bay National Wildlife Refuge in California. In his memory, there is the Richard J. Guadagno Scholarship Fund at that refuge and a separate family Foundation Fund that supports students around the country. So far, about three dozen young adults interested in the environment have benefited.

DeLauter is one such young adult. In the summer of 2013, the Guadagno family funded a six-month Student Conservation Association (SCA) internship for her at Maxwell National Wildlife Refuge in northeastern New Mexico.

Maggie DeLauter is one of about three dozen young adults who have benefited from scholarships and internships funded in memory of refuge manager Richard Guadagno. While an intern in New Mexico, DeLauter worked on various surveys and studies at Maxwell, Las Vegas and Rio Mora National Wildlife Refuges. (Shantini Ramakrishnan)

> *"I learned more than I did in my four years of college and gained some serious skills."*

That internship jump-started her conservation career. As Guadagno was, DeLauter is from the Northeast. In late February 2013, when DeLauter left New York's Long Island and headed west for the first time, she says, the "vast landscape and the beautiful wide-open sky" stood out.

Lori Guadagno says her brother believed that the next generation of conservation leaders is built by engaging youth through hands-on field experience.

Starting with salt cedar and moving on to other invasive plants, DeLauter helped treat more than 75 acres of non-native plants at Maxwell Refuge. She took part in wildlife surveys at Maxwell Refuge, Las Vegas Refuge, and Rio Mora Refuge and Conservation Area. She assisted in biweekly bird surveys, monitored black-tailed prairie dog movement, worked with the Hummingbird Monitoring Network to learn about migration patterns, and helped with small mammal trapping.

"I learned more than I did in my four years of college and gained some serious skills that will help me reach my goals," DeLauter says of the hands-on experience.

One of Richard's affirmations, Lori Guadagno says, was that a seed of inspiration sown early in a person's life can take root and spark an interest for a lifetime wildlife conservation career.

That seed led DeLauter to move on from New Mexico to become a seasonal U.S. Fish and Wildlife Service biological science technician at LaCreek National Wildlife Refuge. At the 16,410-acre refuge on the northern edge of the Nebraska Sandhills in South Dakota, she continues to control non-native plants and has learned new techniques like dove banding. As her time at LaCreek Refuge draws to a close, she is looking to pursue graduate studies and hopes to continue to build her conservation career with the Service.

"My experiences now make me more prepared for other opportunities that will come my way," she says. "After working with the Service at Maxwell and LaCreek, I have learned the importance of the mission of the agency and support it fully. Something that sets the Service apart from other government agencies is its care and work to provide a safe place for organisms outside of humans."

Northern New Mexico Refuge Complex project leader Rob Larranaga, who worked with Richard Guadagno in the Pacific Northwest, hopes "to continue to honor his ultimate sacrifice by growing future conservationists."

Leann Wilkins is refuge manager at Maxwell National Wildlife Refuge in New Mexico. Information about the Richard J. Guadagno Scholarship Fund is at http://1.usa.gov/XqbOhz

Getting the Best Video and Pictures on a Budget

By Brett C. Billings

We've all been there. That perfect picture is unfolding before our eyes: a bird of prey finishing off a fresh kill; a doe with spotted fawns; maybe something rarer. We scramble for a camera but end up relying on our phone – and the subject is so small in the frame we have to tell people what it is.

So, how do we get the perfect shot next time? Be prepared, and have the right equipment.

The optics in smartphones are great. However, phones have limitations, primarily no effective zoom and poor audio recording. Smartphones can produce passable people close-ups and landscape shots. To get good video interviews and long-range wildlife photos, a different tool is needed.

Let's address wildlife photography. All the major manufacturers offer "superzoom" cameras. Every field station should have one. While many compact cameras have high degrees of digital zoom (essentially cropping the shot in your camera and compromising quality), superzooms have truer optical zoom (moving glass elements that magnify the image with minimal loss of quality).

Superzooms that offer 30X zoom are common; some models boast 60X (1400mm for the 35mm equivalent). It would cost upwards of $10,000 for a professional-grade outfit at the 1400mm focal length. But superzooms range from $150 to $400. They don't offer the same quality of image that a professional outfit does, but they pack in great features for a low price. And many superzooms shoot full HD video with stereo audio.

That brings us to sound. Good audio is vital to making a good video.

For interviews, location is important. Indoors or out, scout the area with your ears. Take care to avoid excessive noise from a nearby air conditioning unit, wind, traffic, a waterfall or a floppy windbreaker the interviewee is wearing. For wildlife and habitat scene shots, natural sound usually is a plus, but wind almost never is. In all cases, plan to get good audio. This may include buying an inexpensive accessory microphone that plugs into the camera, using a wind sock and/or blocking wind with a car or wall.

Here are a few other strategies that can tilt the odds in favor of getting good video and stills:

- Shoot at dawn and dusk. This is when wildlife is often active and when "golden light" at sunrise/sunset can result in striking images.
- Don't poo-poo cloudy days. The even and diffuse lighting on overcast days can saturate colors and allow you to photograph in wooded areas without shadows that cause contrast issues. A bright overcast day is the time to do woodland wildflower photography.
- Use your calendar. When you see a significant wildlife event (such as mass toad breeding frenzy in a local pond), jot down the date on your calendar as a heads-up when to expect it the next year.
- Be patient. Short of having a photo blind, simply staying still and somewhat hidden go a long way toward seeing wildlife.
- Position the camera horizontally, not vertically, when shooting video with a smartphone or iPad. This avoids ugly dead space ("pillars") on the side of frames in your video.
- Use a tripod. No matter the camera – smartphone, DSLR, superzoom or point-and-shoot – use a good tripod. It's nearly impossible to hold such small gadgets still. A tripod with quick-release head is useful with all cameras. A tripod is the difference between professional and sloppy video.

Now, with that new camera and some planning, you're all set to capture those rare moments and share them with the world.

Brett C. Billings is a videographer at the National Conservation Training Center. A series of videos that he produced about photography, videography, and interviewing and gear selection is at http://go.usa.gov/XKjh

Capturing a male sage-grouse in full courtship display on camera doesn't happen by accident. It requires planning and patience. The author awoke at 2 a.m. and drove through a snowstorm to get this shot at Charles M. Russell National Wildlife Refuge in Montana. (Brett Billings/USFWS)

Going Where the People Are

By Marcia Pradines

To conserve wildlife, the U.S. Fish and Wildlife Service must cultivate a connected conservation constituency of people who care about wildlife – even if they never visit a national wildlife refuge. The Service needs people to value wildlife. Whether someone's favorite refuge is Heinz or Arctic, Bayou Sauvage or Seney, if the Service doesn't have a connected conservation constituency, it will not have the support and resources to accomplish its mission.

