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National Wildlife Refuge System Chief Is Named

Geoffrey L. Haskett has been officially named Assistant Director, National Wildlife Refuge System. Just before becoming acting Chief of the Refuge System in June upon Bill Hartwig's retirement, Haskett served as Deputy Regional Director for the Southwest from 1997 to 2006.

He completed the Department of the Interior's Senior Executive Service Candidate Development Program in May 2006. Haskett began his Service career in 1979 in Portland, Oregon, and has also served as the Refuge System's Chief of Realty, among other posts.

RefugeUpdate

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Honors in the Planning Process



Lupine thrives at Rocky Flats National Wildlife Refuge in Colorado, which won the Outstanding Plan Award for its Comprehensive Conservation Plan. The annual awards recognize exceptional contributions to the Refuge System's planning program. (USFWS)

The 2006 refuge planning awards, presented annually by the Refuge System Division of Conservation Planning & Policy, recognize exceptional contributions to the Refuge System's planning program, just as the Refuge System invigorates its Comprehensive Conservation Planning process to meet Congress' 2012 completion deadline. The Refuge System developed its refuge planning awards and criteria in 2004.

Best Support of Refuge Planning

The entire staff of the Upper Mississippi River National Wildlife and Fish Refuge has won the Best Support of Refuge Planning Award for its success in developing a top-notch Comprehensive

Conservation Plan that went through 46 public meetings and workshops attended by 4,500 people. The Final Environmental Impact Statement totaled 800 pages, including more than 3,000 written comments, due to the large number of issues and the complexities of a refuge established in 1924 that runs through four states and two U.S. Corps of Engineers' districts. (See November-December Refuge Update for article by Refuge Manager Don Hultman about the CCP)

This award recognizes exceptional contributions by an individual or



H. Dale Hall

From the Director A Sense of Wonder

When I was a kid growing up in the hills of Harlan County, Kentucky, I felt

rich. I had the mountains, the beautiful Cumberland Plateau and the headwaters of the Cumberland River. If I wasn't up in the mountains chasing squirrels, I was down on the Cumberland River trying to fish and run trot lines. Today, you're more likely to see kids with iPods and cell phones hanging out in shopping malls instead of meeting at local fishing holes. That's why national wildlife refuges are more important than ever.

It troubles me that so many young people today choose to immerse themselves in a virtual reality of video games when they could explore the actual world of plants and animals. "In the space of a century," writes Richard Louv in *Last Child in the Woods*, "the American experience of nature has gone from direct utilitarianism to romantic

attachment to electronic detachment." I can only lament what that might mean for the future of conservation — until I think about our national wildlife refuges. It heartens me that the Service provides access to refuges so that children and families can spend time outdoors, nurturing what Rachel Carson called "a sense of wonder" about nature.

Refuges are taking another important step: Teaching the teachers. In this issue of *Refuge Update*, you can read about the Matagorda Island Teacher Workshop Cooperative Initiative, which has brought teachers to Aransas National Wildlife Refuge in Texas to give them a crash course in wildlife and wildlife habitat. Other refuges are doing much the same thing, bringing the lessons of nature and conservation right into the classroom, making nature not only relevant to everyday life but also to subjects such as math and English.

National wildlife refuges are beautiful and fascinating places. But just as

important, they are welcoming places where Friends, volunteers and staff are more than willing to share what they know. Anyone who has ever taken the "eagle prowl" at Blackwater National Wildlife Refuge in Maryland with Zeeger de Wilde can tell you how much you can learn from a volunteer. If you haven't met Zeeger, then turn to the story on page 8 to see what I mean.

In *Edge of the Sea*, Carson wrote, "Only as a child's awareness and reverence for the wholeness of life are developed can his humanity to his own kind reach its full development."

My own love of the outdoors has shaped my life and career, and I believe the Fish and Wildlife Service can play a role in teaching children about the wholeness of life. We are going beyond just fulfilling that obligation with the work we do on national wildlife refuges. ♦



Geoff Haskett

Chief's Corner To Honor All Firefighters

Fire is now well understood to be a major habitat management tool to sustain healthy

biological communities. Yet, several trends are making the use of fire and firefighting more complex. It will take the coordinated efforts of many to make sure the Refuge System's fire program is as good as it can be.

As the nation's population grows and city boundaries expand, the demands for firefighting in wildland-urban interface (WUI) areas are also growing. Just consider that 60 percent of all new homes

built in the last 10 years have been in WUI areas. Couple that with a trend toward warmer and drier conditions, shown by the fact that 2006 was the hottest year in the continental United States in the past 112 years. Several studies tell us to plan for more of the same.

As fire seasons have become more severe, suppression costs have gone up. In four of the past seven years, federal wildland fire suppression costs have risen above the \$1 billion mark.

So, where do we go from here?

First, the Refuge System has long had an aggressive fuels management

— continued on pg 28

RefugeUpdate

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Auklets on Farallon Islands Pose More Questions than Answers

The breeding population of tiny Cassin's auklets has dropped precipitously for two years in a row at Farallon National Wildlife Refuge in California. In 2004, the number of auklets was about 30,000. By 2005, the number had dropped by nearly half. The refuge is working hard to understand and reverse the current decline.

In fact, researchers with the Point Reyes Bird Observatory (PRBO) have been counting the auklets on the Farallon Islands, 27 miles west of San Francisco Bay, ever since 1971, soon after the islands became part of the San Francisco Bay National Wildlife Refuge Complex. At the time, there were about 100,000 birds.

Auklets breed on the Farallon Islands; each pair of birds digs a burrow, mates and lays an egg. The adults take turns incubating the egg and feeding the chick; they switch places under cover of darkness to avoid predator gulls. One adult is gone all day feeding on krill. In a good breeding year, a pair may bring off two clutches in a single season.

Russ Bradley, Farrallon project manager for PRBO, says the breeding failure of these birds in 2005 and 2006 is "totally unprecedented. We have never seen it in 35 years of observing these birds."

Where is all the Krill?

An absence of krill could be the source of the problem. These tiny shrimp-like crustaceans are at the very bottom of the food chain but they are a critical food source for auklets as well as rockfish, salmon and whales. Bradley blames the lack of krill on both a shift in currents and ocean upwelling as well as warmer temperatures. PRBO is working with oceanographers from NOAA and fisheries biologists to try to explain this phenomenon.

Farallon National Wildlife Refuge Manager Joelle Buffa says life on the islands is never static. Refuge Manager

Joelle Buffa at Farallon National Wildlife Refuge says life on the islands is never static. Totally apart from the recent breeding failure, Buffa is constantly reassessing habitat conditions so they can be managed most effectively for Cassin's auklets as well as other species on the islands.

For example, the refuge has been working to control New Zealand spinach, an invasive weed, for 15 years. It becomes so thick that the auklets aren't able to dig burrows. Every year, the weeds are hand-pulled just before breeding season. An herbicide is sprayed after breeding season. So far, the refuge has succeeded in keeping the weeds within a 25-acre area. Buffa says there are now plans to try to eradicate it completely.

"We are trying to restore the natural habitat as much as possible," says Buffa, "and we are also trying to free other habitat for the auklets on the Farallon Islands." One habitat restoration project involves breaking up the old concrete foundations of wartime buildings on the islands. This was completed by a group of artists called Meadow Sweet Dairy, who use their art to help wildlife. In this case, they used the concrete to build

habitat sculptures. Auklets will use crevices in the sculptures as burrows.

Northern Fur Seals Reappear

Another interesting development on the Farallon Islands is the reappearance of northern fur seals, which had virtually disappeared after they were slaughtered for their pelts in the 19th century. In the early 1970s, some male seals were seen on the islands. Females followed and a few pups were born in 1996.

A decade later in 2006, 97 pups – almost three times as many as in 2005 – were born. These seals establish their rookeries in the same type of habitat preferred by the auklets although they are not using the same areas right now. So far there is room for both auklets and seals, and Buffa is delighted the seals have returned. PRBO has long-term research underway to assess the potential impact of the rising seal population on Cassin's auklets and other species on the islands.

The auklets begin nesting in March and everyone will be watching and counting. "We're concerned about the auklets," says Buffa, "but the take-home message is that it will take everyone working cooperatively to find the answers." ♦



The population of tiny Cassin's auklets has dropped precipitously for two consecutive years at Farallon National Wildlife Refuge in California. Researchers suspect a drop in production of krill, the primary food source for the auklets. (Duncan Wright/Point Reyes Bird Observatory)

Hard-working Young People Contribute to the Refuge System



Little Pend Orielle National Wildlife Refuge in Washington hosted 110 Corps members over a 10-week period last summer. They thinned trees along the refuge boundary, built fencing, and helped open 2.5 miles of access road that had been overgrown for more than 15 years. (Lisa Langelier/USFWS)

The very first Civilian Conservation Corps members planted 3 billion trees from 1933 to 1942. More than half a century later, the young successors to the CCC are still planting trees, many of them are on national wildlife refuges.

Little Pend Orielle National Wildlife Refuge in Washington hosted 110 adults and teenagers over 10 weeks last summer. “They did excellent work,” says Dan Brauner, prescribed fire specialist at the refuge. He added with a laugh, “The kids also took pride in not taking showers.” The teens, 15-19, were assigned to the refuge one to two weeks at a time.

