



RefugeUpdate

National Wildlife Refuge System

www.fws.gov/refuges



This photograph of river otters at Indiana's Patoka River National Wildlife Refuge was taken by Steve Gifford. "The refuge calms my heart and restores my soul," says Gifford, a longtime volunteer and Friend. For more about Friends and volunteers, see the Focus section, beginning on page 8.

Volunteer Captures the Essence Of Patoka River Refuge

By Bill O'Brian

Steve Gifford was recently asked why he volunteers at Indiana's Patoka River National Wildlife Refuge. His response is inspirational:

I guess when most people think of the great outdoors and some of the most beautiful places to see wildlife, the reclaimed strip mines and flooded river bottoms of southwest Indiana are probably not on the top of their minds. But the reality is that we have abundant opportunities to see some of God's creation at its best right here at home without having to travel great distances to exotic locations. With as busy as most people are and as stressed out as we seem sometime due to finances, health, work and whatever is making headlines on a particular day, I really believe people need a place where they can get away from it all. For me, being able to get out on the refuge calms my heart and restores my soul a bit, and helps me put things in perspective. I think it can do the same for others if we help make them aware that it is there for them to use and enjoy.

As a volunteer and Friend for most of the past decade at Patoka River Refuge, Gifford has assisted with marsh bird surveys, Christmas Bird Counts, least tern-nest monitoring, trail clearing, invasive plant control, prescribed burns and presentations.

Habitat Restoration Stimulates Local Economies

A U.S. Fish and Wildlife Service peer-reviewed analysis finds that the agency's habitat restoration programs are extraordinary engines for the nation's economy. The analysis, *Restoration Returns: The Contribution of Partners for Fish and Wildlife Program and Coastal Program Projects to Local U.S. Economies*, says that, in working directly with partners to implement vital on-the-ground habitat restoration, Service programs created more than 3,900 jobs in fiscal year 2011, generating a total economic stimulus of \$327.6 million.

"The Partners for Fish and Wildlife and Coastal programs are important drivers for creating employment. The benefits reach far beyond the local communities where these projects

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Volunteers from Women in Preservation clean up 1848 lighthouse ruins at Wisconsin's Green Bay National Wildlife Refuge before an archaeological dig. (Friends of Plum and Pilot Islands)

Chief's Corner

Culture of Community Anchored in Refuges

Isometimes wonder how many professions can claim to have friends like we do.

I doubt there are “Friends of the IRS” or “Friends of Podiatrists.” Not that those aren’t noble enterprises, but I doubt that they would draw a loyal following.

What is it about our profession that draws people to volunteer their time and offer money to help? Honestly, it really isn’t about us. People care about the wildlife they find at national wildlife refuges. There is a special sense of place that refuges evoke. People experience more than mere “fun” at refuges. They find deeply personal meanings that are

essential to self-identity.

You will hear people talk about “the swamp” or “the beach” or “the marsh” as if there were no others. They talk about *my refuge* with a reverence and

a sense of stewardship. Our Friends and volunteers have a personal relationship with these special places and the wild creatures that live here.

I remember a volunteer who was the first treasurer of the Seney Natural History Association, the Friends organization at Seney National Wildlife Refuge in Michigan’s Upper Peninsula. Harold Peters was an 86-year-old retired game warden. He came in every day to count

the money from the bookstore and deposit it in the local bank. He would recount stories about his career – stories a lot older than I was.

He told me about the time he was on patrol during the second week of deer season when a big snowstorm blew in and his Model A Ford was stuck in the backwoods all winter. He went back in the spring to discover that porcupines had eaten the wooden spokes off of all the wheels.

His stories were the stories of his connection to the place, and he wanted to share those connections with me.

Refuges draw people from local communities together for a common cause. Many times local communities have rich histories with places that are now called national wildlife refuges. The culture of communities is often anchored in a long-standing relationship with the land. Friends groups are special communities that share a strong connection to their refuge and its wildlife.

These two characteristics – a sense of place and a sense of community – are the essential keys to effective stewardship. Conservation is like politics: All effective conservation is local.

Our Friends and volunteers are the essential core of support for effective conservation. Their collective efforts make a huge difference for the National Wildlife Refuge System. And they know how to have fun. They have my thanks and admiration. 



Jim Kurth

Refuge Update

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After being flooded out, re-inventoried and reorganized, the steamboat Bertrand collection is back on display at DeSoto Refuge in Iowa-Nebraska. Page 5

Spill Threatened Cranes

A massive oil spill this spring imperiled endangered whooping cranes on Matagorda Island, part of Aransas Refuge in Texas. Page 6

Focus: Friends and Volunteers

Friends and volunteers are vital to the Refuge System mission. More than 200 Friends organizations support refuges, and 38,609 volunteers contributed more than 1.4 million hours of work at refuges last year. Pages 8-14

A Profile in Courage at Cape Romain Refuge

By Bill O'Brian

South Carolina's Cape Island has long been known for its loggerhead turtle-nesting beaches and its place in the Class I wilderness area at Cape Romain National Wildlife Refuge. Now, the island also is known as a site to commemorate one of the most courageous acts in American history.

The refuge recently learned from the National Oceanic and Atmospheric Administration (NOAA) that remains of the *USS Planter* likely have been found on a shoal about one-third of a mile off today's Cape Island. The remains are buried in 15 feet of compacted sand 12 feet below the Atlantic Ocean's surface at what was the island's southern tip in 1876, when the side-wheel steamer was abandoned.

The *Planter* launched in 1860 as a commercial vessel. A year later, with the outbreak of the Civil War, it became the armed *Confederate States Ship (CSS) Planter*. But in the pre-dawn hours of May 13, 1862, Robert Smalls, a 23-year-old enslaved African American crewman on the steamer, commandeered the 147-foot vessel in Charleston harbor, snuck it past Confederate forces and turned it over to the Union Navy. In the process, Smalls carried himself and 17 other black slaves aboard the *Planter* to freedom.

"When I learned of Smalls' bravery and subsequent accomplishments, I was awed and felt a rush of exhilaration," says Raye Nilius, project leader of the South Carolina Lowcountry Refuges Complex, which includes Cape Romain Refuge. "His story truly resonates with me, as I believe it resonates with many Americans whose immigrant ancestors came to this country to escape persecution and oppression."

During the remainder of the Civil War, Smalls became captain of what was by then the *USS Planter*. After the war, Smalls went on to serve, as a Republican, in the South Carolina Legislature and, for five nonconsecutive terms, in the U.S. House of Representatives. He died in 1915 in the city of his birth, Beaufort, SC.



In a daring act of heroism, enslaved crewman Robert Smalls commandeered the Confederate States Ship (CSS) Planter in 1862 – during the Civil War – and turned the vessel over to the Union Navy. What are believed to be remains of the steamer were found off Cape Island, part of Cape Romain National Wildlife Refuge in South Carolina. Smalls went on to serve five nonconsecutive terms in the U.S. House of Representatives. The Planter is shown here in a Harper's Weekly engraving. (USFWS)

The *Planter* returned to commercial service after the Civil War. While attempting to rescue a schooner that had run aground in March 1876, the *Planter* itself sprang a leak, was beached at Cape Island and, after being battered by storms, had to be abandoned.

NOAA and maritime research partners first detected the remains in 2010 by using historical and cartographic data and remote-sensing magnetometer and sonar technology. NOAA did not announce its conclusion that "it has determined the probable location of the remains" of the *Planter* until this May.

"We consider it an honor that the ship's final resting place is on Cape Romain and will long revere these heroes while we enjoy life in a nation where freedom is paramount," says Nilius.

Cape Romain Refuge is home to several other important cultural resources: Mill

Island, where a wind-powered sawmill owned by the family of Declaration of Independence signer Thomas Lynch produced lumber in the late 1700s; Bulls Island, which has a rich Native American, pirating, Civil War and early conservation history; and two lighthouses on the National Register of Historic Places.