Children help plant a pollinator garden at John Heinz National Wildlife Refuge at Tinicum near Philadelphia. (Chuck Lafferty)

Standards of Excellence

In response to *Conserving the Future* Recommendation 13 and seeking to reach new audiences across a changing America, the U.S. Fish and Wildlife Service has established "Standards of Excellence for Urban National Wildlife Refuges." The eight standards are designed primarily as a framework for collaboration between the Service and urban communities, but their principles are applicable to all refuges working to connect with new audiences in their communities. The standards:

1. Know and Relate to the Community
2. Connect Urban People with Nature via Stepping Stones of Engagement
3. Build Partnerships
4. Be a Community Asset
5. Ensure Adequate Long-Term Resources
6. Provide Equitable Access
7. Ensure Visitors Feel Safe and Welcome
8. Model Sustainability

The complete "Standards of Excellence" are available at *www.fws.gov/urban*

The Urban Wildlife Refuge Program seeks to engage local communities as partners in wildlife conservation. Urban areas present an opportunity to reach audiences who are unaware of the Service. Refuges closest to the most people provide the best opportunity to engage new audiences, either at existing urban refuges or through new Urban Wildlife Refuge Partnerships. Building this constituency benefits the entire agency and the broader conservation community.

Urban Refuges

There are 101 refuges whose boundaries are within 25 miles of 250,000 or more people. These urban refuges serve as proving grounds for excellence in community engagement. The focus is on people living near a refuge, some of whom don't even know it exists. Staff has a prime opportunity to step off the refuge, reach into the community and create long-term relationships that will cultivate new supporters. So far, Service regional offices have identified 14 of the 101 as priority urban refuges and have developed proposals for them that meet the *Conserving the Future* Standards of Excellence for urban refuges.

The Standards of Excellence, available on the Urban Hub (*www.fws.gov/urban*), are a framework for collaboration between the Service and urban communities on and off Service lands. They are designed to be as flexible and unique as the communities that refuges serve. Developed with input from urban refuge managers, Service staff and partners, the standards challenge the Service to better understand the expectations of communities and to provide conservation leadership relevant to communities.

The standards offer a path to engage urban audiences and make meaningful connections to wildlife, especially in communities where barriers exist to learning about and enjoying nature. This starts by building awareness and understanding, and then devising

programs that welcome more people into the conservation community. Partners whose interests may be education, human health or community service can help achieve conservation of wildlife, plants and habitats that are essential to maintaining a healthy planet for people.

Urban Wildlife Refuge Partnerships

No refuge? No problem. The Service has created partnerships where it doesn't own land.

Many major cities don't have a refuge nearby, and even in those that do reaching specific neighborhoods can be difficult. One way to meet new audiences "where they are" is to partner with Service programs such as the Urban Bird Treaty City program, schoolyard habitats and hatcheries. Another way is via the 14 Urban Wildlife Refuge Partnerships the Service has helped establish since last year [*see page 12*].

These partnerships nurture an appreciation of wildlife conservation in new audiences by empowering local community organizations to inspire conservation in parks, backyards, schoolyards and other natural areas.

The partnerships recognize that sometimes the conservation message is best delivered to new audiences by community leaders or ambassadors who have a long history in the target community. The Service, in return, offers natural resource expertise, financial resources and credibility.

The partnerships are formal recognition of excellence under the Urban Wildlife Refuge Program. They are also cost-effective. In the first year, the Service's $380,000 seed funding for them has generated more than $2.5 million in matching partner funding.

Marcia Pradines is chief of the Refuge System Division of Visitor Services and Communications.

Schoolchildren enjoy Don Edwards San Francisco Bay National Wildlife Refuge, one of 14 regional priority urban refuges. (Justine Belson/USFWS)

Priority Urban Wildlife Refuges

Of the 562 existing national wildlife refuges, 101 are considered urban refuges – that is, refuges located within 25 miles of 250,000 or more people. Of those 101, U.S. Fish and Wildlife Service regional offices have identified the following as regional priority urban refuges, those where concentrated programming could have its most impact:

Pacific Region: Tualatin River National Wildlife Refuge, OR; Nisqually National Wildlife Refuge, WA.

Southwest Region: Valle de Oro National Wildlife Refuge, NM; South Texas National Wildlife Refuge Complex.

Midwest Region: Minnesota Valley National Wildlife Refuge; Detroit River International Wildlife Refuge, MI.

Southeast Region: Bayou Sauvage National Wildlife Refuge, LA; Arthur R. Marshall Loxahatchee National Wildlife Refuge, FL.

Northeast Region: John Heinz National Wildlife Refuge at Tinicum, PA; Patuxent Research Refuge, MD.

Mountain-Prairie Region: Rocky Mountain Arsenal National Wildlife Refuge, CO; Bear River Migratory Bird Refuge, UT.

Pacific Southwest Region: Don Edwards San Francisco Bay National Wildlife Refuge, CA; San Diego National Wildlife Refuge Complex, CA.

Conserving the Future

Focus...Urban Wildlife Refuges

A Q&A Interview With Secretary of the Interior Sally Jewell

Sally Jewell has been Secretary of the Interior since April 2013. She is an accomplished businesswoman and an equally accomplished outdoorswoman who enjoys skiing, kayaking, hiking and mountain climbing. Jewell has worked to ensure that public lands are accessible and relevant to people from all backgrounds, and to build a connection between the great outdoors and a new generation of Americans. Here are excerpts from a recent *Refuge Update* interview with her about the Urban Wildlife Refuge Program. The interview was conducted by U.S. Fish and Wildlife Service Northeast Region public affairs specialist Meagan Racey at Blackwater National Wildlife Refuge in Maryland.

Interior Secretary Sally Jewell says collecting native plant seeds with schoolchildren at Minnesota Valley National Wildlife Refuge was a special moment. "I was chasing around after the elusive milkweed seed with a little five- or six-year-old," the Secretary recalls. (Tina Shaw/USFWS)

Q. *Could you tell us about a time that you shared [nature] with an urban youth at a national wildlife refuge?*

A. Fortunately, in the 17 months that I've been in this job, I've had lots of examples. One that really comes to mind was in the Minnesota Valley National Wildlife Refuge, which is right adjacent to Minneapolis-St. Paul airport. And there was a group of young kids – maybe between five and seven years old – and their job was to collect native seeds, to harvest them in the fall to be able to propagate native plants. So, I learned what milkweed seed looks like. I was chasing around after the elusive milkweed seed with a little five- or six-year-old, and we were pulling the seeds out of the pod together. [It was wonderful] just to look at the excitement in the eyes of those kids as they learned, but also to satisfy my own curiosity, which has never gone away since I was a child.