The work crews at Little Pend Orielle Refuge came from the Northwest Youth Corps, a member of the National Association of Service and Conservation Corps (NASCC). Nationally, NASCC is the umbrella for more than 100 Corps, which engage people, ages 16 to 25, in full-time community service, training and educational activities. More than half of NASCC’s work is focused on conservation, often on national wildlife refuges.

Since 2001, Brauner has arranged for the Northwest Youth Corps to send crews to Little Pend Orielle Refuge. The crews live in tents on the refuge.

Last summer, they thinned trees along the refuge boundary and helped open 2.5 miles of access road that had been overgrown for more than 15 years. The teens also built a trail that had been planned by the refuge Friends group. They cleared the roughed-out path of vegetation and spread gravel to make a fully accessible trail.

A Brand New Gulf Coast Recovery Corps

The Gulf Coast Recovery Corps is a brand new Corps created to help with hurricane recovery. Under the auspices of this new Corps office in Waveland, Mississippi, the Utah Conservation Corps sent a small crew to Big Branch Marsh National Wildlife Refuge in Louisiana for five weeks last fall. Crew members lived in a bunkhouse on the refuge and paid for their own food.

Refuge manager Ken Litzenberger says the crew always wanted more to do. They built a fishing pier, painted offices at Mandalay National Wildlife Refuge and cleared trails at both Big Branch Marsh Refuge and Bogue Chitto National Wildlife Refuge. They also became staff for National Wildlife Refuge Week at Big Branch Marsh Refuge.

Matt Ferris, special projects coordinator for NASCC, is eager for other refuges to take advantage of Corps in their area. “The Corps model has worked with public land agencies since the 1930s,” says Ferris. “We can help refuges cost effectively use the resources they have.”

More information, including lists of Corps by state, is available at www.nascc.com. ♦

Whole Lot of Buzzing Going On



Word of rare bee species discovered in the Carolinas lured wildlife biologist Sam Droege to the region, where in just two days last spring he found 56 bee species at Carolina Sandhills National Wildlife Refuge. Twenty of them had never before been recorded in South Carolina.

Droege, based at the U.S. Geological Survey in Patuxent, Maryland, isn't stopping there. He plans to return this spring to the 45,000-acre refuge – located in McBee, of all places – to launch a year-long survey of native bees. He expects to find at least 130 native bee species thriving among the long-leaf pine forests and native wiregrass – protected and enhanced by controlled burns and other management practices aimed at preserving the endangered red-cockaded woodpecker.

The Carolina bee effort is in part a precursor to a greater effort in which Droege intends to launch a nationwide bee survey.

Over time, the survey should help scientists determine whether bee populations are on the increase, decrease or holding steady. “We know of a few cases where bumblebee species have declined or disappeared,” Droege said. “But in most cases, we not only don't know how many bees there are, we don't even know what bees are where.”

Since bees are the world's greatest pollinators, fewer bees could mean fewer wildflowers, nut and fruit crops, and seeds for other agricultural plants. In short, without pollination, 60 percent of all plant species in the United States would disappear, he said. With mites and other introduced diseases and pests besieging honeybee hives across the country, understanding and encouraging the survival of other native bees takes on a greater urgency.

All We Know about Bees

As a first step, Droege and his partners

at the U.S. Geological Survey, U.S. Department of Agriculture and University of Georgia have been creating a bee-identification guide on the Polistes Foundation's Web site, www.discoverlife.org. The core of the site is a matrix that helps people identify species by answering a set of questions. Photographs of bees are being added, and information is listed on each known bee – about 800 on the East Coast and 4,000 nationwide.

Unlike the honeybee and bumblebee, which have a hive to protect, most native bees nest alone and therefore have little reason to attack; even if trapped, their stingers often are too small to penetrate the skin. “People notice them but don't think they're bees,” Droege said, explaining that the bees are about the size of a fly or smaller and range in color from brown to metallic green.

In attempting to survey bees, Droege has run into a few start-up challenges, notably the dearth of people trained in identifying bees. Droege is advertising training sessions and hopes eventually to have at least five people on the East Coast.

At the same time, he is preparing for an April or May return to Carolina Sandhills Refuge. He plans to recruit volunteers from the refuge's Friends group to help him create a bee-trapping program that could be replicated on other public lands. The volunteers will set out bowls in bee-attractive colors at various spots throughout the refuge. When the bees enter the bowls, they will land on soapy water and sink. The volunteers then will collect the bees in plastic bags for later identification.

Another bee team, the U.S. Department of Agriculture's Bee Biology and Systematics Laboratory is identifying and surveying bees at national parks in the west. The two groups of researchers share their findings. ♦



USGS wildlife biologist Sam Droege has identified 56 bee species at Carolina Sandhills National Wildlife Refuge in South Carolina, 20 of them never before recorded in the state. He plans to return this spring to complete a more thorough survey at the refuge before launching a nationwide bee survey. (USFWS)

Take a Walk! Hike a Trail! Ride a Bike!

“**G**et Fit Great Falls” – a campaign that encourages people to exercise by taking advantage of public lands and waters – has Benton Lake National Wildlife Refuge in Montana as a key partner. The campaign by the Cascade County Physical Fitness Council also includes the Forest Service, Montana Fish, Wildlife and Parks, Cascade County, the City of Great Falls and a diverse group of educational, recreation and health organizations.

The campaign’s first event was a three-mile guided birding hike on the refuge in June, 2006, in conjunction with National Trails Day. The morning dawned clear, cool and breezy for the 35 hikers, aged 8 to 80. The hike took the group through expansive native prairie and wetland complexes. The refuge’s diverse migratory bird populations cooperated and the participants were treated to close-up views of shorebirds, waterbirds and waterfowl. For many hikers, it was a first-ever visit to Benton Lake and most promised to return.

Multiple hikes were planned throughout the community so people with a variety of interests and abilities could participate. At least one hike was planned for people with disabilities. There are already plans for a spring mountain bike ride on the Refuge Auto Tour, canceled last fall because of an early snowstorm.

Get Up and Get Moving

Determined to uphold their New Year’s fitness resolutions, 80 people in January braved frigid temperatures and wind gusts over 35 miles per hour to charge out on a snowshoe hike through the Lewis and Clark National Forest. “It happened in fabulous glory!” said Diane Rae, volunteer coordinator at Benton Lake Refuge. “What I heard most after



Benton Lake National Wildlife Refuge in Montana is a key partner in the Cascade County Physical Fitness Council, which has created the “Get Fit Great Falls” campaign. Complete with its own Web site, the campaign includes opportunities for all types of hikes, including guided prairie walks in the summer and snowshoe hikes in the winter.

the hike was, ‘When are you going to do this again?’ It’s a great partnership with the Forest Service, the Fish and Wildlife Service, Showdown Montana Ski Resort, the Montana Wilderness Association and a local sports store.”

The Council on Aging donated vans and drivers to get people to the forest. The Council on Aging? “Absolutely,” says Rae. “We are taking the intimidation out of getting outside.” Healthy activity starts young and never gets old, says the campaign’s Web site (www.getfitgreatfalls.org).

Building up the Refuge

Rae sees many benefits to the refuge from the Get Fit Great Falls campaign:

- 🌿 Educating the public about the importance of migratory bird habitats.
- 🌿 Reconnecting children with nature. Benton Lake Refuge is the closest public land to Great Falls, the third largest community in Montana. “These children will be adults soon, and then many of them will be making land-use decisions. They really need to learn more about the value of wild places,” says Rae. One focus of the Council this spring will be to increase outdoor opportunities for disadvantaged children.

🌿 Better visibility and recognition in the community. Rae says there was a significant spike in interest in the Refuge System and wildlife habitat since the initial hike last June. “We’re only 10 miles north of town, but many residents had never been here or knew anything about the Refuge System.”

Rae says working with both public and private partners as well as the local media has been critical to the success of Get Fit Great Falls. Local media support guaranteed plenty of advance publicity, and organizers even had to create more hikes at the last minute to satisfy the demand.

An AmeriCorps volunteer has been assigned to the project for the past year; the volunteer happens to be a retired Forest Service employee who was able to coordinate the strategic planning for the fitness campaign. Cross-agency partnerships are strengthened by this campaign. ♦

Cooperative Conservation at Pearl Harbor National Wildlife Refuge

By Nancy Hoffman

Nearly a decade after the invasive weed sourbush threatened the very existence of the endangered Ewa Hinahina on the Naval Air Station Barbers Point in Hawaii, a community of concerned citizens has shown just what grassroots work can do. Today, nearly half of the 37-acre Kalaeloa Unit of Pearl Harbor National Wildlife Refuge on the island of Oahu is cleared of this weed and replenished with Ewa Hinahina, among other native Hawaiian flora.

The story begins in 1997, when an unusually wet winter enhanced the invasive's spread and threatened to



Nearly half of the 37-acre Kalaeloa of Pearl Harbor National Wildlife Refuge on the island of Oahu has been cleared of invasive weeds and replenished with native Hawaiian flora like this Ewa Hinahina, thanks to the efforts of the Naval Air Station Barber Point and volunteers organized by Leeward Community College. (Gerald D. Carr)

eliminate Ewa Hinahina from the southwest corner of the Naval Air Station Barbers Point (NASBP). The site was home to one of only three known populations of Ewa Hinahina on Oahu. The species is rare even in its native habitat and historic range.