The discovery of the *Planter* stands apart, though.

"The bravery shown by Mr. Smalls and the success of the mission gave the enslaved hope during the Civil War and boosted resolve to win a war for the freedom of all Americans," says Cape Romain Refuge manager Sarah Dawsey. "I believe it is quite relevant with President Obama being the first African American president of the United States. If the Union lost the Civil War, then I dare say we would most likely not have an African American president." 🦋

ServCat Helps I&M Specialist Preserve a Legacy

By Lindsay Brady

Launched in 2011, the Service Catalog (ServCat) is a centralized online database designed to preserve information about, or used by, the U.S. Fish and Wildlife Service. Jean Kenyon, inventory and monitoring specialist at the Hawaiian and Pacific Islands National Wildlife Refuge Complex, is one of ServCat's most enthusiastic users.

Kenyon knows that when a Service employee transfers or retires from a refuge or other field station, that person's work, research and collected data could be lost if not safely stored for future access. ServCat (<https://ecos.fws.gov/ServCat/>) is the Service's solution.

Now, as a Service employee, she continues to analyze and archive Maragos' extensive catalog of support material, including data sheets, notes, spreadsheets and thousands of 35mm slides. Apart from Maragos and Kenyon, it's unlikely that anyone could decipher the notes describing slides or labeling data sets.

The information Kenyon has entered into ServCat represents baseline data that depict the conditions of coral reef ecosystems the first time they were seen by human eyes. Without such a baseline, further scientific assessment is difficult. Whether 20 minutes or 20 years from now, biologists will be able to compare the reef conditions they observe to the

Kenyon has entered approximately 6,700 digital photographs and 150 reports and peer-reviewed papers on coral reef ecosystems in the Pacific.

coral reef ecosystems in the Pacific and their management.

"I couldn't have done it without the help of the ServCat team," she says. That team, based at the Natural Resource Program Center in Fort Collins, CO, has included Sarah Shultz, Dan Craver and Richard Easterbrook.

Kenyon knows that an easy ServCat search by refuge name or species will quickly give wildlife biologists and refuge managers – now and in the future – valuable information regarding a specific region, refuge or wildlife management issue.

"Science is a layering process," she says. "We need to build on and learn from the work of others. But the reality is that people leave. They get new jobs or they retire. What happens to their data, their legacy afterwards? People tend to lose track."

"Storing data in ServCat prevents that loss," says Jana Newman, chief of the Natural Resource Program Center's Inventory and Monitoring Branch. "But data tucked away that can't be found are also lost. With ServCat, we have made it easy to store and share information."

ServCat data are available to the public through data.gov, a clearinghouse for federal government data, and ServCat makes it easy for Service scientists to share data with other researchers, agencies and nongovernmental organizations. 🐟

Lindsay Brady is a social scientist at the Natural Resource Program Center in Fort Collins, CO.



Hawaiian and Pacific Islands National Wildlife Refuge Complex inventory and monitoring specialist Jean Kenyon is using the Service Catalog (ServCat) to preserve baseline data about coral reef ecosystems that otherwise might be lost. (Jean Kenyon/USFWS)

For example, Kenyon is using ServCat to preserve the work of former Service biologist James Maragos, one of the Refuge System's foremost experts in coral reef ecosystems, who retired in 2011. As a contractor with the National Oceanic and Atmospheric Administration (NOAA), Kenyon partnered with Maragos for 10 years. They conducted underwater assessments and documented families, genera and species of coral at each of the Hawaiian and Pacific Islands refuges.

baseline data. Such information is vital to the study of reefs in relation to human impact, coral bleaching and climate change.

"ServCat is the ideal tool to preserve it all," says Kenyon, who has spent considerable time scanning slides, transcribing notes and developing metadata. To date, she has entered approximately 6,700 digital photographs and 150 published and unpublished reports and peer-reviewed papers on



When the steamboat *Bertrand* sank on April 1, 1865, it was headed up the Missouri River loaded with provisions. This model and more than 250,000 artifacts from the vessel are preserved and displayed in a museum collection at DeSoto National Wildlife Refuge on the border of Iowa and Nebraska. (Bill O'Brian/USFWS)

The *Bertrand* Is Back at DeSoto Refuge

By Bill O'Brian

The steamboat *Bertrand* is back!

In 1865, the *Bertrand*, loaded with Civil War-era cargo, sank in the Missouri River. In 1968, it was found buried on DeSoto National Wildlife Refuge, its provisions remarkably intact. In the 1970s, many of those provisions were first displayed in a refuge exhibit. In 2011, a flood of historic proportions engulfed the refuge visitor center, and the 250,000-artifact *Bertrand* collection had to be evacuated.

This summer, the collection is back – and better than ever.

“The collection reflects a time when this country was just expanding onto the frontier, a time when they viewed the natural resources as unending and infinite. Now we know, 150 years later, that that is not the case, that resources are limited and we have to husband them,” says collection curator Dean Knudsen. “These artifacts give us a chance to tell that story, the need for conservation and caring for resources.”

That story was threatened in June 2011, when a deluge inundated DeSoto and its sibling refuge Boyer Chute, which are on the Iowa-Nebraska border. With the help of U.S. Fish and Wildlife Service colleagues, the National Park Service, the Iowa Department of Natural

Resources and hundreds of volunteers, the refuge evacuated the collection in a week. For about two years, while visitor center repairs were made, the artifacts were warehoused off-site.

Knudsen and museum specialist Bill Cantine used the warehouse downtime to inventory and reorganize the collection. They revamped the artifact numbering system to make retrieving items easier. They re-labeled and re-cataloged 80 percent of the artifacts. What remain to be cataloged are textiles, a task that is time-intensive, says Knudsen. “They tend to be very fragile, and we need to get them on mounting boards and into the proper kind of storage.”

In the meantime, the *Bertrand* collection is back on public display at the DeSoto Refuge visitor center, a 30-minute drive north of downtown Omaha.

When the *Bertrand* sank on April 1, 1865, it was headed upriver toward mining towns in what was then the Montana Territory. It was carrying a

Video Online

A video related to this article, “Sunken Treasure: The Steamboat *Bertrand*,” is on the U.S. Fish and Wildlife Service YouTube channel: <http://bit.ly/1oIfpCS>

After a 2011 flood of historic proportions, the museum collection was evacuated and reorganized.

dozen passengers, all of whom survived. It was also laden with tools, foodstuffs, clothing, cannonballs and lots of alcoholic beverages. The cargo is extraordinarily well-preserved after being entombed in the steamboat’s hull and river muck for a century.

Among the tens of thousands of artifacts, 20 percent are on display at any given time. The rest are in safe – and, in some cases, refrigerated – storage. Still, a visitor can count on seeing beautiful china and crystal, candleholders, porcelain doorknobs, sophisticated metal spigots, assorted tools, food supplies, socks, shoes, boot leggings made from bison hides, and other vestiges of America’s western expansion.

Knudsen and Cantine acknowledge they have favorite artifacts.

Knudsen likes the brandied peaches, which “still look like they’re edible,” he says. “People always ask if I’m tempted, and I say, ‘Yes, I’m tempted, but so far I have not succumbed.’” He also likes passengers’ personal items – a girl’s school slate, a boy’s pantaloons.

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Oil Spill Threatened Aransas Refuge Whooping Cranes

By Nancy Brown

A bulk carrier collided with a barge in the Houston Ship Channel on March 22, releasing approximately 168,000 gallons of marine fuel oil into Galveston Bay and, eventually, the Gulf of Mexico.