Q. *Why is it important to the Department [of the Interior] and to you personally to connect urban residents, particularly youth, to the wonder of nature?*

A. Kids are curious. We're all curious, but kids in particular just have no inhibitions. They will look right at a spider or a critter. They'll see things that we as adults completely miss, and urban wildlife refuges provide that opportunity for young people, [an opportunity that is] hard to get in cities. You're living in a multi-story apartment building, your time is scheduled by an adult most of the time; you're being told what to do; you have very little time to really play, especially play out in nature. So one of the reasons we launched the Youth Initiative was to encourage people to let kids play, to use places like our wildlife refuges, especially those that are in close proximity to urban areas, to open them up to kids – to satisfy that curiosity, to run around, to feel comfortable. We find that as we listen to the sounds of nature, like we're hearing now in this [Blackwater] wildlife refuge, that those are sounds that are unfamiliar to many people that live in urban areas. When kids get out as youngsters and they hear these sounds – and they recognize that this is part of nature and the ecosystem – they're going to be much more comfortable coming to a place like this when they're older.

We're going to need kids from urban areas to care about wildlife refuges, not just those close to home but those far away … There's always going to be demands on the money [at] a local level and a state level and a federal level. These youngsters today will be our elected officials. They'll be our business leaders. They'll be our community activists. And, if we want them to care, they have to know.

Q. *What makes the Service and National Wildlife Refuge System particularly ideal to lead the way in this effort?*

A. The great thing about the Fish and Wildlife Service is: We have over 500 refuges, and they are all over the United States. They are in faraway places; they are right in urban areas. I visited Great Swamp National Wildlife Refuge [in New Jersey], a scant 25 miles away from Times Square in New York City and a wilderness area as well. While we don't oftentimes give kids opportunities to get in the outdoors, the Fish and Wildlife Service can provide that opportunity. But we have to let people know that we exist. And I think a lot of people, myself included, for many years have driven by brown refuge signs and not stopped in. We need to make sure that urban wildlife refuges are on the radar. We need to reach out to school groups, to teachers, to parents, to make sure they know that they're there. And the Fish and Wildlife Service is uniquely positioned to do that just because we have so many refuges – and a lot them are really close to where the people are.

Q. *Do you have any advice for national wildlife refuge managers on how they can instill a passion for nature among young people?*

A. You know, one of the challenges that the whole federal government has had, but certainly the National Wildlife Refuge System has had, has been tight budgets. And I think it's sort of easy to retreat to mission and say, "Well, I've got to protect these resources, protect these species, and I don't have time to coordinate with volunteers, and I might not have time to teach a teacher." But when you coordinate with volunteers and you teach teachers you're actually broadening the network of support that's going to build additional support for the Refuge System and that particular refuge over time. So, in this time of constrained [financial] resources, I'd say, "Let's not forget the importance of thinking long term, of thinking how we create an environment where people *will* care in the future." … Maybe you can leverage volunteers to go out into the local community to bring people out to the refuge. That awareness and visibility is so important and, of course, gets a double benefit because the people will actually learn more when they come out here, they'll be better stewards of the environment, and they'll probably learn a little bit about their region that they never knew before.

Video Online

A videotape of this interview with Interior Secretary Sally Jewell is available on the U.S. Fish and Wildlife Service YouTube channel: *http://youtu.be/6PaoZViLBPc*

Secretary Jewell and others explore San Diego Bay National Wildlife Refuge at last summer's announcement of the SoCal Urban Wildlife Refuge Project. "We have to let people know that we exist," the Secretary says. "We need to make sure that urban wildlife refuges are on the radar." (Ian Shive)

Houston: 90 Languages, 5 Refuges, a Real Opportunity

By Bill O'Brian

Karina Sustaita lives in southeast Houston. Before last summer, the 17-year-old Mexican American high school senior had never been to a national wildlife refuge. She'd been working with the Student Conservation Association in the city for two years but hadn't visited a refuge.

Then, last August, she went to four refuges.

At San Bernard National Wildlife Refuge, she did trail work and marveled over golden orb-weaver spiders. ("They were scary-looking at first," she says, "but they ended up being okay. They weren't any trouble.")

At Trinity River Refuge, she removed cypress knees. ("It was difficult. I won't say it was easy.")

At Attwater Prairie Chicken Refuge, she collected native seeds and learned about the refuge's namesake endangered birds. ("I didn't know they even existed.")

At Anahuac Refuge, she planted cordgrass.

"It's peaceful, and it's calming," she says of being at a refuge.

The Houston Urban Wildlife Refuge Partnership gives people like Sustaita a chance to experience refuges and learn about conservation.

The U.S. Fish and Wildlife Service established the Houston urban partnership last year. Since then, at least 60 civic organizations have expressed interest in being involved. A core group of partners has been identified: Houston Wilderness (a business, environmental, government alliance); Buffalo Bayou Partnership (a nonprofit that supports the meandering urban waterway); Greater East End Management District (an economic development agency); Texas Parks & Wildlife Department; SCA; and the Houston Parks and Recreation Department.

Student Conservation Association intern Karina Sustaita does trail work at San Bernard National Wildlife Refuge in Texas. "It's peaceful, and it's calming," she says of being at a refuge. The SCA and the refuge are part of the Houston Urban Wildlife Refuge Partnership. (Student Conservation Association)

The Houston urban partnership is launching in earnest this fall. With help from the Friends of Brazoria Wildlife Refuges, the Service presence was robust at the eighth annual Kids Day on Buffalo Bayou, which attracted thousands of urbanites. Funded by a $25,000 National Conservation Training Center grant, Houston refuges and partners are planting five gardens at three partner locations in Houston. The Service is hiring a full-time environmental education specialist to spread the conservation word at Houston Parks and Recreation community centers and after-school programs. Parks and Rec is helping to fund two SCA internships.

"There's this incredible cultural diversity layered on top of a city that's embraced getting their citizens outdoors," says Southwest Region public outreach specialist Nancy Brown. "There is a real opportunity to engage the fourth-largest city in the country and make something happen. They speak 90 different languages in the city of Houston. Just imagine the opportunity."

Within an hour's drive of Houston are five refuges whose habitats include vast marshes, Gulf of Mexico estuaries, bottomland forest, pine/oak savannahs and coastal prairie.

Jennifer Sanchez, project leader at Texas Mid-Coast Refuge Complex, says the urban partnership's main message is ecological sustainability: "Houston continues to be a rapidly expanding metropolitan area. Without finding ways to incorporate native landscapes within and around Houston, we will lose the tremendous ecological gem that has been created where these ecological regions intersect."