Dan Moriarty of the NASBP Staff and Civil Office recruited nearly 60 faculty members, students and friends from Leeward Community College in February 1997 to spend a Saturday uprooting the invasive marsh fleabane. Once the invasive species was removed, more sunlight, moisture and nutrients were available to the native seed bed, which had been dormant for years. The area was slowly covered by such native plants as pa'u-o-Hi'iaka and 'ilima papa.

Shortly after the February trip, Moriarty passed away, but faculty members Frank Stanton and Bruce Koebele decided to continue the work he started. Restoration work was facilitated by the NASBP Base Commander for the next two years. Volunteers from Leeward Community College were bused from the NASBP gate to the restoration site.

By late 1999, the base was preparing to close and the Oahu National Wildlife Refuge Complex agreed to take possession of the site. The Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge was established just months later in January 2000, with the explicit mission to protect the Ewa Hinahina.

Once the land was transferred, concerns about public access became acute. Without fencing, the site would be quickly invaded by foot traffic and off-road vehicles, very likely destroying the native flora. Fortunately, Donna Stovall, then Oahu National Wildlife Refuge Complex manager, was able to persuade the Hawaii Department of Transportation to extend new fencing surrounding the

adjacent airport so it enclosed the Ewa Hinahina site.

Under the supervision of the Oahu National Wildlife Refuge Complex, Stanton and Koebele have continued to conduct six annual community college trips. Weeds are removed by hand and native Hawaiian plants, including the Ewa Hinahina, are out-planted on the site.

Over the years, the diversity of volunteers has grown into an impressive partnership. The original group – Leeward Community College – has been joined by multiple high schools, colleges and universities, scouting organizations, government agencies and nonprofit environmental organizations.

Even students from Nakamura/Gakuen College in Japan participate as exchange students at Leeward Community College. Over the past four years alone, students and other volunteers have contributed 7,230 hours to habitat restoration for Ewa Hinahina.

There is still much work to be done. We must continue to restore, monitor and maintain. The remaining acreage will be restored as funding is available. In addition to habitat restoration for Ewa Hinahina, we have projects to conserve native shrimp and a native damselfly. Our vision for this unit of the refuge is to restore a functioning Hawaiian ecosystem and open the area to the public with walking trails, environmental education classes and opportunities for tourists and local visitors to enjoy a true, native Hawaiian landscape. ♦

Nancy Hoffman is assistant refuge manager at Oahu National Wildlife Refuge Complex.

Volunteers We Have Known

“Whatever we’re doing, Zeeger is there,” says Maggie Briggs, visitor services manager at Chesapeake Marshlands National Wildlife Refuge Complex in Maryland. Zeeger de Wilde is a Dutch-born horticulturalist who has been volunteering at refuges on Chesapeake Bay for more than a quarter century. Briggs calculated that he’s up to about 6,000 hours of volunteer service, but he’s never kept a tally.

DeWilde came to North America in 1953, working first as a landscaper in Canada and then in Maryland. He initially came on board as a volunteer to help maintain a butterfly garden at Blackwater Refuge. Now he is perhaps best known as the guide who will guarantee to find eagles during Eagle Prowls in December and March. “It’s not hard to find them,” he says modestly. “Older people know what the eagle stands for; you have to teach the kids now.”

Sometimes birdwatchers on the Eagle Prowl get to see more than just a tiny white head in the distance. De Wilde remembers one prowl when male and female hooked talons in a mating ritual. Another time, a male eagle picked up a fish, carried it into the air and handed it to a female.

After thousands of volunteer hours, De Wilde still speaks enthusiastically about everything that happens on the refuge. “We have three kayak trails at Blackwater and we opened a photo blind at Eastern Neck...we did lots of marsh restoration, including close to 800,000 plus acres of grass on an island that is part of Blackwater Refuge.” He has staffed Friends exhibits at local festivals and zoos, supervised children in nature crafts and taken his turn at the information desk.

Remembering walks with his own parents when he was a child in Holland, de Wilde’s excitement at sharing his love of nature with the public is palpable. “Ever since I retired, I’ve been so busy,” he laughs. Last year, the 76-year old de Wilde put

20,000 miles on his car between his home in Seaford, Delaware, and Blackwater and Eastern Neck, the two refuges where he devotes most of his time.

De Wilde has three grandchildren and two great grandchildren; he recently drove his daughter home to Texas so he could go birding in Oklahoma with a group in which he would be the youngest birder!

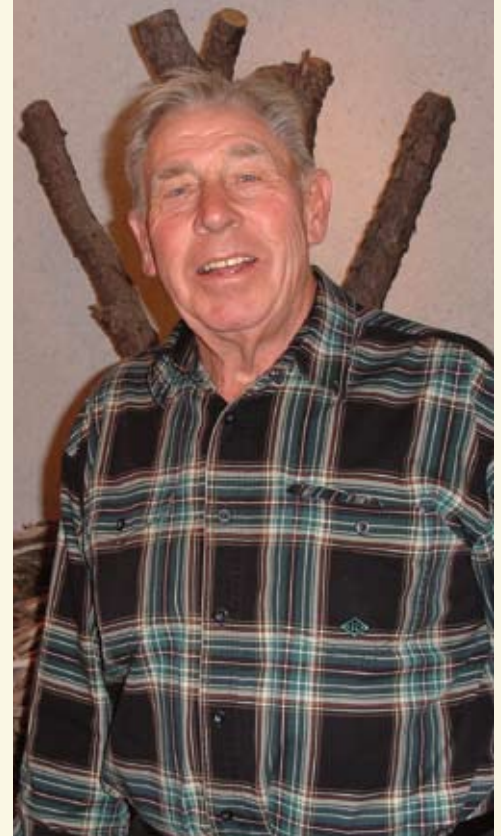
Conservation Heroes

Veteran refuge manager Mendel Stewart has seen his share of outstanding volunteers, people he calls “conservation heroes.” Now project leader of San Francisco Bay National Wildlife Refuge Complex, Stewart writes, “When I worked at the San Diego National Wildlife Refuge Complex, I learned that through citizen action the Tijuana Slough was essentially saved from becoming a large dredge-and-fill project for residential and commercial development.”

In the late 1960s and early 1970s, development plans were underway to convert over 1,000 acres of coastal marsh in the nation’s very southwest corner near the Mexican border into a “nautical community.” Mike McCoy and his wife Patricia were passionately opposed. Their opposition was not always appreciated; the McCoy’s were even shot at one evening after attending a community meeting. Eventually their work led to the creation in 1980 of Tijuana Slough National Wildlife Refuge and its subsequent designation as a Wetland of International Importance.

“I assumed citizen crusaders like these were few and far between,” Stewart writes, “but it was not long after I moved to the San Francisco Bay area that I learned about other seemingly incredible conservations feats.”

Don Edwards San Francisco Bay National Wildlife Refuge would probably not exist if it were not for a handful of individuals who petitioned for a new



Dutch-born horticulturalist Zeeger de Wilde has given nearly 6,000 hours of volunteer service to Blackwater and Eastern Neck National Wildlife Refuges. He is best known for his promise to find eagles during his biannual Eagle Prowl. (USFWS)

national wildlife refuge. Led by Phil and Florence LaRiviera, they were successful when Congress established the first “urban” refuge in the National Wildlife Refuge System in 1974. Ralph Nobles led the effort to prevent commercial and residential construction on Bair Island within the Don Edwards Refuge.

Stewart says “I may not have had the chance to meet Aldo Leopold or John Muir, but I feel extremely fortunate and proud to know Ralph Nobles, the LaRivieras and the McCoy’s – this generation’s conservation heroes.” ♦

Mendel Stewart, project leader of San Francisco Bay National Wildlife Refuge Complex, contributed to this article.

STOKED and Other Education Strokes

Outreach that Stands Out

A theatre built like a sod house, high school students “STOKED” to teach younger children, computers helping youngsters track butterflies, second graders using a refuge as a living field lab – these are all ways refuges are getting the message to young people in an age of high technology, short attention spans and dwindling enthusiasm for nature.

A Mix of 19th and 21st Century Technology

The Prairie Wetlands Learning Center at the Fergus Falls Wetland Management District in Minnesota boasts a theatre that resembles the kind of sod house built by nineteenth century immigrants. There is grass growing on the roof (molded and reproduced from real grass) with plans to glue about 300 ants to the wall and hang a snake from the ceiling.

In addition to these bits of historic realism, there is also a very high-tech 55-inch plasma screen with surround sound and a computer program that shows four short but powerful new videos, all possible because of grants to the Center’s Friends group.

The videos and the sod house are a conscious effort to focus on the land, says Ken Garrahan, supervisory park ranger. “People coming to the prairie see this big expanse of grass and they don’t get it sometimes. There’s no big river or canyon, no moose or elk. So we chose to focus on the small things - the beauty of the grasses, wetlands, waterfowl.” The goal of all the high and low technology, he adds, is to encourage people to get out and explore on their own.

Migration Stewardship at Aransas National Wildlife Refuge Complex

At Aransas National Wildlife Refuge Complex, environmental education specialist Tonya Stinson is constantly amazed at how many area school children have never been to the nearby beaches or wildlife refuges. Schools in three rural counties are invited to bring

students to a migration stewardship outreach program.

In the fall, youngsters tag Monarch butterflies by putting a sticker on the underside wing. They check an online chart to learn where “their” butterfly landed. In the spring, they return to the refuge for International Migratory Bird Day, playing games like Migration Headache. With a few obstacles strategically placed, students learn that collisions are one of the biggest “headaches” confronting migrating birds. Hula-hoops on the ground represent the number of birds that survive to the next step in the migration process.