Significant oil drifted 150 miles south, making landfall on Matagorda Island. The island is part of Aransas National Wildlife Refuge, the winter home to the only natural flock of endangered whooping cranes. At the time, approximately 70 percent of the estimated 304 whooping cranes had not begun their migration to Wood Buffalo National Park in Canada. U.S. Fish and Wildlife Service biologists estimated 40 to 60 cranes were on Matagorda Island.

Before the spill reached Matagorda, the refuge sent Service teams to assess conditions and establish a baseline on the island's gulf side. Matagorda is part of a barrier island chain along the Texas shoreline.

Besides wintering whooping cranes, the island has 11 pairs of nesting aplomado falcons, a resident species extirpated from the United States in the 1950s and now being reintroduced successfully. Kemp's Ridley sea turtles often nest on area beaches. Matagorda Island is also important for migratory birds, including piping plover and shorebirds that feed on beaches and roost in foredune vegetation. The bay system between Matagorda and the mainland includes estuarine flats, tidal flats and seagrass beds that support shellfish, sport fish, wintering waterfowl, sea turtles and more.

The oil that reached Matagorda did not disperse into the bay system, but it did impact approximately 25 miles on the gulf side of the 38-mile island. Of that, 4.3 miles received significant coverage, up to 70 percent. Two days after the heavy black oil reached the island, wind and wave activity buried most of it under 0.5 to 4 inches of sand. The oil consisted of everything from tar balls and mats to viscous and tacky black masses that, long after impact, still soften under

the sun's heat. The oil was within the intertidal zone and extended 30 yards into vegetation within the wrack line.

Cleanup challenges included limited access to (and on) Matagorda, remote conditions and the need to protect natural resources. Task forces used manual labor and light mechanical equipment to remove oiled sand. Workers shoveled oiled materials into piles. Skid steers deposited the piles into dump trucks for removal to an off-island waste disposal site.

Almost 5.5 million pounds of oiled sand were removed. At its peak, the response at Matagorda included 520 staff, 103 utility task vehicles (UTVs), 104 dump trucks, 15 skid steer loaders, three helicopters and 31 boats. A total of 187 dead animals were collected on Matagorda. Tests will be conducted to determine cause of death.

Ninety miles of shoreline were impacted by oil that drifted south – at Matagorda, privately owned San Jose Island, Mustang Island State Park and Padre Island National Seashore.

The incident response was overseen by a unified command consisting of the Coast Guard, Texas General Land Office, the Service and the party responsible for the spill. Texas Parks and Wildlife and the National Oceanic and Atmospheric Administration (NOAA) were among agencies responding within the unified command.

Service personnel from Texas refuges, the Ecological Services field offices and the Office of Law Enforcement, with support from the Southwest Region office, responded to protect wildlife and habitat. Mid-Coast Texas Refuge Complex and Aransas Refuge staff are working with Natural Resource Damage Assessment (NRDA) federal and state trustees to complete NRDA surveys. 

Nancy Brown is a Southwest Region public outreach specialist based at Balcones Canyonlands National Wildlife Refuge, TX.



Marine fuel oil from a spill in the Houston Ship Channel washed up onto Matagorda Island this spring. The island is part of Aransas National Wildlife Refuge on the Gulf of Mexico coast in Texas. (Nancy Brown/USFWS)

Native Bees: “A Good Barometer of What’s Happening”



By Bill O'Brian

You can call Wedge Watkins lots of things: wildlife biologist; bottomland bee specialist; U.S. Fish and Wildlife Service Midwest Region pollinator coordinator. Just don't call him a pollinator expert.

Even though he has facilitated the documentation and specimen collection of approximately 125 butterfly and moth species and 150 native bee species at Big Muddy National Fish and Wildlife Refuge in Missouri, Watkins bristles at being called an expert.

Maybe so, but the nine-year Service veteran with 30 years of federal conservation experience has been studying pollinators at Big Muddy Refuge since 2006 – and he has helped Midwest Region colleagues rethink their approach to pollinator surveying.

Big Muddy Refuge – 11 units on 17,600 acres along the Missouri River between Kansas City and St. Louis – is just 20 years old. One of the refuge's long-term goals is to reestablish plant communities native to the river's floodplain. To do that, the refuge needs to be able to monitor habitat health over time.

Because pollinators have an annual life cycle in which they typically don't migrate and live within a one- or two-mile radius, Watkins says, “they're a

good barometer of what's happening in a particular place.”

The Big Muddy Refuge goal has been to get a baseline of what is present and – as vegetation changes and ecological succession occurs – look for a somewhat predictable response in pollinator fauna. “If that doesn't happen, or if we get some deviation from that, then we can start asking why,” says Watkins.

So, from 2006 to 2008, Watkins collected butterflies and moths on the refuge. With help from the University of Missouri's Enns Entomology Museum

While honeybees nest in hives, most native bees nest in soil, plant stems or wood.

and Missouri Master Naturalists, he surveyed floodplain forest, wet prairie and bluff-top fields. In 2009, the focus switched to native bees – with help from recently retired Missouri Department of Conservation natural history biologist Mike Arduser and U.S. Geological Survey Patuxent Wildlife Research Center biologist Sam Droege. And now, because pollinator surveying is an economical way to monitor plant communities, Watkins has involved more than a dozen Midwestern refuges in

Left: Career Discovery Internship Program participant Radiance Abdelkader holds a liquid-filled bowl used to capture native bees during a transect survey last summer at Big Muddy National Fish and Wildlife Refuge in Missouri. Right: Bumblebees mating at Big Muddy Refuge. (USFWS)

similar surveys, most near big rivers like the Missouri and Mississippi.

“When people in the past went to look for bees and butterflies,” he says, “they did not go to large river floodplains; they went to prairies. So, we're finding out new information.”

As result, Watkins can tell you a lot about pollinators:

- In the Midwest Region's eight states, there are about 650 native bee species; 450 in Missouri alone.
- Honeybees and bumblebees are colonial, but most native bees are solitary – and about 15 percent are kleptoparasitic; the female lays an egg in another female's nest (much as the cowbird does).
- While honeybees nest in hives, most native bees nest in soil, plant stems or wood. And after the female builds a nest, provisions it with pollen and nectar and lays eggs, no adult tends the nest, feeds the young or turns the pupae.

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A Q&A Interview With Friends Coordinator Joanna Webb

Joanna Webb has been the National Wildlife Refuge System Friends coordinator since 2011. She is a 26-year veteran of the U.S. Fish and Wildlife Service and has worked in visitor services programs at numerous refuges. As national Friends coordinator, she has revamped Friends Academy, helped rethink the Friends mentoring program and overseen the establishment of a Service Friends Policy, which was signed by Director Dan Ashe on April 4. Here are excerpts from a recent *Refuge Update* interview with her.

Q. *How long has the new Service Friends policy been in the works, and why was it established?*

A. Discussions about the need for the policy started as far back as 2005 and possibly even before, with the drafting of the policy starting in 2007. The policy was established to provide Service employees with answers to the most frequently asked questions by field and regional staff as the complexity of our relationships with Friends organizations grew.

Q. *What are the two or three most important things that Service staff members on refuges should know about the policy?*

A. First, we'd like staff to understand that the Friends policy is not really creating any new policy; it is mostly compiling and centralizing existing policies and laws into one go-to document. Second, the policy creates an ethical separation between official Service business and the business of a nonprofit organization. Absent clear policy, some Service employees have blurred the line on appropriate involvement in the business of these nonprofit organizations, and changing that will require a paradigm shift.

Q. *What are the two or three most important things that refuge Friends, volunteers and partners should know about the policy?*

A. Well, the Friends policy is specific only to our unique relationships with Friends organizations, not other community partners. Friends and volunteers – often interchangeable roles involving the same people – should know that the policy now provides one consistent answer about the distinction between Friends and volunteer activities and which hours fall under the protection and hours-tracking systems of the Service. As the Service regional offices work with field stations to implement the new policy, Friends should know that a shift may be needed as it relates to their activities on Service property. There have been long-standing government restrictions on soliciting for donations, charging the public recreation fees and the level of involvement of Service staff and volunteers in certain Friends activities, such as fundraising through nature stores. These are not new restrictions; we've just never had everything compiled into one document.