Ken Garrahan, Southwest Region chief of visitor services and a *Conserving the Future* Urban Wildlife Refuge Initiative implementation team member, wants the partnership to reach young Houstonians of all ethnicities and socioeconomic levels who rarely experience nature. That includes kids whose families lack the resources to explore nature and well-off but tightly scheduled kids who hop from air-conditioned car to air-conditioned building. The goal, he says, is engaging "those who are disconnected from nature."

Karina Sustaita is doing her part. Last summer, she took her brother along on one refuge visit. This school year, she is an SCA apprentice crew leader. Next summer, she hopes to work on an SCA national crew before heading off to college.

What Social Science Says About Reaching New Audiences

By Natalie Sexton and Danielle Ross-Winslow

For the National Wildlife Refuge System, a first step to engaging new audiences is to understand them. What do they care about? What are they interested in? What might spark a connection to nature and conservation? New social science research is shedding light on the topic.

Collaborative research by the Refuge System Human Dimensions Branch, U.S. Geological Survey and North Carolina State University identified strategies for connecting with new audiences – and barriers to doing so. A review of existing research, interviews with Refuge System staff and partners, and meetings with urban community leaders nationwide revealed the following lessons learned.

Raise Awareness

Too many urban residents are not aware of the Refuge System and what it offers.

"People who come here already know about the refuge," said one community representative. "People from my community don't know. It's right smack in the neighborhood, but outreach is really lacking."

Outreach that targets specific audiences with tailored messages will help address the Refuge System's identity crisis. Communication that resonates with an audience's cultural and historical background is vital because it forges personal connections.

Understand Barriers

Many U.S. Fish and Wildlife Service staff members may find it hard to imagine, but some people feel unsafe or uncomfortable at refuges. Others feel they don't have the skills needed to spend time outdoors. No one wants to feel like an outsider, and recreation is no exception.

"For a lot of urban kids, the outdoors is exotic, strange and scary," one person said.

"You don't want to be the only black person out there, out in the woods by yourself," said another person. "This is a huge thing, a huge barrier."

Transportation can be a barrier, too. Not everyone can hop into a car to visit a refuge. Understanding and recognizing these barriers is the first step to finding solutions.

Expand Recreation

Outdoor recreation means different things to different people, and may be broader than the Refuge System's "big six" recreational activities. There are, however, commonalities in what people are seeking in outdoor experiences, including time with family and friends; escape from the hustle and bustle; affordable entertainment; and health and wellness.

Expanding refuge recreation opportunities, where appropriate and compatible with the refuge conservation mission, will help reach new audiences. Does this mean that every refuge needs to be everything for everyone? Absolutely not. But it does mean that each refuge should consider the messages it sends with its words, its signs and its regulations. We say "no" a lot; where our goal is to attract visitors, how can we be more welcoming?

Work With Partners

Partnerships are important. The Refuge System has strong partners in its habitat work; it must forge new partnerships to engage new audiences, too. Partners are a powerful and sometimes a more effective voice than government employees. Partners also help host programming and bring people out to the refuge. As one staff member noted, "the YMCA brings 300 kids here in the summer for fishing camp who have never been outdoors before."

Evaluate

Good adaptive management includes evaluation. Evaluation of engagement efforts should be no exception. It's important to establish clear and measurable objectives and then determine which actions are working.

Look for more lessons learned from social science research and find the full report in coming weeks on the Urban Hub (*www.fws.gov/urban*). Additionally, check out the "Tools for Understanding Audiences" webinar (*http://go.usa.gov/ddjz*) to learn about community demographics, recreation trends and more.

Natalie Sexton is chief of the Refuge System Human Dimensions Branch in Fort Collins, CO. Danielle Ross-Winslow is a social scientist in the branch.

To attract new audiences, social scientists say, national wildlife refuges must communicate in a way that resonates with those audiences culturally. Here, young visitors enjoy Presquile National Wildlife Refuge near Richmond, VA. (James River Association)

14 Urban Wildlife Refuge Partnerships

Conserving the Future Recommendation 13 calls for the U.S. Fish and Wildlife Service to create "a refuge presence in 10 demographically and geographically varied cities across America by 2015." In response, since last year the Service has established 14 Urban Wildlife Refuge Partnerships. They are designed to introduce new audiences to natural resource conservation, new aspects of outdoor recreation, and the mission of the National Wildlife Refuge System:

Albuquerque, NM – *Valle de Oro Urban Wildlife Refuge Partnership.* Friends of Valle de Oro National Wildlife Refuge and Friends of the Bosque del Apache are key partners. The partnership includes a community garden at the nearby Mountain View Community Center, which is part of the National Conservation Training Center's Building Urban Community Habitats with Youth program.

Baltimore, MD – *Masonville Cove Urban Wildlife Refuge Partnership.* This cooperative between the Service's Chesapeake Bay Ecological Services office and Patuxent Research Refuge is based at the Masonville Cove Nature Area, a restored Maryland Port Authority site on the Patapsco River. The partnership is designed to connect residents of the poor, high-crime neighborhood with the outdoors. Partners include the Living Classroom Foundation; the Maryland Community Naturalist Network and the National Aquarium.

Chicago, IL – *Forest Preserves of Cook County Urban Wildlife Refuge Partnership.* This partnership focuses on creating a ladder of nature learning and engagement opportunities that starts in urban neighborhoods and expands to the forest preserves, and, ultimately, refuges. The partnership will connect to target audiences via nature-based presentations, guided bird and nature walks, field trips, other outdoor activities and restoration workdays. Partners include Audubon Chicago Region and Eden Place Nature Center.

Denver, CO – *Community Greening and Restoration Project.* Working with the community and partners, including Environmental Learning for Kids, the Service will help turn a degraded detention pond in an underserved neighborhood into a local park that connects to Rocky Mountain Arsenal National Wildlife Refuge. The park will serve youth and families in Montbello and Commerce City.

Houston, TX – *Houston Urban Wildlife Refuge Partnership.* The Texas Mid-Coast National Wildlife Refuge Complex and Service Ecological Services offices are partnering with Houston Wilderness, Buffalo Bayou Partnership, Greater East End Management District, Texas Parks & Wildlife Department, the Student Conservation Association and the Houston Parks and Recreation Department to build on the conservation engagement efforts of those groups.

Los Angeles, CA – *L.A. River Rover Urban Wildlife Refuge Partnership.* "Bringing People to the River and the River to the People" features the River Rover, a mobile visitor and education center that houses interactive exhibits, including a model of the Los Angeles River watershed. The River Rover will be used to teach conservation to urban audiences throughout the watershed.