National Elk Refuge Becomes a Living Field Lab

National Elk Refuge in Nevada also brings children to the refuge for

multiple visits during a single school year. The refuge has teamed with the Jackson Hole Wildlife Film Festival, Geologists of Jackson Hole, pARTners, (a local nonprofit organization that helps educators use the arts across the curriculum) as well as the National Museum of Wildlife Art and Beringia South (a local group dedicated to improving management of natural resources through innovative research).

Teton County second graders visit the refuge four times to survey wildlife and record their observations with sketches, journal entries and photos. The winter visit includes a horse-drawn sleigh ride to give the children close-up views of elk and a trip to the feed shed for an “insider’s view” of the refuge role in supplementing winter feeding.

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Children dress in period costumes while visiting the Prairie Wetlands Learning Center at the Fergus Falls Wetland Management District in Minnesota, which boasts a theatre that resembles a 19th century sod house. (USFWS)

FOCUS... *On Engaging the Next*

Finding and Developing the Best and the Brightest

“Robust budgets, political support, public trust and supportive legislation are necessary,” notes the Refuge System’s vision document, *Fulfilling the Promise*, “but without visionary leadership they will not result in accomplishing the mission.” The history of the Refuge System is replete with the accomplishments of heroes like Paul Kroegel, Ding Darling, Ira Gabrielson and J. Clark Sayler. This issue of Refuge Update looks at how tomorrow’s heroes are being developed today.

The series of stories explores some of the many steps the Refuge System takes to nurture a professional interest in conservation. Before any thought can be given to developing leaders, the best and the brightest must be made aware that national wildlife refuges are both career opportunities and vital paths to conserving America’s natural heritage.

Teachers who take professional development courses and workshops on refuges become knowledgeable champions of the Refuge System. Internships are paths to lifetime careers.

“We will equip an entire generation to meet the challenges of public service.”

Growing Leaders from Within



Leadership is the catalyst that turns resources into accomplishments, in the words of Fulfilling the Promise. One key leadership catalyst is the Advanced Leadership Development Program, a vital component of the Service’s overall leadership succession planning. (USFWS)

Leadership is the catalyst that turns resources into accomplishments, in the words of *Fulfilling the Promise*. The U.S. Fish and Wildlife Service offers a variety of opportunities to “grow leaders” through employee development. The Advanced Leadership Development

Program (ALDP) is a vital component of the Service’s overall leadership succession planning.

The 11-month training program, which targets GS-13 and GS-14 employees, focuses on self, team and organization. Participants are required to fulfill a 30-day job swap and a 60-day developmental assignment to explore leadership in different Service environments. The program is designed to keep participants fully aware of how others view them as leaders.

The sixth ALDP class is now underway. Chief of Refuge Law Enforcement Mark Chase, who participated in ALDP training as a member of Cohort III, is serving as a coach for Cohort VI. The coach, along with a supervisor and the entire cohort, support each participant’s efforts to learn, change behaviors, increase knowledge and expand awareness.

Learning about Self to Lead Others
Chase believes the ALDP training provides an outstanding opportunity for employees to learn about themselves.

People who were introduced to national wildlife refuges through the Youth Conservation Corps are now full-time employees who generate ideas and programs. The Advanced Leadership Development Program has given employees a chance to be groomed as leaders.

“It is your obligation to move forward in a way that does not denigrate, dilute or diminish in the slightest degree that which came before you,” said former U.S. Fish and Wildlife Service Director Lynn Greenwalt, “because many thousands of men and women gave their careers, and some even gave their lives, for what you are working toward – saving dirt.” ♦



“Look forward. Turn what has been done into a better path. If you’re a leader, think about the impact of your decisions on seven generations in the future.”
Chief Wilma Mankiller.

“Participants get insights into why we behave in the ways we do and what effect those behaviors have on those around us,” Chase explains. “Armed with this knowledge, employees are empowered to choose behaviors and actions that foster relationships, increase efficiencies and make us all better stewards of the Service’s conservation in the context of public service.”

The program involves sacrifice. Participants are gone from home and duty stations for four months out of 11. Families, staffs and co-workers are forced to adjust. “With this cost, along with the financial investment of public funds, there is a great deal of responsibility placed on the participants,” Chase observes. “Others have been greatly inconvenienced for the participant’s developmental opportunity. The participant has the personal responsibility to ensure that these sacrifices are not made in vain.”

The lessons learned apply to all areas of life and every relationship. Chase says it is his hope that the training has made him a “better Service employee, supervisor and public servant. It is also

my hope that I am a better husband, dad, son, friend and so on.”

The Human Element

Doug Vandegraff, chief cartographer for the Refuge System, agreed that the ALDP program goes far beyond on-the-job training. A 20-year veteran of the Service, Vandegraff completed ALDP in 2006.

“Whenever several of us grads get together, we often swap stories about our experiences with a portion of the program called The Human Element. “It’s all about learning how other people perceive you,” recalls Vandegraff. “Once you gain this insight, you have a much better idea about how your actions as a leader are interpreted by others.”

Vandegraff said he quickly discovered the instructor has “a talent -- a gift maybe-- of being able to see past a persona into the real person. After one man introduced himself and gave some very typical data – where he was from, why he was glad to be here – she focused on something minute he had said, and replied, ‘Why did you say it that way?’ His response sounded truthful, but the instructor was not satisfied.

“She posed another question, venturing into more personal territory. He answered with a little hesitation, but again with sincerity. Her final question must have hit home because the man seemed to be on the verge of tears. I remember thinking, ‘I hope she doesn’t pick me.’ But, in fact, no one is left out.”

The Human Element is important, continues Vandegraff, because it forces leaders to confront themselves. “The exercises help us focus on and capitalize on our strengths. They also help us be aware of our weaknesses. This can be quite enlightening to strong and experienced leaders, as well as to the somewhat reluctant leader.”

Chase decided to serve as an ALDP coach because he believes so strongly in the program. “I truly believe if participants are honest with themselves, they will emerge a better person at the end of the year. Eventually, we will equip an entire next generation to be better prepared to meet the challenges of public service.” ♦

FOCUS... *On Engaging the Next*

The Student Career Experience Program

Bruce Butler graduated from Florida A & M University in 2005 with a degree in criminal justice. During a 2004 internship on Capitol Hill, the Student Career Experience Program (SCEP) became his gateway to the U.S. Fish and Wildlife Service, where he is now a game warden in the Southeast Region Office of Law Enforcement.

Now, says Butler, "I absolutely love it. I learn something new everyday. I work at the most beautiful places in the country and I'm having a blast."

SCEP provides federal government employment to degree-seeking students taking at least a half-time academic, technical or vocational course load in an accredited high school, technical or vocational school, two- or four-year college or university, graduate or professional school. The program

provides work experience that is directly related to the student's academic program and career goals. SCEP students can get term, career or career-conditional appointments after they've completed academic and work experience requirements.

For managers, SCEP can be a good tool to "grow your own" workforce and address future agency needs. Hiring under SCEP is an effective way for a refuge manager to:

- bring students into the Service in targeted positions for workforce and succession planning,
- evaluate a student's performance in real work situations, and
- permanently place successful students after they have completed

Youth Conservation Corps: A Launch Pad

Sarah Dawsey was 15 years old when she had her first Youth Conservation Corps summer job at Cape Romain National Wildlife Refuge in South Carolina. She did office work and turtle work, but it was the turtle work that hooked her. "I knew it's what I wanted to do with my life," said Dawsey.

She came back to Cape Romain Refuge for three more summers before going to college. And then, she really came back.

After graduating from Charleston Southern University with a major in biology, Dawsey initially could only get temporary employment at the refuge, but her talents and work ethic were well known when a permanent position opened in 1997. Twenty years after that first YCC summer, today she is a wildlife biologist at Cape Romain Refuge.



Sarah Dawsey first worked with loggerhead sea turtles at Cape Romain National Wildlife Refuge in South Carolina as a Youth Conservation Corps crew member in 1986. She has been working at the refuge ever since and is now the refuge wildlife biologist. (USFWS)

Still fascinated by loggerhead sea turtles, Dawsey notes, "They are mysterious animals." For six months

Promoting Conservation and Diversity

coursework leading to a diploma, certificate or degree and at least 640 hours of work experience.

Butler's SCEP experience included tasks in a regional administrative office, such as working on the uniform crime report, as well as work in various field stations where he saw law enforcement up close. He easily moved into his current position on the Manatee Zone Enforcement Squad, monitoring speed boats in Florida waters where manatees live.

Building Awareness

In addition to exposing students to the idea of a public service career, SCEP may also provide an opportunity to promote diversity and equal opportunity. Evan Hirsche, president of the National Wildlife Refuge Association, wrote in the fall 2006 issue of *Wildlife Refuge*

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The Student Career Experience Program (SCEP) encourages young people to consider careers in biology, fishery and wildlife biology and conservation. Bruce Butler was a 2005 SCEP student who is now a law enforcement officer in the Southeast. (USFWS)

each year, she directs a labor-intensive program to protect sea turtle nests, bringing to the refuge about 50 volunteers who donate more than 3,600 hours of service.

Working Outdoors Since 1970

The Youth Conservation Corps, started in 1970 by the U.S. Departments of Interior and Agriculture, is a summer employment program for people ages 15-18. Administered by the Forest Service, U.S. Fish and Wildlife Service and the National Park Service, YCC provides minimum wage jobs to teens to do conservation work on public lands. During summer 2005, 503 YCC enrollees worked on national wildlife refuges.