Q. *Overall, what kind of reaction, positive or negative, have you received from staff members or Friends regarding the new policy?*

A. I believe people give more negative reactions to any and all changes in general. But I have to tell you that there are staff who have expressed to me how happy they are that the policy is now available. And a Friend wrote, "My reaction is it takes a common-sense approach and is very straightforward. A good document to keep handy during board meetings." The folks who are having a negative reaction appear to be reacting to one or two issues specific to them that will require huge changes in the way they've been doing certain things. We understood that some of these changes would be painful, and that is why the Director approved a six-month implementation period, something that is not customarily offered with the finalization of policy.

Q. *When was the Refuge System Friends program established, how has it grown over the years, and are new Friends organizations still being created around the country?*

A. The first Friends organizations began forming as cooperating associations in the early 1980s. With the help of the National Wildlife



Members of Friends of the Arthur R. Marshall Loxahatchee National Wildlife Refuge in Florida lead a canoe tour. (Tom Rasmussen)

Refuge Association, the National Fish and Wildlife Foundation and the Audubon Society, the number of Friends organizations doubled from the late 1990s to present – to more than 200. However, we’ve reached a plateau on the establishment of new Friends organizations. According to the Volunteer and Partner Involvement plan, a *Conserving the Future* strategy document, there are currently 139 staffed refuges that do not have a Friends organization. It is likely that most of those refuges have small staffs and/or are located in communities where it would be challenging to support a viable Friends organization.

Q. *The Conserving the Future Community Partnerships implementation team recently completed a Friends Mentoring Action Plan. What is the primary purpose of that plan, and where can people find information about it?*

A. While it’s important to continue to assess the development of new Friends partnerships, we need to maintain a strong focus on sustaining the existing Friends partnerships we have. A large percentage of these partnerships are going through critical organizational life-cycle stage issues. A face-to-face mentoring program is being redeveloped to help staff and Friends understand and manage through these cycles. That mentoring plan can be found on the Refuge System’s *Conserving the Future* web page (<http://www.fws.gov/refuges/vision>) by selecting the Community Partnerships implementation team.

Q. *What are the Refuge System’s main goals regarding Friends over the next few years?*

A. Those are outlined in the Volunteer and Partner Involvement plan, on the same web page I just mentioned. The overarching goal is to strengthen existing programs to increase the effectiveness of our

Jerry McDonnell



Left: Friends of Alaska National Wildlife Refuges volunteer Betty Siegel pulls weeds as part of a Kanuti National Wildlife Refuge invasive species control project. Right: A young volunteer works with a gopher tortoise at Okefenokee National Wildlife Refuge in Georgia.

Ryan Hagerty/USFWS



Friends partnerships, including Friends Academy, the mentoring program, the Friends grant program; and the development of new online training programs for both Friends and staff. The more difficult goals for everyone will be to develop stronger ties between Friends organizations and volunteers, and recruiting new board members with the right skills to help with the business side of nonprofit management as well as providing a base of volunteers to execute conservation mission work.

Q. *Why are Friends organizations so important to the Refuge System and its mission?*

A. I liken it to when I was single versus married. When I was single, I had to work harder to get half as much done, and I did most of it alone. When I got married, I suddenly got an enormous amount of things accomplished in half the time, and I also had someone with similar interests to share it with, which makes the journey a whole lot more fulfilling and rewarding. The work of wildlife conservation is a perpetual journey, and it’s a bonus if you have Friends with you on that journey. 🐦

News You Can Use

Friends and volunteers are vital to the National Wildlife Refuge System and its conservation mission. More than 200 Friends organizations support refuges from Alaska to the Caribbean and Maine to the Pacific. In 2013, 38,609 volunteers contributed more than 1.4 million hours of work at refuges across the country.

To learn more:

Refuge System Friends Home Page
<http://www.fws.gov/refuges/friends/>

Find-a-Friend Map
<http://www.fws.gov/refuges/friends/find.html>

The New Friends Policy
<http://www.fws.gov/refuges/friends/friendsPolicy.html>

Fish and Wildlife Service Director Dan Ashe on the Friends Policy
<http://bit.ly/1mHm0KG> (video)

U.S. Fish and Wildlife Service Volunteers Home Page
<http://www.fws.gov/volunteers/>

Refuge Resident Volunteer Opportunities
<http://www.fws.gov/volunteers/volProgramList.html>

Federal Conservation Volunteer Opportunities
<http://volunteer.gov/> 🐦

Master Bird Bander, Treasured Volunteer

By Jenny Howard Owen

It was a “geezer” who got Chincoteague National Wildlife Refuge volunteer Richard Roberts started on birds, but it’s children who keep him going.

“The first time I went out, I was watching one of the old geezers who spent the *whole* day locating migratory warblers, pointing them out to me and naming them all,” says Roberts. “Even though he didn’t keep a list, he was able, at the end of the day, to cite every bird, its location and when we had seen it. I thought, ‘wouldn’t it be great to be able to do that?’ ”

That experience, in 1965, with the Syracuse (NY) Audubon chapter hooked Roberts on a lifetime of studying birds – all as a volunteer.

Trained as a biochemist, Roberts, 83, has spent more than half a century dedicating his free time to the study of birds.

“I’m not an ornithologist,” he says. “And I’m not even a birdwatcher. I am a bird studier. I spend my time observing their habits, studying them, tracking them over time, banding them. I don’t spend time listing them – that’s what birdwatchers do.”

Roberts has given countless years and hours to The Nature Conservancy, the Virginia Society of Ornithology, the Ward Museum of Wildfowl Art and the Syracuse Audubon group. Since 1997, he has volunteered at Chincoteague Refuge, which last year honored him for more than 6,000 hours of service.

“Dr. Roberts has given the equivalent of more than an hour a day for the past 16 years to studying birds along our Atlantic Flyway,” says Kevin Holcomb, supervisory biologist at the refuge on Virginia’s Eastern Shore. “His work has been incorporated into refuge planning documents, including the refuge’s habitat management plan, which guides our daily operations. He’s truly been an asset to our program.”



Richard Roberts confers with park ranger Amanda Walker at Chincoteague National Wildlife Refuge. Since 1997, Roberts has volunteered more than 6,000 hours of service at the refuge on Virginia’s Eastern Shore. (Nick Greif)

During his initial season at Chincoteague Refuge, he offered his help on a survey for pine bark beetle infestation, wherein he “walked the whole refuge; I got to know every inch of the place.” That knowledge helped him in assisting refuge staff with owl censuses, turtle monitoring and the task that would become an almost year-round commitment: bird banding.

Over the years, Roberts – a master bird bander – has operated his nets during every season, banding 107 species at Chincoteague Refuge. His work was initially designed to supplement the refuge’s waterfowl-rich data with songbird data, but it since has been applied to wildlife management strategies and decision-making. For example, his documentation on the prevalent use by wintering sparrows of shrub habitat along waterfowl impoundments led refuge staff to end fall vegetation trimming in that area. And the refuge has changed its mowing regime based on banding data that demonstrated the significance of scrub shrub habitat to neotropical migrants and wintering birds.

Roberts’ work also supplements education and outreach. He gives field presentations on the netting/banding process to visitors and student groups – and he encourages fellow volunteers and refuge staff to help out.

“Volunteers will tell me, ‘I don’t know anything about biology;’ ” Roberts says, “but they can learn just the way I did, in the field.