Refuge manager Jennifer Owen-White shows Youth Conservation Corps members a lizard at Albuquerque's Mountain View Community Center, part of the Valle de Oro Urban Wildlife Refuge Partnership. (Brett Billings/USFWS)

Neighborhood schoolchildren enjoy John Heinz National Wildlife Refuge at Tinicum near Philadelphia. The field trip was arranged by the Audubon Society, part of the Neighborhood Environmental Stewardship Urban Wildlife Refuge Partnership in southeast Pennsylvania. (Audubon Pennsylvania)

New Haven, CT – *New Haven Urban Wildlife Refuge Partnership.* "Creating Urban Oasis in New Haven Harbor Watershed" will establish or improve wildlife-friendly habitats in municipal parks, schoolyards, vacant lots, front yards and parts of Stewart B. McKinney National Wildlife Refuge. Partners include Yale University, the Urban Resources Initiative and the National Audubon Society.

New Orleans, LA – *Habitat Is Where It's At.* Underserved students will help restore degraded wetland habitat in Bayou Sauvage National Wildlife Refuge. Younger students will cultivate marsh grass and trees in schoolyard nurseries. Older students will help with project planning, data collection and biological monitoring to assess restoration success. The University of New Orleans Coastal Education and Research Facility is an important partner.

Pharr/San Juan/Alamo, TX – *PSJA, Preserving for Future Generations.* The three cities will work with Santa Ana National Wildlife Refuge to create natural habitats at three elementary schools. At community-led events, students, teachers and parents will learn about the Tamaulipan brushland ecosystem – found only in Texas's four southernmost counties – and Lower Rio Grande Valley conservation.

Philadelphia, PA – *Neighborhood Environmental Stewardship (NESt).* John Heinz National Wildlife Refuge at Tinicum and the National Audubon Society will expand a program that engages residents in conservation through hands-on programming at schools, neighborhoods and the refuge. The program includes a native plant propagation program at the city's Fairmount Park and citizen science activities at the refuge.

Providence, RI – *Providence Parks Urban Wildlife Refuge Partnership.* The Diversity of Wildlife, Lands & Communities Project; Rhode Island National Wildlife Refuge Complex; and the Service's Southern New England/ New York Bight Coastal Program will work with the City of Providence Park System, the Partnership for Providence Parks, the Roger Williams Park Zoo, The Nature Conservancy and others to develop an inclusive environmental awareness program in more than 100 parks, schools and the zoo.

Santa Barbara, CA – *Condor Kids.* A pilot program will teach students in heavily Latino elementary schools in Ventura County's Fillmore United School District about efforts to recover the endangered California condor. The program will build students' skills in science, technology, engineering and math. Students will make field trips to Hopper Mountain National Wildlife Refuge, a condor nesting area. Partners include the Santa Barbara Zoo and the Cornell Lab of Ornithology.

Seattle, WA – *Lake Sammamish Urban Wildlife Refuge Partnership.* A kokanee salmon partnership will increase understanding and support of the Service, the Refuge System and conservation of aquatic ecosystems and native species at Lake Sammamish State Park and Issaquah State Hatchery, as well as city parks and trails crossing kokanee spawning streams.

Yonkers, NY – *Wallkill Connection: Fostering Urban River Stewards.* Youth and adults from a low-income neighborhood will help restore land near public housing along the Saw Mill River. Participants will visit Wallkill River National Wildlife Refuge along the New York/New Jersey border to learn about riverside restoration. Refuge staff will make return visits to Yonkers to lend their expertise. Partners include the Groundwork Hudson Valley and Groundwork's Green Team, a summer youth employment program.

From the Director – *continued from page 2*

Across the country, the U.S. Fish and Wildlife Service is seeking to engage new audiences at urban refuges, such as Rocky Mountain Arsenal National Wildlife Refuge near Denver. (Matt Ziniel)

charge of taking care of nature? We must bridge the growing divide between young people and nature.

We can do that by helping kids make personal connections to the outdoors, especially through nature-based recreation and education and, yes, through better use of technology and social media. Childhood memories and experiences shape the values and priorities we apply as citizens and leaders.

As a young boy, I was blessed with a wealth of outdoor opportunities, and those experiences have clearly shaped my sense of values and priorities. My father's career with the U.S. Fish and Wildlife Service influenced my own career choice, but I decided to study marine biology because I was inspired by Jacques Cousteau on TV, the "social media" of my youth (and the thing my parents kept telling me to stop doing and "go outside").

We're looking to use our Urban Wildlife Refuge Program to engage new audiences in metropolitan areas across the country. And we must use technology to keep them engaged.

We are building our newest urban refuge – Valle de Oro National Wildlife Refuge in Albuquerque, NM – from the ground up. In August, Secretary Jewell announced the acquisition of the remaining acreage needed to complete the 570-acre refuge, which gives us an unparalleled opportunity to reach families and help them engage nature firsthand.

We're also working to strengthen partnerships and outreach efforts at existing urban refuges. For example, thanks to the visionary leadership of Refuge System Chief Jim Kurth, San Diego National Wildlife Refuge Complex will receive an additional $1 million in funding to reach new audiences.

In urban areas where we don't have a land base, we've created 14 Urban Wildlife Refuge Partnerships to bring us together with community leaders, educators and conservationists. We are working to change how people perceive the outdoors by helping them connect with nature in a fun and culturally relevant way.

By building community support and rethinking where and how we reach families and youth, we can enrich and transform lives. We can nurture the next generation of citizen-conservationists.

But as any parent can tell you, kids grow up fast. Every day is precious. Please join us and help secure our children's future by helping them connect with wildlife and life in the wild.

Chief's Corner – *continued from page 2*

That makes me appreciate all the more some of the Service employees who blazed a trail by working at urban refuges.

Walt Stieglitz, Roger Johnson and Rick Coleman helped to make Don Edwards San Francisco Bay Refuge a jewel. Dick Nugent's work at John Heinz Refuge at Tinicum, near Philadelphia, and Bill Koch at New Jersey's Great Swamp Refuge always amazed me. Ed Crozier's vision for Minnesota Valley Refuge was an inspiration. It's always risky to give a shout-out to just a few people because I know that I am overlooking so many others. But these people amazed and inspired me, as do a new generation of urban innovators like Andy Yuen and Chantel Jimenez at San Diego Refuge Complex who continue to inspire more and more people.

I must say that it took me more than three decades to really understand how essential our urban conservation work is. Cynthia Martinez, now deputy Refuge System chief, and Deb Rocque, now deputy Regional Director in the Northeast, were among the people who made me realize that we have to remain relevant in a changing America. To do that, we have to go to the places where people live. I never realized it could be so much fun.