At Silvio O. Conte National Wildlife Refuge in Massachusetts, a YCC crew built a new observation platform and fixed erosion problems on a popular trail. A crew in the Great Lakes Region rescued a white-tailed deer fawn that had fallen into a hole the

group was filling. In 2006, Arctic National Wildlife Refuge in Alaska hosted its first native village YCC crew. The refuge and the local tribal council jointly funded local YCC members, who restored a trail leading to a science camp on the refuge.

Manager Elaine Johnson at Deer Flat National Wildlife Refuge in Idaho, which recruits a five-member crew every summer to care for wildlife habitat, said she was impressed by the level of "crew cooperation in getting the job done, no matter the task."

From YCC crew to fire dispatcher

Leticia Handy began her career with the Service as a YCC crew member on Santa Ana National Wildlife Refuge in Texas. Her high school biology teacher suggested YCC as a summer job back in the 1970s. She remembers cleaning a trail to make it accessible to visitors with disabilities and she is pleased that part of that trail still exists.

Handy came to work full-time for the refuge in 1997 and is now a fire dispatcher. She remembers the first time she dispatched a helicopter while she was managing communications on two radios and a telephone. "My part is minute but what I do makes a difference. Firefighters' lives are on the line and my knowledge helps keep them safe."

A 2005 accomplishment report from the Great Lakes Region said several students had expressed interest in pursuing careers in the Service or conservation. In short, the YCC had enabled the region to create "54 new ambassadors for the Fish and Wildlife Service. ♦"

FOCUS... *On Engaging the Next*

Scholars on the Refuge

Young scholars come to national wildlife refuges to conduct research that contributes both to graduate and undergraduate degrees and refuge habitat management techniques. The scholars come from a range of backgrounds and are supported by an array of scholarships that introduce them to national wildlife refuges.

In honor of the 2003 Refuge System Centennial, The Walt Disney Company, U.S. Fish and Wildlife Service and the National Fish and Wildlife Foundation created the Centennial Scholarship Program to support students whose research contributes to improved management and understanding of refuge resources. Disney scholars Angie Battazzo and David Jachowski worked at Charles M. Russell National Wildlife Refuge in Montana.

Kassandra Cerveney, a student at the University of Puerto Rico, received a Governor Tause P.F. Sunia Memorial Coral Reef Conservation Summer Internship Award. The late Governor Sunia of the Territory of American Samoa was an eloquent and passionate advocate for coral reef protection and management. In his honor, two students are selected each year from Guam, the Commonwealth of the Northern Mariana Islands, Hawaii, American Samoa, Puerto Rico or the U.S. Virgin Islands to receive a three-month summer internship to develop professional coral reef management skills.

For additional information on 2007 National Wildlife Refuge System Centennial Scholarship Program, contact Kevin Kilcullen at Kevin_Kilcullen@fws.gov or 703-358-2029. Applications are due by April 13, 2007. For additional information on the 2007 Sunia Scholarships, contact Beth Dieveney at beth.dieveney@noaa.gov or 301-713-3155 x129 or visit www.coralreef.gov. Applications are due February 16, 2007.



Disney scholar Angie Battazzo, a student in wildlife biology and management at the University of Montana, researched female sage-grouse winter ecology and habitat use at Charles M. Russell National Wildlife Refuge. (Erick Green/USFWS)

Studying the Sage Grouse at Charles M. Russell National Wildlife Refuge

By Disney Scholar Angie Battazzo

As a master's degree student in wildlife biology and management at the University of Montana in Missoula, I have focused my research on population demography – how weather and habitat affect population dynamics. My research specifically targets female sage grouse winter ecology and habitat use on Charles M. Russell National Wildlife Refuge. I am taking a hard look at long-time assumptions about age-specific winter survival rates and the weather and habitat factors that affect those rates.

I pursued the Disney scholarship to support testing an additional hypothesis

“I was privileged to work alongside federal and state natural resource managers, academicians and private landowners.”

about winter habitat selection patterns, provide assistance with graduate school book costs and fees, and subsidize travel expenses to the 13th Annual Wildlife Society Meeting in Anchorage, where I presented my research findings.

My work completes a long-term study of female sage-grouse survival and production on the refuge. I will be providing Charles M. Russell Refuge with information about specific sage grouse winter habitat areas on and off the refuge as well as specific habitat characteristics that the local flocks seem to be selecting during mild winter months.

During my research, I was privileged to work alongside federal and state natural resource managers, academicians and private landowners. I learned how important it is to make the information accessible to many audiences, and to integrate applied science and management with the economic and social values of the communities in which I work.

More Than Wildlife Alone

My graduate experience has taught me that wildlife conservation is more than just understanding how populations of animals change, but also how the surrounding human communities value, utilize and protect resources. I enjoyed building working relationships with local landowners as much as I enjoyed learning about wildlife ecology.

I have tailored my education to include courses in federal public land and resource law, as well as economics, statistics and population dynamics. This kind of integrated education prepares me for the multi-faceted approach that natural resource professionals need to address issues regarding public land and resource conservation.

I expect to present my findings to staff at the Charles M. Russell Refuge in the early spring and receive my degree in May 2007. I am at a crossroads in my professional journey, seeking employment that will allow me to work at the interface of science and policy,

even as I contemplate a PhD in natural resource economics or policy.

Black-footed Ferrets: Fascinating since Childhood

By Disney Scholar David Jachowski

As a child in the 1980s, I spent summers on a cattle ranch near Cody, Wyoming, with my uncle. Just a few miles away at Meeteetse, black-footed ferrets had been rediscovered. Hearing about this improbable and important rediscovery and growing up in a family of biologists fed my curiosity about this animal.

Now, as a biologist, I am attracted to ferrets for the conservation challenge they present. The black-footed ferret is among the most rare of mammal species. We need to make ferret recovery succeed here in the richest country in the world if we are to be justified in talking to Indonesians about tiger conservation or Peruvians about saving the giant river otter.

As a 1999 college graduate, I worked as a technician at Charles M. Russell National Wildlife Refuge in Montana,



Disney Centennial Refuge Scholar David Jachowski worked on recovery of the black-footed ferret at Charles M. Russell National Wildlife Refuge in Montana.

one of the original recovery sites for black-footed ferrets. Reintroductions began at CMR in 1994. Since then, over 200 captive-born kits have been released and at least 200 kits have been born in the wild. Despite this influx, the CMR ferret population has not grown to more than about 20 individuals, a situation that I am studying as I work for the U.S. Fish and Wildlife Service National Black-footed Ferret Recovery Program. CMR continues to rely on the release of captive-born animals.

Greater hope for the restoration of ferrets comes from a site in the Conata Basin of southwestern South Dakota. Ferret reintroductions began there in 1995 but were halted in 2000 when ferrets became self-sustaining at a population around 200 individuals.

In 2004, I began working for the Black-footed Ferret Recovery Program, based in Colorado, while I pursued a master's degree at the University of Missouri. I am investigating why ferret recovery has generally failed at CMR while it has succeeded at the South Dakota site. It is generally known that ferret recovery is hindered by the scarcity of large-scale prairie dog colonies, yet the specific habitat requirements of ferrets are poorly understood.

With support from the Disney Centennial Refuge Scholarship Program in 2006, I am testing the hypothesis that prairie dogs exist in distinct high-density patches within colonies and that ferrets select and compete for these patches. Findings to date suggest that changes are needed in current techniques that assess ferret habitat by estimating total acreage and average density of burrows in prairie dog colonies. Methods that more accurately reflect habitat values might enable us to make better choices in selecting and managing sites for ferret recovery.

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FOCUS... *On Engaging the Next*

Summer Interns Come with Energy and Enthusiasm

Opportunities for internships on units of the National Wildlife Refuge System occur throughout the country. Interns may find jobs on their own or through partnerships with colleges, universities and private organizations. They may assist with ongoing surveys or mapping projects, and they sometimes come with ideas of their own and the energy to implement them.

Environmental Careers Organization (ECO) is one national, nonprofit organization that develops professionals through paid internships. Erin Loury, an ECO intern, says she spent 12 weeks as an interpretive intern at Parker River National Wildlife Refuge in northern Massachusetts, where she made a “detailed and interactive study of a most intriguing species - the summer refuge visitor.” She enjoyed knowing that she “had an impact, however small, on shaping the way hundreds of visitors view the conservation of their local natural treasures.”

Susi Ponce was an ECO intern at Patuxent Research Refuge in Maryland and then became a biological science

SCEP (Student Career Experience Program) trainee at Great Swamp National Wildlife Refuge in New Jersey (see more on SCEP on page 12). Ponce expects to become a full-time wildlife biologist for the Service.

Ponce advises interns to “take the lead role in projects you are assigned.” ECO intern Sara Ford came to Montezuma National Wildlife Refuge in New York prepared to do just that.

Finding Common Ground for City Dweller and Nature Lover

By Sara Ford

My first working day in New York was blistering hot and Andrea Stewart, my supervisor at Montezuma National Wildlife Refuge, saw to it that it would not be my first day of real work. We grabbed a pair of binoculars and headed out to the wildlife drive, and for the first time in my life, I saw a bald eagle.

I had no experience with wildlife and I was not a very good scientist. In fact,

“We grabbed a pair of binoculars and headed out to the wildlife drive, and for the first time in my life, I saw a bald eagle.”