“One 85-year-old woman joined me once for nighttime banding of saw-whet owls; she helped me by holding the owls while I banded them. She said it was the ‘peak experience of her life.’ Imagine that!”

When it comes to public programs, Roberts has his preference, though.

“The little kids are the best. It’s nice to teach the adults,” he says, “but I’ve seen the biggest impact with educating children.” 

Jenny Howard Owen is a former visitor services specialist at Chincoteague National Wildlife Refuge in Virginia.

At Tualatin River Refuge, 381 Custodians and Advocates

By Dylan Knapp

“Smiles. Laughter. Passion. Heart. And dedication,” says Tualatin River National Wildlife Refuge manager Erin Holmes. “This is what I see every day when I come to work and see a member of the Friends.”

It's little wonder Holmes feels that way.

Friends of the Tualatin River National Wildlife Refuge members contributed more than 17,000 hours of volunteer time last year to the refuge in suburban Portland, OR. In recognition of that outstanding effort, the organization received the 2014 National Wildlife Refuge System Award for Friends Group of the Year, presented by the National Wildlife Refuge Association.

The Friends support Tualatin River Refuge in numerous ways. Friends volunteers help maintain trails, monitor birds, and create and lead fun, informative programs for adults and children. Those programs include a weeklong summer nature camp for elementary school students and field trips for students of all ages. Friends also assist with Puddle Stomper day camps that teach preschoolers about insects and creepy-crawlies that wriggle about in mud puddles. Friends host night hikes in search of owls and lead heritage programs that bring to life the history of Native American peoples who once lived, hunted and gathered in the area.

Each May, Friends help connect the refuge with the local community via the Tualatin River Bird Festival. This year's festival, the 18th annual, attracted more than 1,000 visitors for a day of free family-friendly activities.

Last year, Friends volunteers helped Portland General Electric and other partners stabilize a bald eagle nest in a dying oak tree that was in danger of falling over.

“I believe that each person has a need to find a way to make a difference in the world,” says Cheryl Hart, president of



Tualatin River National Wildlife Refuge outside Portland, OR, provides Puddle Stompers with rain gear. The refuge's award-winning Friends group often provides volunteers to help run the environmental education program for preschoolers. Here, the kids can't take their eyes off a rough-skinned newt. (USFWS)

the 381-member Friends organization. “Everyone will have her own idea of how to do that. For me, that is doing whatever I can to preserve nature.”

More than custodians of the refuge and hosts of events, the Friends are also fierce advocates. Last summer, the Friends and co-plaintiff Northwest Environmental Defense Center won a lawsuit settlement that will help conserve healthy habitat at and near the refuge. The case involved an unlined landfill that had been leaching into the Tualatin River, which flows through the refuge. Under the settlement, operators of the now-closed landfill will pay \$7 million to the state of Oregon to hire contractors to clean up contamination from the landfill.

Retired Tualatin River Refuge project leader Ralph Webber calls the lawsuit victory “a ‘big league play’ that would rival the efforts of any national environmental nonprofit and/or Friends group organization.”

Besides being stewards of and advocates for Tualatin River Refuge, the Friends

also enjoy its wetland, riverine and upland habitat. “I love that less than a mile from my home in the Portland metro area, I can get lost in nature,” says Friends president Hart. “I can see a great blue heron, close enough to touch. I can feel the breeze as it moves through the trees. I can hear a red-tailed hawk calling, and I can completely escape the hustle and bustle of the city.”

For Friends member Mary French, Tualatin River Refuge “represents a sustained future for numerous important species – in particular the migrating birds who use the refuge as a stopover on their route, a wintering ground to rest and recover, or a final destination to raise the next generation. Knowing I am a part of a group of people who help support this land and these species is deeply satisfying.” 🦋

Dylan Knapp is an external affairs intern and part of the Veterans Administration's vocational rehabilitation program in the Pacific Region office in Portland.

Fishing, Hammering, Serving



By Karen Leggett

“It’s an astounding place,” says refuge volunteer John Hale, speaking of Mattamuskeet National Wildlife Refuge in North Carolina. “All the waterfowl ... the sun setting over that lake ... I love it year-round.” In fact, his feelings for the refuge are so strong that he rounds up a team of volunteers once a year to spend a week or more pounding nails there.

“We like projects that the general public can use,” says Hale. So his volunteer crew has built photo blinds, observation decks and hundreds of wood duck boxes. His crew also has moved and repaired a banding blind, built a small boat launch and added a walkway to a water control structure that is used for fishing and crabbing.

Hale is a retired surgeon who has fished Mattamuskeet Refuge for more than 30 years. He learned to use power tools, figured out state building codes and met other men who also loved big tools and hammering nails while volunteering with Habitat for Humanity. Each year when Habitat stopped working outdoors in October, says Hale, there were all these “guys with their hammers and power tools and nothing to do.”

Above left: Once each year retired surgeon John Hale, in yellow jacket, gathers a volunteer crew to complete a major project at Mattamuskeet National Wildlife Refuge in North Carolina. Above right: After Hurricane Irene in 2011, Hale and crew repaired a popular pier at nearby Swanquarter Refuge. (USFWS)

So Hale started bringing them to the refuge for one major building or repair project each year. The core group is composed of retirees from all over North Carolina. They include several engineers (but only one civil engineer), a hospital administrator, a YMCA executive, two pilots and a law enforcement officer. They stay at Hale’s nearby hunting lodge, fishing for their dinner and enjoying the annual camaraderie. They’ve been doing it for close to a decade.

The refuge manager chooses the project each year, providing materials and staff support as needed. This year, refuge manager Pete Campbell wants an accessible wildlife observation platform to be built on the far side of a marsh near the refuge entrance. Refuge staff members will put in the posts; Hale’s crew will add the decking and railing.

“They enhance our public-use capability,” says Campbell. “Our very limited staff has to focus on day-to-day operations, so these enhancement projects can’t be a high priority. Having a group step in and build something for the public is invaluable.”

Campbell believes the volunteer model could be replicated at other refuges (see examples in April 2014 *Friends Forward* <http://go.usa.gov/8yWP>), but he acknowledges that this group thrives because of Hale’s enthusiasm. Andy Brown, the civil engineer, concurs. “We think it’s a job that should take three days, and John pumps everybody up and we do it in two days.”

The men agree that their most challenging project was rebuilding Bell Island Pier at nearby Swanquarter National Wildlife Refuge after Hurricane Irene in 2011. “The public was calling every day to know when the fishing pier would be repaired,” recalls Campbell. So with \$3,500, nine volunteers and 400 hours, it was rebuilt that December.

“We had to start on both sides and meet in the middle,” says crew member Malcolm McLeod. Emergency boats were ready in case anyone fell into the chilly water.

Like Hale, McLeod simply enjoys being at the refuges. Mattamuskeet Refuge is an “undiscovered gem,” he says. “I hope we have another decade to work.”

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

A Passerby Becomes a Committed Volunteer

By Phillip Bonn

Like many people in my part of the world, I had driven through Montezuma National Wildlife Refuge on the New York State Thruway west of Syracuse many times. From the highway, the refuge looked like a sea of cattails. How boring, I thought. Why would anyone want to spend time in weeds and reeds?

I knew migrating birds swept through the refuge in spring and fall, but that was pretty much all I knew. So, out of curiosity, I took several rides on Wildlife Drive, a 3.5-mile auto tour route on the refuge. I remained underwhelmed.

Then in November 2011, I saw a notice in a local magazine that the refuge needed volunteers to help plant trees. I accepted that invitation, and today my leg hurts from kicking myself for waiting so long. After getting that first behind-the-scenes look at nature and how 9,089-acre Montezuma Refuge is managed, I wish I had gotten involved much sooner.