SoCal Project Plants the Flag in Los Angeles — *continued from page 1*

The SoCal Urban Wildlife Refuge Project area, from the Mexico border north to Ventura County, is 49 percent Latino, 13 percent Asian, 8 percent African American and 29 percent white.

the flag, so to speak, in Los Angeles," says San Diego Refuge Complex project leader Andy Yuen. "We are on the doorstep to several million people. We have the opportunity to reach out and inspire them to conserve wild places."

The project encompasses activities of five refuges – San Diego, San Diego Bay, Tijuana Slough, Seal Beach and Hopper Mountain – and serves 17 million people.

One message the SoCal Project is conveying to urban residents is "that nature isn't this far-off tropical rainforest, or the Arctic, or the jungle, but it's this canyon within their backyard, or it's San Diego Bay, or it's the Los Angeles River," says San Diego Refuge Complex environmental education specialist Chantel Jimenez, who grew up playing along a concrete portion of the L.A. River.

The SoCal Project dovetails with the 14-month-old Los Angeles Urban Wildlife Refuge Partnership and amplifies the groundwork of 28-year-old Friends of the Los Angeles River.

"Here's an organization that has adopted the Los Angeles River and, well before it was fashionable or even well understood, was a strong advocate for the restoration of the river," says Yuen.

All told, the SoCal Project includes a dozen or so nonprofit partners and numerous large school districts and academic institutions.

At last summer's SoCal Urban Wildlife Refuge Project announcement, Interior Secretary Sally Jewell posed with children at San Diego National Wildlife Refuge Complex. The complex is receiving $1 million above its base budget annually to manage the project. (Earl S. Cryer Photography)

In addition to Friends of the L.A. River, the project works in Los Angeles with the L.A. Conservation Corps, a nonprofit that provides at-risk young people with job skills training, education and work experience via conservation projects. Corps members do everything from helping restore habitat to removing graffiti from parks to leading L.A. River kayak tours.

The corps makes "light-years difference" in young people's lives, says Yuen. "We're basically adding on another cadre of kids to their already-successful program."

In San Diego, the project and the nonprofit Living Coast Discovery Center are developing a Student Scientist Series, whose activities meet California science education standards. In September, the center and San Diego Bay Refuge hosted an inaugural WildWiSE (Women in Science and Engineering) event that paired 55 Hispanic girls with 55 prominent Hispanic women who will act as mentors. Together, they learned about environmental science from a female refuge biologist.

"There are a hundred Hispanic individuals, a hundred Hispanic women who probably have never been out to the center before, don't have any idea what a wildlife refuge is, might not have any idea what kind of opportunities there are available to them in science, all learning about the Service and its message," says Jimenez.

The SoCal Urban Wildlife Refuge Project area, from the Mexico border north to Ventura County, is 49 percent Latino, 13 percent Asian, 8 percent African American and 29 percent white.

"We hear a lot about how the United States is changing" demographically, says Jimenez. "We're already there. We can be the person on the block trying the new things to figure out what's going to work" in engaging new audiences.

Around the Refuge System

Pacific Remote Islands

President Obama has protected vital marine habitat by expanding the existing Pacific Remote Islands Marine National Monument, the White House announced in late September. The expanded monument protects nearly 490,000 miles around the islands and atolls, which are also protected as national wildlife refuges. The monument is one of the last frontiers and havens for wildlife in the world, and is home to one of the largest and most pristine collections of coral reef, seabird and shorebird protected areas on the planet. Species such as sea turtles, marine mammals and manta rays have large migration and foraging ranges throughout the expanded monument. Millions of seabirds of more than 19 different species also forage in the monument's waters and raise their young on the islands and atolls. Seven national wildlife refuges (Wake, Jarvis, Howland and Baker Islands, Johnston and Palmyra Atolls, and Kingman Reef) are the core of the Pacific Remote Islands Marine National Monument.

Maine

The Maine Coastal Islands National Wildlife Refuge Complex is displaying a series of cast-bronze sculptures of endangered whales at its visitor center through August 2015. The artwork was sculpted by Alfred Godin, who was best known as a wildlife biologist. Godin wrote and illustrated *The Wild Mammals of New England*, published in 1977 by Johns Hopkins University Press. Over his 30-year career, Godin worked for the U.S. Fish and Wildlife Service and the Department of Agriculture's Animal and Plant Health Inspection Service. After retiring in 1991, he started to dabble in sculpture at Mount Wachusett Community College in Massachusetts. The eventual result was 13 whale sculptures, accurate in every detail. Upon Godin's death last spring at age 86, a niece and nephew suggested that his work be placed on public display. Maine Coastal Islands Refuge project leader Beth Goettel was honored to do so. "We know that we work alongside many talented people," says Goettel, "but it is always a surprise to discover how creative some of our co-workers are in their private lives."

New Mexico

Standing with members of the New Mexico congressional delegation, Interior Secretary Sally Jewell last summer announced that a diverse group of federal, state and local partners and conservation groups supported by the Land and Water Conservation Fund made it possible to acquire the lands needed to complete the 570-acre Valle de Oro National Wildlife Refuge. It is one of nine refuges in the state and the Southwest's first urban national wildlife refuge.

Established in September 2012, Valle de Oro Refuge is just south of Albuquerque and within a 30-minute drive of half of New Mexico's population. The Land and Water Conservation Fund contributed nearly $6 million of the $18.5 million total cost of the refuge, with Bernalillo County contributing $5 million. Other contributing partners included the U.S. Bureau of Reclamation, the Albuquerque Metropolitan Arroyo Flood Control Authority, the State of New Mexico, New Mexico Wildlife Federation, the Trust for Public Land, New Mexico Community Foundation, the National Fish and Wildlife Foundation and Ducks Unlimited.

"The vision for Valle de Oro was one that could only be fulfilled by people working together, pooling resources and sharing ideas," Jewell said. "This new urban refuge is a wonderful example of how Land and Water Conservation Funds can be used to leverage strong community partnerships and serve as a foundation for on-the-ground conservation and outdoor recreation projects across the country."

Oregon

Thanks in part to the presence of William L. Finley National Wildlife Refuge and the efforts of refuge wildlife biologist Molly Monroe, Benton County became

This humpback whale is among a series of cast-bronze sculptures by late wildlife biologist Alfred Godin on display at the Maine Coastal Islands National Wildlife Refuge Complex visitor center through August 2015. (Beth Goettel/USFWS)

Talk about visitor service! Kilauea Point National Wildlife Refuge in Hawaii routinely offers cold, lavender-scented hand towels to participants after guided nature walks. (USFWS)

a National Wildlife Federation-certified Backyard Wildlife Habitat Community. The certification celebrates community-wide efforts to support green landscapes and buildings, improve air and water quality, restore vital wildlife habitat and improve the health and well-being of inhabitants – one property at a time. "We're the first community habitat in Oregon," said Monroe, who helped organize the certification effort. "There are only 77 in the country."