Governor Sunia Coral Scholars *Kassandra Cerveny* and *Tiffany Robinson* meet with *Susan White*, former deputy refuge manager at *Ding Darling National Wildlife Refuge* in Florida. *Cerveny* contributed to a management plan for *Navassa Island National Wildlife Refuge* in Puerto Rico. (USFWS)

Scholars on the Refuge — *continued from pg 15*

Coral Reef Conservation at Navassa Island Refuge

*By Governor Sunia Coral Scholar
Kassandra Cerveny*

Summer 2005 was an interesting jaunt into the world of federal level marine science and policy for me as the Governor Tauese P.F. Sunia Memorial Coral Reef Conservation Summer Scholar. The scholarship was the chance of a lifetime to step out of the academic roles of science and policy and learn how it is all practically applied.

The experiential learning process was hugely beneficial. Throughout my years at the University of Puerto Rico, I have known the importance of pairing science with policy. I have earned a bachelor’s degree in environmental science paired with a minor in natural resource policy and ethics as well as a master’s in marine science with a graduate certificate in environmental policy and management. That’s when I discovered the U.S. Coral Reef Task Force summer scholarship program.

Montezuma Refuge seemed to be the only opportunity on the Environmental Careers' Web site that didn't outwardly require scientific knowledge - simply a good attitude.

Bringing the City to the Refuge

The refuge staff made it a personal priority to create a friendly and welcoming environment for me to learn, grow and discover. The more I began to understand nature and the importance of wetlands, the more I wanted to expose other city dwellers to my discoveries. When Andrea asked me to put together a public program, my main goal was to find a way to unite people who already appreciated nature and city dwellers who cherished the arts.

Over the next few weeks, I called every dance company within 30 miles, hoping just one would be interested in collaborating on a project to connect the urban experience with nature through modern dance. After several telemarketer-like phone calls, Sean McLeod and The Kaleidoscope Dance Theatre agreed to help.

The planning leading up to the event was intense. As I watched one rehearsal, I saw one musician playing an Indian-inspired number on an acoustic guitar and the dancers dissolve in very slow



Sara Ford was an intern at Montezuma National Wildlife Refuge in New York, where she produced a public dance program to "unite people who already appreciated nature and city dwellers who cherished the arts." (Benjamin Chapman)

walking and arabesques. I thought, "This is exactly what I wanted."

The dancers were set against a true backdrop of the great outdoors, surrounded by trees with a blanket of grass under their bare feet. As the first movement began, one of the dancers slipped upon nature's unpredictability. The first umbrella popped open and soon enough, everyone in the audience opened one.

The rain poured, but no one left. ♦

Sara Ford is a sophomore at the University of St. Thomas in Minnesota, where she is planning to major in art history or theatre/dance.

I was tasked with drafting a white paper on the history, threats and management plan for Navassa Island National Wildlife Refuge. Navassa Island Refuge is currently going through a process of collaborative conservation strategy process with other stakeholder agencies and organizations. Working with knowledgeable federal employees as well as researching the National Archives is an experience that university students rarely have, especially students in the island states and territories. These everyday interactions have helped solidify my desires to pursue federal level environmental policy work.

Beyond working on my Navassa project, I was included in briefings for agency heads and members of Congress, attended Congressional subcommittee hearings and cooperative management meetings and worked with nongovernmental organizations. I spent a week in the field at J.N. "Ding Darling" National Wildlife Refuge in Florida and shadowed then Chief of Refuges Bill Hartwig.

Never "Just" an Intern

For the first time I was able to put to use my combined science and policy background. It turned all my theoretical plans and hopes into a very real, concrete

skill set on which I can build a career. The Sunia scholarship program not only enables students to work on very real projects but it also provides positive role models and such fantastic mentors as Andrew Gude, NWRS Marine Program Coordinator, all while letting the student feel like part of the team, not "just" an intern.

This was a phenomenal opportunity to work on marine issues in the National Wildlife Refuge System. The scholarship has made me realize that there are so many opportunities within federal agencies to work in the conservation world. ♦

FOCUS... *On Engaging the Next*

Start by Teaching the Teachers

A biology teacher suggests that a student try working for the Youth Conservation Corps in the summer. An elementary school teacher brings children to a refuge to write poetry. Another conveys math concepts by asking students to calculate how many acres need to be planted to feed migratory birds on a specific refuge.

Engaging the next generation means not only encouraging young people to think of conservation careers but also educating them to become knowledgeable citizens enthusiastic about conservation. That often starts with teachers.

Many refuges offer a variety of professional development programs for teachers. They are often created by private nonprofit organizations. Many of these programs are being correlated to new public school curriculum standards.

A Project Wild course created by the nonprofit Council for Environmental Education, for example, is regularly offered at Patuxent National Wildlife Research Refuge in Maryland. Teachers leave the workshop with an interdisciplinary curriculum guide covering science, math, social studies,

physical education, music, art and environmental education.

Erika Scarborough, education specialist at John Heinz at Tinicum National Wildlife Refuge in Philadelphia, concluded that training teachers would give them ownership over their field trips. Scarborough offers “pre-field trip orientations” one Saturday a month so that teachers can return with their students and lead their own activities.

Heinz Refuge also offers a wide variety of other courses and workshops for teachers of all grade levels throughout the school year, covering everything from wetlands, biodiversity, energy, trees and songbirds. A nominal fee is charged and participants earn continuing education credits.

The workshops build confidence and knowledge among teachers, who are often as unfamiliar with green spaces as their students. Scarborough remembers one teacher involved in a hands-on activity who said she had “never seen a real live frog.” One student who came to the refuge said it was the “first time she ever planted something that wasn’t in a paper cup.”



One of Becky Halbe's many projects was her work on the America the Beautiful National Parks and Federal Recreational Lands Pass. It replaces the Golden Eagle, Golden Age and Golden Access Passports as well as the National Parks Pass and went on sale in January 2007. The new pass covers public lands managed by the U.S. Fish and Wildlife Service, Bureau of Land Management, National Park Service, Bureau of Reclamation and the Forest Service. The annual pass costs \$80 and is available at federal recreation sites, online and from select third-party vendors. More information is available at www.recreation.gov.

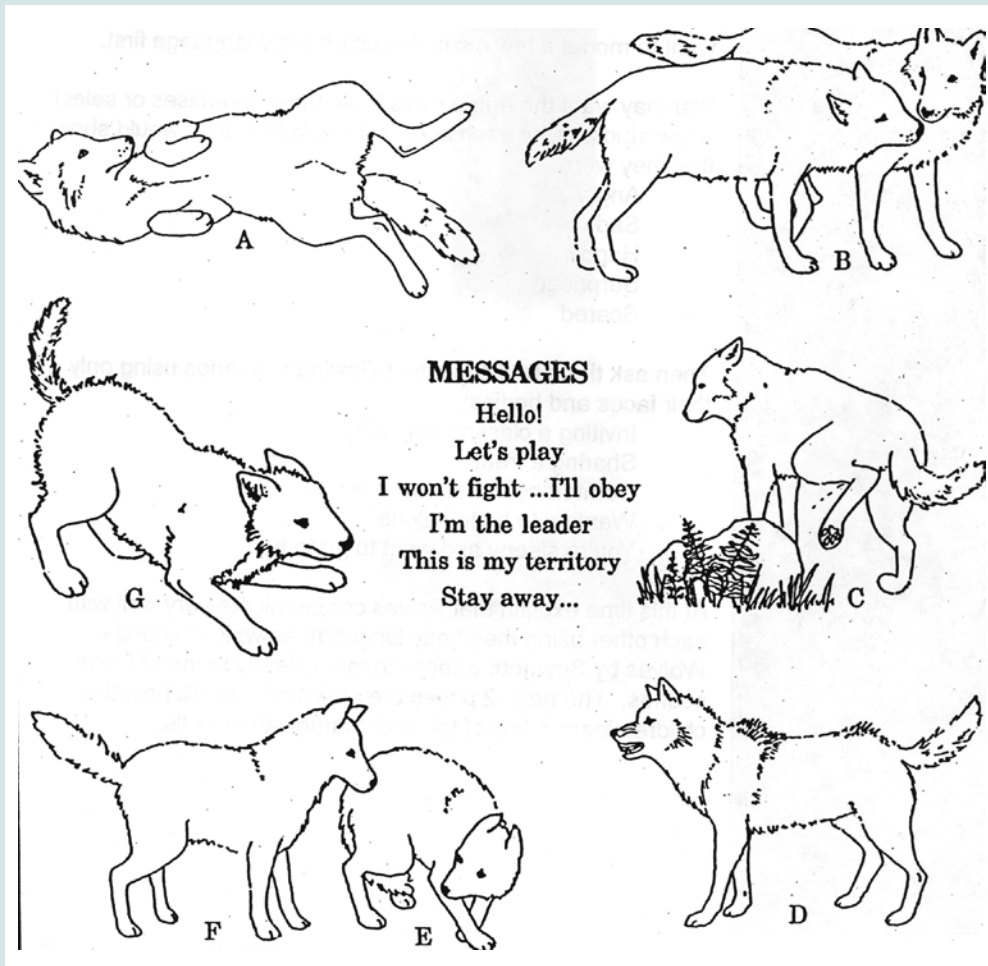
A Career in the Fish and Wildlife Service

By Rebecca Halbe

With an English degree from Carleton College, I've now worked for 24 years with the U.S. Fish and Wildlife Service, including time at two field offices, a Regional Office and 13 years in the Refuge System Headquarters in Arlington, Virginia. I am responsible for the Refuge System's recreation fee and concessions programs, visitor satisfaction surveys, and various E-government initiatives, among other programs.