That first day, a bright fall morning, I was one of about 15 volunteer planters. I enjoyed the work and the camaraderie so much that when refuge biologist Scott Stipetich mentioned the need for help with December raptor surveys, I jumped at the chance.

After getting that first behind-the-scenes look at nature and how the refuge is managed, I wish I had gotten involved much sooner.

Since then, I have helped with several bald eagles surveys. There are half a dozen active nests and several dozen bald eagles at and near the refuge. I have helped conduct marsh bird surveys and band American black ducks and wood ducks. I have planted trees native to upstate New York, both hardwoods



The author is one of 30 or so regular volunteers at Montezuma National Wildlife Refuge in upstate New York. Here, volunteers remove invasive European frogbit from a refuge marsh. (Phillip Bonn)

and softwoods. I have helped remove invasive plants, including European frogbit, lily pad-like vegetation that would overwhelm refuge marshes if left unchecked.

I even rode in an airboat once – and I have learned more about nature than I ever could have imagined.

I am not alone. I am a member of MARSH (Montezuma Alliance for the Restoration of Species & Habitats), a volunteer organization that supports efforts of the U.S. Fish and Wildlife Service, the New York Department of Environmental Conservation, Montezuma Audubon Center and others to restore, protect and enhance wildlife habitat on about 50,000 acres in the area. I am also a member of the Friends of the Montezuma Wetlands Complex, which supports the refuge.

What keeps me coming back is the friendliness of refuge staff members

and the appreciation they show to the 30 or so of us who regularly volunteer at Montezuma. They let us know that we have a tangible impact on improving the quality and diversity of habitats at the refuge.

Stipetich is great at explaining things and has a subtle sense of humor that puts you at ease. Linda Ziemba, another refuge biologist, exudes knowledgeable enthusiasm for conservation work and makes any task fun. In addition, they both regularly solicit feedback from volunteers on what worked and what didn't.

One thing is certain: I'll never again drive by on the Thruway dismissively wondering why anyone would want to spend time in weeds and reeds at a refuge. 🐾

Phillip Bonn is an electronics and information technology professional who lives in Dewitt, NY.

Volunteer Captures the Essence of Patoka River Refuge — *continued from page 1*

But his photography is what stands out.

His photos of fauna and flora at the corridor refuge 90 minutes southwest of Bloomington, IN, speak for themselves. Just go to <http://bit.ly/1BFNdD>.

One of his photos, of a bobcat, won the Division of Realty's annual photo contest. It will appear on the cover of the next "Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service." All of his photos are therapeutic.

Several years ago, the 43-year-old Gifford learned he has Parkinson's disease. Among the symptoms of that degenerative neurological disorder are soft speech, difficulty swallowing, tremors and muscle rigidity.

"The best way to fight the progression of these symptoms – besides a fine cocktail of drugs I take every 3½ hours – is to reduce multi-tasking and stress by allowing time for a single thing that relaxes me," Gifford says. "That's where photography comes into play. Getting out on the refuge gives my brain the downtime it needs to help maximize the physical abilities I have remaining. In a way, Parkinson's has been a blessing in disguise in that it has forced me to slow down and focus on things that really matter."

Gifford is humble. When first contacted by *Refuge Update*, he wondered why an article should be about him "when there are so many other talented volunteers with valuable contributions as well."

Bill McCoy, a 44-year Service veteran and Patoka River Refuge manager since its establishment in 1994, knows why: "Steve is probably the best advertising agency a refuge could ask for because he shows people what's out here."

Gifford is one of roughly 30 volunteers and 70 Friends. "The Friends group, as it's now organized, is the best thing that's happened to the refuge since we formed the refuge," McCoy says, "because they are believers in, and supporters of, what



"Having a close encounter with a bobcat was by far my most memorable event ever" at Patoka River National Wildlife Refuge, says volunteer Steve Gifford, who took a series of photos of this animal.

we are doing." What the refuge is doing is gradually acquiring riverine habitat. It encompasses 8,400 acres within a 22,472-acre acquisition boundary.

Gifford is awed by the wildlife the refuge attracts – migratory and nesting birds, waterfowl, river otters and more.

"Having a close encounter with a bobcat was by far my most memorable event ever at the refuge, and is one I'm not

sure I'll ever be able to repeat," he says. "Being able to experience an event like that is a testament to the decades of hard work of refuge staff and partners in preserving quality habitat for such amazing creatures."

A short video of that encounter is at <http://bit.ly/1uXr8uf> 

River Dredging Aids Endangered Butterfly, Plants



U.S. Army Corps of Engineers contractors move dredged sand pumped onto Antioch Dunes National Wildlife Refuge in California. The project is restoring riverine dune habitat that supports the federally endangered Lange's metalmark butterfly (above right), Contra Costa wallflower and Antioch Dunes evening primrose. (USFWS)

By Doug Cordell

Antioch Dunes National Wildlife Refuge, the Port of Stockton and the U.S. Army Corps of Engineers have discovered a win-win situation that benefits endangered species in California.

The banks of the San Joaquin River, in the northeastern reaches of the San Francisco Bay estuary, were once lined with sand dunes 12 stories high. But decades of sand mining and encroaching development from heavy industries have reduced the dunes to a few patches along the river, squeezing out much of the endemic wildlife.

Two of those patches are the neighboring units of Antioch Dunes Refuge – 55 riverfront acres, tucked between a shipyard and a gypsum plant. Established in 1980, the refuge was the first established to protect endangered plants and insects.

Without a natural influx of sand, however – something that hasn't happened since the adjacent dunes were lost to development – the refuge struggles to maintain the riverine dune habitat that supports the federally endangered Lange's metalmark butterfly, Contra Costa wallflower and Antioch Dunes evening primrose.

That's why an innovative arrangement last fall among the refuge, the Port of

Stockton and the Corps of Engineers was such a notable achievement. Under the agreement, sand dredged from the river to clear navigation channels for cargo ships was pumped to the refuge to restore dune habitat.

"This solved two big problems for us," says refuge manager Don Brubaker. "One, it gave us a large enough supply of sand to begin to restore the high-dune habitat that the endangered species on the refuge historically thrived on. And, two, it didn't cost us a penny."

Brubaker gives special credit to the San Francisco Bay Conservation and Development Commission for alerting the port about the refuge's need for sand. He points out that the port saved money, as well, because the dredged sand didn't have to be hauled farther away for disposal.

"Partnership and cooperation among agencies were the keys to making this thing happen," he says, "and everyone benefitted."

The sand was dredged from the river with a hydraulic suction, transported a short distance to the refuge and fed into a series of berms that separated out water. A total of 40,000 cubic yards of sand were brought in at no cost to the refuge. By comparison, in 2009 the refuge paid \$25,000 to bring in only 1,500 cubic yards.

In earlier efforts, the refuge faced the challenge of keeping the sand free of invasive weeds that, in recent years, have choked out not only the endangered plants but also the host plant for the endangered butterfly.

By bringing in such a large amount of sand in the most recent operation, the refuge will be able to build higher dunes, which drain better and allow for more naturally shifting terrain – two conditions for preventing the growth of invasive plants. A stacker will load the dried sand into a hopper so that it can be dropped to the ground from an elevated height, preferably on windy days, to blow out any detritus or other bio matter that might feed invasives.

"We're looking to mimic the habitat that we know has worked for the endangered species here in the past," says Brubaker.

He notes that the Corps of Engineers left the transport infrastructure in place so that more dredged sand can continue to be brought to the refuge again this year. He also hopes other local operators looking to dispose of sand will be able to use it: "This could really help the refuge." 

Doug Cordell is the public affairs officer for the San Francisco Bay National Wildlife Refuge Complex.