Texas

With help from The Conservation Fund and Audubon Society, 1,350 acres of intact native coastal habitat on Bolivar Peninsula have been deeded to the U.S. Fish and Wildlife Service and have become part of Anahuac National Wildlife Refuge. The tract, part of the historic Cade Ranch, was almost lost to development in 2007 and to Hurricane Ike in 2008. The new refuge land provides habitat for shorebirds, songbirds, native mottled ducks, herons, roseate spoonbills, egrets, crabs, shrimp and small finfish.

Alaska

For the third time in the past decade, Scottish students helped restore cabins at Kenai National Wildlife Refuge. Under the guidance of park ranger Gary Titus in 2006, 2010 and again last summer, the students – from Banchory Academy, a secondary school outside Aberdeen in northern Scotland – helped refurbish three historic cabins and clear trails near them at Kenai Refuge. All of the projects required substantial physical labor. Last summer's project involved moving a four-ton boiler and carefully conducting a dig with help from retired U.S. Fish and Wildlife Service Alaska Region archaeologist Debbie Corbett. The ongoing trans-oceanic partnership has featured "three visits over eight years, involving 36 youngsters and five adults from Scotland. Hopefully we have made a small contribution to the refuge and their staff," said the students' rector Graham McDonald. "Their trust has allowed students, and staff, from Banchory Academy to have some amazing experiences with some wonderful people in a truly amazing part of the world – we feel immensely privileged."

Hawaii

Kilauea Point National Wildlife Refuge knows little things make a big difference. Taking a page from the spa/aroma therapy world, the verdant refuge overlooking the Pacific Ocean on Kauai routinely offers cold, lavender-scented hand towels to visitors after guided nature walks. "I've had people standing there speechless with jaws dropped when I come out from behind the vehicle with the pan and pair of tongs passing out towels," says supervisory park ranger Jennifer Waipa. "There are *always* comments about how they can't believe we provide this, that the Fish and Wildlife Service knows how to treat people." The refuge holds about 10 nature walks per year. The typical walk is limited to 20 participants and is three miles in 90-degree heat ending with a steep climb. Waipa credits former park ranger Sheri Saari with the lavender-towel idea.

Preparation is easy. The night before a walk, Waipa wets the towels, puts a drop of lavender oil in each towel, rolls them up, and freezes them in a shallow foil pan. The next day she lets the towels thaw in her car, and they are the perfect temperature at walk's end.

"The cost is minimal," says Waipa. "The lavender oil is $15 for a small bottle, which has lasted at least two years and will probably be around for another year; $30 for two dozen towels; and the cost of wash and dry."

The visitor satisfaction payoff is big—with a safety component as a bonus. "It's a great way to cool off after the strenuous hike," says Waipa, "They are so grateful and feel so special."

New *Conserving the Future* Program — *continued from page 1*

This decorative arch leads the way to the visitor center at J.N. "Ding" Darling National Wildlife Refuge in Florida. "Our goal is to deliver the best customer service in the federal government," says Toni Westland, the refuge's visitor services supervisor. "That means something as simple as making sure that when an employee sees a visitor coming up the ramp to the visitor center, we give them a smile from five feet away and we say, 'Welcome.'" (USFWS)

messages that can be tailored regionally. The program's training modules will be offered to all employees, volunteers, Friends and partners who work on behalf of the Refuge System.

"We are all ambassadors for our refuge or the offices at which we work," said Toni Westland, who directs the visitor services program at J.N. "Ding" Darling National Wildlife Refuge in Florida. Given its strong interest in providing excellent service to visitors, the refuge some years ago hired an experienced consultant who previously worked with the Walt Disney Co. to teach staff, volunteers and interns how to enhance customer service.

"My own personal trips to places that prided themselves on good customer service motivated me to get some training onto the refuge. Our project leader and managers fully supported the focus on improving our customer service," said Westland. "Our goal is to deliver the best customer service in the federal government. That means something as simple as making sure that when an employee sees a visitor coming up the ramp to the visitor center, we give them a smile from five feet away and we say, 'Welcome'."

The national Ambassador Program is expected to offer four to eight hours of training in 2015 for all employees.

The national Ambassador Program is expected to offer four to eight hours of training in 2015 for all employees. A team is planning the training, including a future "train the trainer" component. The team includes representatives from several Refuge System job series, including fire, biology, law enforcement and the wage-grade series, as well as employees who work regularly in visitor services. Annual refresher trainings are expected to be offered once the program is fully developed.

"Of course, the Fish and Wildlife Service is not a big retail company – like Disney," said Carlo. "But we can adapt some of the things those big companies do so successfully. We can apply those principles not only to welcoming our visitors and interacting with constituents but also to working with our co-workers and our colleagues."

DeSoto and Boyer Chute Refuges Retool After 2011 Flood — *continued from page 3*

The flood also led DeSoto Refuge to eliminate contract farming. Corn and soybean farming already had declined from a high of about 2,500 acres to 700 acres before the flood, but the deluge persuaded Cox to stop it entirely.

"We're no longer going to be harvesting seed for sale. We're no longer going to be sending anything to the [grain] elevators. What we grow here is going to be for wildlife," primarily waterfowl, he says.

"And, mathematically, I can show you that in a natural wetland that we're managing properly we're producing 2,000 pounds of food per acre as opposed to 25 percent of the crop that we get to keep" in a cooperative farming field.

All lessons learned from the flood – be they habitat lessons, wildlife lessons or infrastructure lessons – have informed the DeSoto and Boyer Chute CCP approved last summer.

Cox summarizes the lessons this way: "Rather than resist high water, we want to be able to take it – one, because our habitat needs it, but, two, because it makes sense from a storage standpoint. I'd much rather have the water here than having it back up on our neighbor's crop field and hurting his livelihood."

Report Showcases Carbon Sequestration

By Christina Meister

In addition to benefiting wildlife and improving land and water quality, National Wildlife Refuge System habitat restoration often is beneficial in at least one other important way. It reduces greenhouse gases.

Just skim the *Biological Carbon Sequestration Accomplishments Report 2009-2013* (*http://go.usa.gov/VHyx*) to see that.

"The accomplishments in this report are astounding," says John Schmerfeld, chief of the Refuge System Branch of Habitat and Restoration.