I didn't start on this career path entirely deliberately. During winter break of my junior year in college, I started working for the Young Adult Conservation Corps (YACC) at the Water and Power Resources Service in Provo, Utah, where I read and transcribed thermograph tapes. My last reinstatement with YACC led to my first permanent job with the federal government and the Service.

I worked at the Animal Damage Control office outside Salt Lake City and operated a Hewlett-Packard card-reading computer system -- high tech in those days. My Realty career started in June 1985, when I was hired as a realty specialist at the Wetlands Office in Fergus Falls, Minnesota, which led to a move to the



Sevilleta National Wildlife Refuge in New Mexico created a curriculum guide about the endangered Mexican gray wolf. In this activity, students are asked to match a message with the way wolves communicate that message. Answers on page 27. (USFWS)

Focusing on the Singular

Farther west, new professional development projects for teachers focus on a single location or a single species. The Matagorda Island Teacher Workshop Cooperative Initiative, which involves staff and Friends of Aransas and Matagorda Island at Aransas National Wildlife Refuge, has created an annual two-day workshop that shows teachers an array of learning opportunities on Matagorda Island.

Twelve teachers attended the first workshop in November 2006, sleeping in a bunkhouse on the island and spending two days with naturalists from the refuge and local partner organizations. They tried their hand at birding, observing the ecology of beaches and marshes, stargazing and photography. Teachers earned continuing education credits and received curriculum guides that enable them to meet Texas public school requirements to educate middle and high school students about coastal resources.

Tonya Stinson, environmental education specialist at Aransas National Wildlife Refuge, was the prime mover behind the teacher initiative. The Friends organization provided financial and administrative support. Stinson believes it's important

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Regional Office in the Twin Cities and later to Arlington.

Having worked for nearly a quarter of a century with the federal government, I have a few recommendations:

- Always accept a “detail” or job swap when you can, taking the opportunity to gain a new perspective. When I was a Realty specialist, I took a detail into Headquarters for a jam-packed month, writing briefing statements for the confirmation hearings of Service Director John Rogers and Assistant Director, Fish and Wildlife and Parks Constance Harriman. It was amazing how much of that month’s reading file included my work.

- Network, network, network. Earlier in my career, I was ready to take a part-time Realty job with the General Services Administration just to move to the Twin Cities. Turns out, my supervisor knew of some Service Realty folks in the Twin Cities who wanted to move, and within a few months, I was in the Twin Cities.

- Volunteer. Speak at schools during a Career Day. Staff a table at a local festival to educate the public about the Service. Work a booth for International Migratory Bird Day. The Service one year even staffed a table at the Smithsonian Institution’s Folklife Festival on the National Mall.

- Keep training and learning. Budget training, for example, is great for anyone in government work. The Government Affairs Institute offers a week of training right on Capitol Hill, with members of the House and Senate as speakers. It’s a real life civics course.

The people I most respect are those who take responsibility for their actions – good as well as bad. As Mark Twain said, “Always do right. This will gratify some people and astonish the rest.” ♦

Rebecca Halbe is a program analyst in the Refuge System Division of Visitor Services and Communications.

Around the Refuge System

Preserve America

The U.S. Fish and Wildlife Service has been honored for its new Preserve America Grants Program. The Chairman of the Advisory Council on Historic Preservation praised the National Wildlife Refuge System and the National Fish and Wildlife Foundation for promoting partnerships to preserve historic resources on refuges. The Preserve America program offers competitive grants of \$10,000 to \$15,000 to fund interpretive and educational projects focused on history and historic sites on refuges. Ideal proposals include national, state or local partnerships as well programs that blend conservation with historical themes. The first year's grant selections will be announced in early 2007.

Washington

The recent surprise discovery of a plant not seen in the state of Washington for about 65 years is proof that restoring habitat for one species can have

unexpected benefits for other species. The discovery of two pink sand verbena plants at Leadbetter Point at Willapa National Wildlife Refuge stunned refuge biologist Kirsten Brennan, who has been tracking western snowy plovers in the area following habitat restoration work. Beach grass had been scraped away and oyster shells spread over the sand to recreate historic conditions and provide nesting habitat for the small snowy plovers.

Once widespread along the Washington and Oregon coasts, both the snowy plover and the pink sand verbena dwindled as the sand dunes were overtaken by invasive European beach grass. The discovery of the plant and the renewed breeding of the streaked horn lark are proof that the restored dunes are reawakening.

Wyoming

Search and rescue dogs were the highlight of a special program offered at National Elk Refuge by refuge maintenance worker Amanda Soliday,

who volunteers with the Wyoming K-9 Search and Rescue program. About 40 people attended Soliday's program, during which she described how her dogs Haley and Roscoe are trained and certified for different levels of searching, from water and wilderness to avalanches and buildings. Soliday says the youngsters in her audience were all eager to hide so the dogs could find them. She also gave the children strategies in case they become lost in the woods.

Colorado, Michigan

Rocky Mountain Arsenal National Wildlife Refuge, located about 10 miles from Denver, grew from 5,000 to 12,000 acres last fall, following the successful cleanup and transfer of land from the U.S. Army to the U.S. Fish and Wildlife Service. The manufacture of chemical weapons on the site was stopped in the early 1980s and it became an EPA Superfund site in 1987. The first 5,000 acres were clean by 2004, when the refuge was established. The EPA recently approved removing 7,000 acres from the Superfund list, allowing this



Maintenance Worker Amanda Soliday shows off the skills of her search and rescue dogs to children at National Elk Refuge in Wyoming. She gave them strategies in case they become lost in the woods. (USFWS)

newest acreage to be added to the refuge. When the cleanup is completed in 2011, another 2,500 acres will be added to the Refuge System.

In Michigan, The Nature Conservancy helped double the size of the Detroit River International Wildlife Refuge. The Refuge System entered into a cooperative agreement with TNC to permit management of the 2,217-acre Erie Marsh Preserve as part of the refuge. Erie Marsh is one of the largest marshes in Lake Erie. TNC will retain ownership rights, while the refuge will manage the land. Since 2001, the Refuge System's only international wildlife refuge has grown from 304 acres to 4,211 acres.

Maryland

Blackwater National Wildlife Refuge has been selected as a 2007 Rand McNalley Best of the Road™ Editor's Pick. The editors annually choose five trips in the United States and Canada that feature interesting stops. Blackwater Refuge is a featured stop along a route from Ocean City to Baltimore. The route will be highlighted in the 2007 Rand McNalley Road Atlas™ and on the Atlas Web site.

In other news affecting Blackwater Refuge, the state of Maryland has decided to permanently protect land near the refuge that was to be developed as a resort. The state will buy 70 percent of the farmland that had been slated for construction. The developer will be permitted to build homes on the remaining land but there will be no golf course, hotel or conference center. Blackwater Refuge Manager Glenn Carowan had testified at public zoning hearings that the construction posed serious concerns for the refuge, the Little Blackwater River watershed and, eventually, the Chesapeake Bay.

Georgia

There is a little bit more of Okefenokee National Wildlife Refuge in the National Conservation Training Center (NCTC) archive. Motion picture footage of turn-of-the-century logging in south Georgia, recordings of a 1951 government radio show about the refuge and the original journal of first refuge manager John Hopkins, chronicling 1900 to 1945, have now been transferred to NCTC. "The NCTC archive is able to preserve the collection in ways we can't in our lock-up room in Folkston," says Refuge Ranger Sally Gentry. Gentry returned to Georgia with replacement digital scans of documents and photographs that will permit their continued use in refuge programs.

The NCTC museum and archive are not open to the public on a regular basis, but NCTC students and other researchers may contact Service Historian Mark Madison for a tour or access to specific items in the collection. (Mark_Madison@fws.gov, 304-876-7276)

Duck Stamp Winner

Wildlife artist Richard Clifton of Milford, Delaware, won the 2006 Federal Duck Stamp Art contest with his depiction of a pair of swimming ring-necked ducks. He has entered the competition numerous times over the years, and his art is seen on many other wildlife stamps. This is the first time he has won the Federal Duck Stamp Competition. Clifton's painting was selected from 297 entries representing 49 states. This year's competition was co-hosted by Ducks Unlimited, the Greater Memphis Arts Council and the Memphis College of Art. Duck Stamps bearing this year's winning design will go on sale in late June.



Wildlife artist Richard Clifton of Milford, Delaware, won the 2006 Federal Duck Stamp Art contest with his depiction of a pair of swimming ring-necked ducks.

Honors in the Planning Process — *continued from pg 1*

group, either from within or outside the U.S. Fish and Wildlife Service, in support of refuge planning. Nominees are judged on the basis of quality, creativity, teamwork and outreach.

Outstanding Plan

Rocky Flats National Wildlife Refuge in Colorado won the Outstanding Plan Award for its Comprehensive Conservation Plan. Planning began in 2002, nearly three years before the CCP was completed in June 2005. The Rocky Flats National Wildlife Refuge Act of 2001 allowed the Service only three years to complete the CCP, required even before the refuge was formally established. The tight time frame, coupled with the level of complexity, made the planning process particularly challenging. Nevertheless, the deadlines were met.