Around the Refuge System

South Carolina

Two of four surviving endangered red wolf pups born this spring at the Sewee Visitor and Environmental Education Center near Cape Romain National Wildlife Refuge were named after celebrities. One was named for Interior Secretary Sally Jewell, and a second was named for late-night TV comedian Stephen Colbert, a South Carolina native. The two named red wolf pups are scheduled to stay at the coastal refuge 30 miles north of Charleston. Two other pups were relocated to Alligator River Refuge in North Carolina to be fostered by parents in the wild. Six pups were born on April 8; one was stillborn and another died shortly after birth. As adults, red wolves weigh 45 to 80 pounds, stand about 26 inches at the shoulder, and are about four feet from tip of nose to end of tail.



Two endangered wolf pups born at the Sewee Visitor and Environmental Education Center adjacent to Cape Romain National Wildlife Refuge in South Carolina were named Colbert and Jewell. (USFWS)

Florida

Ownership of the St. Marks Lighthouse at St. Marks National Wildlife Refuge was formally transferred to the U.S. Fish and Wildlife Service from the U.S. Coast Guard this spring. Legislation mandating the transfer passed in 2006, but the transfer was delayed for eight years by soil contamination issues related to lead paint flakes and battery leakage. The lighthouse, built in 1831, is on the National Register of Historic Places.

California

San Joaquin River National Wildlife Refuge in the central part of the state had a surprise visitor this spring – a male California sea lion. The 50-pound sea lion pup was first spotted about 7:30 a.m. on March 31 a half-mile from the San Joaquin River. It was captured in an almond orchard bordering the refuge at about 11 a.m. During that time, the sea lion likely travelled through a river side channel and overland through refuge riparian forest. Sea lions are quite mobile on land compared with seals – a similar marine mammal with which they are often confused. The sea lion was far from its Pacific Ocean home but was not the first California sea lion to visit the area. In 2004, a 300-pound male sea lion swam farther up the San Joaquin River to near San Luis Refuge.

Two New Regional Refuge Chiefs Named

Kevin Foerster and Polly Wheeler have assumed positions as Refuge System regional chiefs. Foerster, most recently project leader at Upper Mississippi National Wildlife and Fish Refuge, is now the Pacific Region's refuge chief, stationed in Portland, OR. He replaces Robin West, who retired in January. Wheeler, most recently Alaska Region deputy chief, is the new Pacific Southwest Region's refuge chief, stationed

in Sacramento, CA. She replaces Marge Kolar, who retired in December 2013. With these two latest appointments, here is a complete list of Refuge System regional chiefs: Pacific Region – Kevin Foerster; Southwest Region – Aaron Archibeque; Midwest Region – Charlie Blair; Southeast Region – David Viker; Northeast Region – Scott Kahan; Mountain Prairie Region – Will Meeks; Alaska Region – Mitch Ellis; and Pacific Southwest Region – Polly Wheeler.

Wilson Receives Historic Preservation Award

John Wilson, who retired in December 2013 from his post as a U.S. Fish and Wildlife Service archaeologist, has received a 2013 Secretary of the Interior Historic Preservation Award. Wilson served as Northeast Region historic preservation officer from 1987, when he came to the Service from the U.S. Army Corps of Engineers, until his retirement. The Northeast Region includes 13 states and 72 national wildlife refuges, and Wilson was known to review 300 to 500 historic preservation compliance requests annually. Service headquarters archaeologist Eugene Marino credits Wilson with building important relationships internally and externally – among managers and wage-grade professionals within the Service and the National Wildlife Refuge System, and with tribes and state partners. Wilson also brought a practical approach to cultural resource compliance rather than a draconian approach, Marino says. "Before John," says Marino, "there was ambivalence to cultural resources, and after John there was more of an awareness of what the resource can do for you" as a refuge or field station.

Legends and Beacon Awards

The American Recreation Coalition has presented its 2014 Legends and Beacon award winners. Lorrie Beck, director of the Great Plains Nature Center in Wichita, KS, and an outdoor recreation planner at Quivira National Wildlife Refuge, was chosen as the U.S. Fish and Wildlife Service recipient of the Legends



For the first time since the 1700s, a pair of Hawaiian geese has nested and successfully hatched goslings on Hawaii's most populous island, Oahu – at James Campbell National Wildlife Refuge. (USFWS)

Award for contributions in the field of outdoor recreation. Beck was recognized for her 14 years as an outdoor recreation planner at the refuge and manager at the nature center. The National Conservation Training Center's Knowledge Resources and Technologies Division was chosen as the Service recipient of the Beacon Award, which recognizes innovative use of technology. The division was honored for integrating technology across NCTC's spectrum of programs and courses.

Hawaii

For the first time since at least the 1700s, a pair of Hawaiian geese has nested and successfully hatched goslings on the state's most populous island, Oahu. The pair and their goslings were first seen this spring at James Campbell National Wildlife Refuge on Oahu's north shore about 40 miles from downtown Honolulu. Hawaiian geese – also known as nene – are endangered but gradually recovering as a result of captive-breeding and management efforts by cooperating government and non-government agencies. In the early 1950s, there were about 30 known individuals; now there are an estimated 2,500 nene on Kauai, Maui, Molokai and the Big Island

of Hawaii. “We were hoping, as recovery progressed, that eventually there would be nene on all the main islands where they used to occur,” U.S. Fish and Wildlife Service biologist Annie Marshall said. The geese's arrival on Oahu is “a little sooner than we thought it would happen, but it's all part of recovery.”

Former Legislators Honored

Deep in the federal budget bill passed by Congress and signed by President Obama in January were two provisions that honor longtime supporters of conservation. One provision renames White River National Wildlife Refuge in Arkansas as Sen. Dale Bumpers White River National Wildlife Refuge. Bumpers was governor of Arkansas from 1971 to 1975 and represented the state in the U.S. Senate from 1975 to 1999. The second provision renames the visitor center at Nisqually National Wildlife Refuge in Washington as the Norm Dicks Visitor Center. As a member of the House of Representative from 1976 to 2012, Dicks helped obtain funding for conservation projects.

Virginia

A \$585,000 Federal Highway Administration grant will be used to provide better public access to Featherstone National Wildlife Refuge. Once construction is completed on 1,750 feet of boardwalk and trail improvements, the refuge will be accessible from Virginia Railway Express's Rippon Landing Station, which will enable increased visitation. The refuge is 325 acres of woodland and freshwater tidal marsh along the Potomac River 22 miles south of Washington, DC. Boardwalk and trail construction is scheduled to begin in November and be completed in 2015.

California

The San Diego County Board of Supervisors recognized San Diego National Wildlife Refuge Complex manager Andy Yuen with his own day this spring. In proclaiming May 20, 2014, as Andy Yuen Day in the county, the board honored Yuen for his service, leadership and commitment. “We know in San Diego County that we have the best of the best running the refuge,” said board supervisor Greg Cox. Earlier this year, the National Wildlife Refuge Association named Yuen the 2014 Paul Kroegel Refuge Manager of the Year.

The *Bertrand* Is Back — continued from page 5

Cantine favors the collection's nine rubber raincoats. They're severely dried out, but "still smell like rubber." And he's in awe of the 89(!) cases of bitters from Hostetter's distillery. Bitters – whiskey flavored with spices – were popular on the frontier for their supposed medicinal value.

Regular visitors to the exhibit include school groups, birders, photographers, bicyclists, hikers, casual history buffs

and, maybe 50 times a year, serious collectors who recognize the collection's national archaeological significance and want to examine rare artifacts.

"We are a resource collection," says Knudsen. "We encourage people to come out and learn, and in the process we learn from them, too." 🦋



Brandied cherries and peaches were among the cargo aboard the steamboat *Bertrand* when it sank in the Missouri River in 1865. (Bill O'Brian/USFWS)

Native Bees — continued from page 7

- Bees are the only pollinators that intentionally gather pollen; it's their primary food source. Other pollinators – moths, butterflies, beetles, flies, bats – get pollen on themselves "pretty much by accident in their search for nectar."
- There is evidence that certain pollinators have developed body shapes that fit into certain flowers or a tongue of a certain length/design to reach nectar in that flower. Similarly, evidence suggests that plant shapes, colors and pheromones evolve to attract and accept certain bee species.
- While two-thirds of the food humans eat is dependent on pollination, the plant monoculture of most agriculture is "the antithesis of what you would do for good pollinator habitat."