Biological carbon sequestration is the natural assimilation and storage of carbon dioxide from the atmosphere in the form of vegetation, soils, woody products and aquatic environments. The 36-page report highlights how the U.S. Fish and Wildlife Service is working with public and private partners at or near refuges to maintain and restore habitat while reducing atmospheric carbon dioxide.

Such efforts include bottomland hardwood forest restoration at refuges in the Lower Mississippi River Valley, Tamaulipan thornscrub restoration in south Texas, and the planting of endemic *A. koa* trees at Hawaii's Hakalau Forest National Wildlife Refuge.

In the Lower Mississippi River Valley, decades of agricultural clearing has reduced bottomland forest habitat to a quarter of its original size. By working with partners to acquire and reforest land, the Service provides habitat for wildlife while reducing carbon dioxide. The report cites projects at six refuges: Tensas River, Upper Ouachita, Red River, Lake Ophelia and Grand Cote in Louisiana; and Mingo in Missouri.

Those efforts "are focused on reforestation of previously cleared lands, mostly agricultural lands," says Service Southeast Region senior realty specialist Ken Clough. "Much of this land is considered 'marginal cropland,' meaning it is generally less desirable due to wetter conditions resulting in poorer soils for farming."

The Biological Carbon Sequestration Accomplishments Report 2009-2013 *(*http://go.usa.gov/VHyx*) highlights how the U.S. Fish and Wildlife Service and partners are reducing atmospheric carbon dioxide while maintaining and restoring habitat at or near refuges. Here, snow-covered Mauna Kea towers over a restored stand of native* A. koa *trees at Hakalau Forest National Wildlife Refuge on Hawaii. (Jim Kraus/USFWS)*

The Conservation Fund (TCF) is vital to reforestation of these lands. Through its Go Zero program, TCF helps individuals and corporations offset carbon emissions by planting trees. In partnership with the Service, TCF uses donations from Go Zero to acquire and reforest lands and later donates or sells the lands to the Service.

In the Lower Rio Grande Valley, more than 95 percent of native vegetation has been lost to agricultural and urban development. Since 1995 the South Texas National Wildlife Refuge Complex has led the planting of more than 10,000 acres of Tamaulipan thornscrub with almost 4 million trees and shrubs. The refuge estimates that in 20 years the project will have sequestered more than 923,000 tons of carbon dioxide.

The complex has a three-pronged approach to carbon sequestration. "First, we have an active growing and planting program using proper native vegetation to restore refuge lands. Second, we have strong outreach programs to work with the many communities of the area to teach youth and adults alike of the need and importance of native vegetation. And finally we set aside a day each year where staff and over 1,500 volunteers from all walks of life meet at a designated refuge tract to reestablish the lands with plants grown from our own native nursery," says project leader Robert Jess.

At Hawaii's Hakalau Forest Refuge, restoration includes removal of non-native species and planting the *A. koa* tree, which is known for its nitrogen-fixing properties. Since 1987, 329,000 *A. koa* seedlings have been planted in the area.

"By planting koa corridors on degraded grassland habitats and conducting enrichment plantings of other native species, we are creating a foundation of restoring ecosystem functions in an important watershed of the Big Island's windward coast," says refuge manager Jim Kraus. The refuge is also reducing atmospheric carbon dioxide.

Christina Meister is a public affairs specialist in the Service Headquarters office.

RefugeUpdate

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A Look Back . . . Joe Oliveros

Special agent Joe Oliveros was known as the "duck cop" by outlaw poachers who even fired machine guns at a boat repair shop where he was working at the Savannah National Wildlife Refuge Complex, SC/GA. Oliveros worked for the U.S. Fish and Wildlife Service for 29 years, first at the Savannah Refuge Complex and then moving to law enforcement investigations as a special agent in 1981.

During the 1980s and early 1990s, Oliveros patrolled one of the best duck hunting areas in northeast Louisiana, just east of Mer Rouge. His investigative work there deterred illegal hunting and helped waterfowl populations rebound from the drought-stricken '80s.

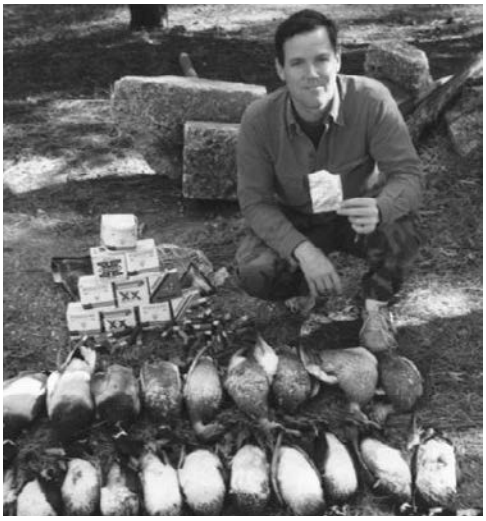
In 1994, Oliveros moved to Jacksonville, FL, where he launched an effective campaign to reduce illegal hunting of ducks and doves from Florida's Panhandle down to Lake Okeechobee. He spearheaded efforts to protect endangered manatees from boat collisions by apprehending boaters who were exceeding posted speed limits.

He so loved refuges that he got married at Blackbeard Island Refuge in Georgia, when personal celebrations were still allowed.

The Southeastern Association of Fish and Wildlife Agencies honored Oliveros as Conservation Officer of the Year in 1994. Five years later, he received the Guy Bradley Award, given annually to a wildlife law enforcement officer who displays outstanding leadership, dedication and excellence in the field. A plaque honoring Oliveros at Merritt Island Refuge in Florida calls him a "tireless defender of our nation's wildlife resources."

Refuge System law enforcement chief Jim Hall says Oliveros was a "well-rounded special agent, with a knowledge of both law enforcement and wildlife and an understanding of the culture of hunting."

Oliveros was also instrumental in improving law enforcement training programs. He taught demanding courses in waterfowl identification and Migratory Bird Treaty Act enforcement. A tribute to him at the National Conservation Training Center says a "generation of Service officers benefited from his enthusiasm, energy and professional expertise."



Joe Oliveros (1951-2001) was known as the "duck cop" for his efforts to deter illegal hunting across the Southeast. (USFWS)

Not long after he died of cancer in 2001, the area he protected from illegal hunting in Louisiana was dedicated to him.

Follow the National Wildlife Refuge System on Facebook at *www.facebook.com/usfwsrefuges* and Twitter@USFWSRefuges.

Send Us Your Comments

Letters to the Editor or suggestions about *Refuge Update* can be e-mailed to RefugeUpdate@fws or mailed to *Refuge Update*, U.S. Fish and Wildlife Service, Mail stop: NWRS, 5275 Leesburg Pike, Falls Church, VA 22041-3803