Still, despite his decade of pollinator observation, Watkins says, "there is way more about bees that we don't know than what we do know." 🦋

Habitat Restoration Stimulates Local Economies — continued from page 1

take place to provide national economic stimulus," said Service Director Dan Ashe. "At the same time, this restoration work provides benefits to all Americans by creating healthy natural areas, including shorelines, streams, wetlands and forests on privately owned lands."

Each year, the Service completes more than 3,500 public-private partnership habitat restoration projects under the two programs, which leverage government dollars to generate private sector investment that is channeled into local communities. This report examined how the Service's restoration spending cycles through the economy via jobs, contractor income, support services, indirect business taxes and labor force spending. It is the most comprehensive look to date at the economic impact of Service spending on habitat restoration.

The "restoration economy" is a subset of green jobs that includes such industries as heavy equipment providers and

operators, plant nurseries, landscape architects and construction companies.

The Service's Partners for Fish and Wildlife program works one-on-one with willing landowners to improve wildlife habitat. Landowners agree to maintain the improvement projects for at least 10 years, but otherwise retain full control of their land. In fiscal 2011:

- \$18.6 million was invested nationwide through the program, leveraging more than \$142 million in private sector contributions, totaling \$161 million in restoration spending.
- When cycled through the economy, the projects generated more than \$292 million for local economies, a return of \$15.70 for every federal dollar spent.
- More than 3,500 jobs were created from this program.

Thirty-nine percent of Americans live in coastal shoreline counties. The

Service's Coastal Program works with communities and partners to undertake projects that protect and restore vital wildlife habitat. Projects include removing invasive species, replanting salt marsh and sea grasses, and installing living shorelines to prevent erosion. In fiscal 2011:

- \$2.8 million was spent through the program on projects, leveraging that amount with more than \$16 million in spending from project partners, totaling \$19.2 million in project funds.
- After cycling through the economy, these project funds provided \$35.6 million in local economic stimulus, a return of \$12.78 for every federal dollar spent.
- More than 470 jobs were created from this program.

The report is available at <http://go.usa.gov/km2z> 🦋

Refuge Therapy Excites Arkansas Preschoolers

By Katherine Taylor

Amanda Wilkinson, a public use specialist at the Southern Arkansas Refuges Complex, is using a concept she calls Refuge Therapy to help 13 preschoolers with developmental delays flourish.

The program seeks to introduce the children to the sights, sounds and smells of nature while helping them to grow mentally and socially. All Refuge Therapy participants are pupils at the Carousel School in Crossett, AR. Part of the school's mission is to "strive to effectively transition developmentally delayed children into a regular kindergarten classroom setting with positive expectations."

Wilkinson conceived of Refuge Therapy last summer after the school took a field trip to the complex, which includes Felsenthal, Overflow and Pond Creek National Wildlife Refuges. During a tour of the visitor center, it became apparent that the children were apprehensive.

"Because of the kids' anxiety, it was clear that every child could use a hand to hold for the remainder of the trip," says Wilkinson. That day ended with a nature walk on which the children were encouraged to touch the bark of the trees, pick up leaves and gum balls, look over the pier at the pond, and smell the wildflowers in the butterfly garden. Some children did; most did not.

"The hurdles for them were getting off the paved trail, touching the dirt-covered objects, trusting the pier so they could take a glance, or trusting that the dragonflies that hovered over the garden were harmless," says Wilkinson. "At that point, I realized that many of these kids never had an outdoor experience like this. I felt compelled to offer more trips, to encourage the connection with nature and fill them with positive reinforcement when it comes to the natural world."

That field trip and a few others led Wilkinson to develop Refuge Therapy



Southern Arkansas Refuges Complex public use specialist Amanda Wilkinson is connecting children with nature via Refuge Therapy, a concept she devised. (USFWS)

into a year-round program. Monthly visits that bring refuge nature to the Carousel School classroom during the school year and summer field trips that bring the kids to refuge land are the backbone of the concept.

"They are stopping to hear the birds sing ... The word 'nature' is now a part of their vocabulary."

There is an "outdoor corner" in the classroom, which includes a large paper tree and a touch table that allows the children to engage with nature while they're indoors.

Refuge Therapy has given the children a new perspective.

"From the very first time until now, I've noticed the increased awareness the kids have gained for the world around them," says Wilkinson. "They are stopping to hear the birds sing, asking about various

plants and flowers they find, and are excited to talk about it all during my next visit. The word 'nature' is now a part of their vocabulary, and they are constantly connecting it to all things."

Perhaps the most noticeable development has been in one girl who at the start of Refuge Therapy was terrified to be outside. Now, she will hold a bucket full of live crickets, is excited to take nature walks and is eager to discover new things.

But it's not just the children who have been impacted by the concept.

"As a mother myself to two small children, I find it fascinating that their minds are like little sponges, soaking in everything around them," says Wilkinson. "For me it has been an awesome experience to not only introduce nature to these children but to be there during such an instrumental time in their lives." 🦋

Katherine Taylor is a digital content specialist in the Southeast Region office in Atlanta.



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A Look Back ... Hal Wiedemann

Hal Wiedemann was a consummate teacher and friend of Arthur R. Marshall Loxahatchee National Wildlife Refuge for 26 years. A self-taught expert on the refuge's butterflies, birds, plants and bugs, he amassed a personal collection of natural history reference books about south Florida and the Everglades. That eclectic collection has now become the Hal Wiedemann Library at the refuge, with more than 300 books and personal notebooks.

Wiedemann moved to Florida in 1982 after a career as an engineer in Detroit, applying the exacting thoroughness of that profession to his learning about the refuge. "He fell in love with everything he heard, saw and smelled," says Steve Horowitz, a Friends of the Arthur R. Marshall Loxahatchee National Wildlife Refuge board member. "He just spent every waking hour reading, studying, researching and writing descriptions for information sheets. He was a gentle soul, willing to help anybody with anything."

Park ranger Lewis Hecker, a former volunteer, recalls this response after

asking Wiedemann to teach him everything he knew about the refuge: "Okay, but you must meet me at 7 a.m. this Saturday at the Marsh Trail parking lot. If you are there any time after 7 a.m., then you can forget it." Hecker showed up at 6:45, Wiedemann at 7:04. "You're late," Hecker said. "I know," Wiedemann said. "We will get along great, and I will be your teacher."

Wiedemann spent an average of 30 hours a month leading night prowls, bird walks, butterfly strolls and cypress swamp boardwalk tours for some of the refuge's 300,000 annual visitors. "Nothing we've done since has been as popular as the night prowls Hal led," says refuge interpretive specialist Serena Rinker, adding that Wiedemann even noted the distinctive male-female blinking codes of fireflies.

One of the refuge's first volunteers and one of the longest-serving presidents



Volunteer Hal Wiedemann, second from left, shares his self-taught expertise on the butterflies, birds, plants and bugs of Arthur R. Marshall Loxahatchee National Wildlife Refuge in Florida. (USFWS)

of the Loxahatchee Natural History Association (precursor to the Friends), Wiedemann was named Friend of the Refuge in 1988, Friend of the Service in 1989 and the national Take Pride Volunteer of the Year in 1990. By the time he retired from the volunteer corps in 2008 at 85, he had accumulated 7,200 hours of service.

Wiedemann died in 2012, but his legacy lives on in the knowledge he shared. 

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