Within Rocky Flats' 380-acre industrial area, thousands of women and men built nuclear components for nearly 50 years. In 2001, Congress decreed that most of the 6,240-acre Rocky Flats site would become a national wildlife refuge after cleanup and closure of the industrial site. The Department of Energy, which owned Rocky Flats, embarked on an unprecedented cleanup in 1996. Transfer

of the site to the Service will occur when the Environmental Protection Agency, with concurrence from the Colorado Department of Public Health and Environment, certifies that the cleanup and closure have been completed by the Department of Energy.

Rocky Flats Refuge is the only national wildlife refuge that supports the threatened Preble's meadow jumping mouse. The refuge also contains over 1,500 acres of xeric tallgrass grassland, the largest example of this ecosystem remaining in Colorado and perhaps North America.

The planning team was composed of Service employees, private contractors, the Department of Energy and the State of Colorado. The Service, which created an interactive Web site as one means of public outreach for the CCP, received more than 5,000 comments.

The award recognizes a planning team for development of a high quality CCP, Land Protection Plan, or landscape-level plan. All members of a core planning team, including Service and non-Service employees, are eligible. The criteria for judging are quality, problem solving, presentation, public participation and teamwork.

Outstanding Planning Staff

Barry Brady, refuge program supervisor in the Northeast Region, received the Outstanding Planning Staff award in recognition of his outstanding contributions to comprehensive conservation planning. Considered by his colleagues to be the "conscience" of the Northeast Region's Division of Conservation Planning and Policy, he reviews each CCP in its entirety. Barry challenges planners to resolve difficult issues, even those that have been put off for years. He is tireless in ensuring that CCPs include compatibility determinations that are based on good science and sound judgment and conform to policy. Often the decisions in the compatibility determinations involve the most contentious public issues affecting a CCP.

Wilderness and Wild and Scenic Rivers reviews developed under Brady's leadership are used as national models. Brady is particularly adept at simplifying complex planning issues, a talent honed during his years managing several national wildlife refuges. ♦

STOKED and Other Education Strokes — *continued from pg 9*

At the end of the year, each child takes home a hardbound book of all these personal observations.

Getting STOKED at Lee Metcalf National Wildlife Refuge

A bit farther north at Lee Metcalf National Wildlife Refuge in Montana, STOKED returns every spring, much like the migratory birds for which the refuge was created. Pairs of advanced placement high school students prepare 30-minute presentations on ecological issues for elementary school students. They are STOKED – Students Teaching Other Kids Ecological Dynamics.

One student leader interested in dance translated animal movements into human form. The children duplicated the movements in an educational and very entertaining activity that didn't require anyone to sit still. Other STOKED presentations covered aquatic invertebrates, mammals, trees and fish migration.

Some of the first elementary students who participated in STOKED a decade ago have now become student teachers. Refuge Outdoor Recreation Planner Bob Danley says the refuge has embraced STOKED because of the powerful

learning outcomes of kids teaching kids. Besides, says Danley, "The partnership with local schools has broadened awareness that the refuge really is 'the outdoor classroom' in the greater Bitterroot Valley community." ♦

Protecting the Light-footed Clapper Rail on a Naval Base

Seal Beach National Wildlife Refuge in California has one employee – Refuge Manager Kirk Gilligan. But thanks to a strong partnership with the U.S. Navy, a vibrant and hardworking Friends organization, a pair of virtually full-time volunteers and 200 more helpers who showed up on National Public Lands Day, restoration of the refuge’s Hog Island for the endangered clapper rail is well underway.

Hog Island earned its name when early settlers used the island as a holding area for livestock. Those settlers also brought in such invasive species as fennel, malta starthistle and very thick black mustard – a bad combination for the endangered light-footed clapper rails that nest on the refuge. The restoration of native vegetation on Hog Island is one of several refuge projects to improve and expand habitat for the clapper rail.

It all started when the refuge began using GPS technology to map the invasives on the island. Volunteer Mark Beaty, a glass contractor in nearby Westminster, learned to use the equipment and then taught others.

Beaty and his mother Shirley are almost full-time volunteers at Seal Beach Refuge. They started by helping to turn an area behind the visitor center into a native plant garden. What may have been a parking lot for tanks now features trails and flowering plants even in winter.

“There’s been a tremendous increase in birds in the garden area,” says Beaty. “If it works in the garden, it should work on Hog Island.” Gilligan agrees that a restored Hog Island will provide better habitat for many migratory birds as well as good cover for clapper rails.

Nesting huts and safe cover

Great blue herons, peregrine falcons and other raptors prey on clapper rails, especially during exceptionally high tides when there is no place for the rails to hide. Wooden platforms were placed around the refuge, including



Volunteers of all ages are helping to restore Hog Island on Seal Beach National Wildlife Refuge in California, removing invasives and covering the island with native vegetation to provide nesting cover for the endangered clapper rail. (Bob Schallmann, U.S. Navy)

some surrounding Hog Island. The 85 platforms rise and fall with the tide so clapper rail nests are not washed away.

At first, the platforms had only vegetation cover; when that failed to keep predators away, small huts with spiked roofs were added. Gilligan says the huts have been extremely successful in providing safe nesting areas for the rails. The platforms will be complemented by the restoration of native vegetation.

On National Public Lands Day in 2006, more than 200 volunteers showed up to cut weeds, dig holes for 600 marsh plants representing 15 species, and put down mulch to slow the return of the invasive weeds. The U.S. Navy used funds from a legacy grant to buy the plants, the mulch and an irrigation supplement.

Seal Beach Refuge is located entirely within the Naval Weapons Station Seal Beach. The Navy provided access to

the refuge as well as vans and drivers to shuttle the volunteers. “We have an outstanding relationship,” says Bob Schallmann, Navy biologist and conservation program manager. “It is truly a partnership in conservation.”

Gilligan has been impressed with the community’s willingness to contribute. Toyota Motor Corporation, for example, is a sponsor and has brought employee volunteers as well as food, gloves and t-shirts. “We planted most of an island in just one morning,” said the pleased manager, “and everyone is eager to see what the island looks like come spring.” ♦

Wilderness Training: Learning the Importance of Saving All the Pieces

Wilderness is the raw material out of which man has hammered the artifact called civilization. . . Wilderness has the power to console, and there's a lot of consolation needed in this world. Another of the principal values of wilderness, both as a concept and as a real place, is its ability to inspire.

Aldo Leopold, A Sand County Almanac, 1949

By Sam D. Hamilton

As I lay awake listening to the sounds of a Montana summer night in the Scapegoat Wilderness Area last June, I was struck by the truth of Aldo Leopold's thoughts. The retreat from the frenetic pace of daily life offered by wilderness puts the mind at peace; and a mind at peace can see new possibilities for meeting the challenges of life back in "civilization."

Along with others from the U.S. Fish and Wildlife Service, the Forest Service, and the U.S. Air Force, I was taking part in the Arthur Carhart Wilderness Training Center's annual



Surveys show that the public values wilderness areas as sources of clean air and water, havens for wildlife, places for primitive types of recreation in wide-open spaces and places that preserve our natural heritage. Regional Director Sam Hamilton last year experienced the Scapegoat Wilderness Area in Montana. (USFWS)

National Wilderness Stewardship course. Our experiential learning included a day on the trail discussing wilderness stewardship and making camp for the night in a local wilderness area. I entered this training with an appreciation for wilderness. I walked out with a strengthened commitment to wilderness in the Refuge System.

The 106-million-acre National Wilderness Preservation System is managed by the Service, the Bureau of Land Management, the National Park Service and the Forest Service. These four agencies established the Carhart Center on the campus of the University of Montana in Missoula in 1993.

Promoting Diversity and Recreation in the Wilderness

Wilderness areas contribute significantly to the biological integrity, diversity and environmental health of the Refuge System. Surveys show that the public values wilderness areas as sources of clean air and water, havens for wildlife, places for primitive types of recreation in wide-open spaces, and places that preserve our natural heritage.

It also became clear on this training trip that our outfitter has been able to manage a highly successful hunting guide operation in the Scapegoat, in a large part due to its wilderness status. The more time I spent with our outfitter, the more convinced I became that thoughtful wilderness stewardship practices can result in outstanding opportunities for quality wilderness

hunting and related wildlife-dependent recreational experiences.

The Okefenokee wilderness, the largest Refuge System wilderness in the Southeast Region, might not even exist without its designation as a protected wilderness. This vast wilderness, measuring about 38 miles long and 25 miles wide, provides a rich diversity of habitat types that support numerous species of wildlife and plants, including the red-cockaded woodpecker, American bald eagle and the wood stork – all endangered species. The refuge staff works to conserve these and other species and preserve the area's wilderness character.

The naturalist John Muir once said, "When we try to pick out anything by itself, we find it hitched to everything else in the universe." That interconnectedness of all life is a theme running through the National Wilderness Stewardship course.

Course offers information and inspiration

The course is a wonderful source of information, consolation and inspiration. It offers a rare opportunity to untether ourselves from daily technology and reconnect with nature at its wildest.

It is also an opportunity to meet wilderness managers from across the country who are all striving to understand how wilderness preservation is integrated with our other stewardship responsibilities. After my experience in Montana, I'm convinced that the road home for the human race runs through the wilderness.

The next wilderness training will be held June 24–29. For more information, check out www.wilderness.net; to register, contact Karen Lindsey, 406-243-4627. ♦

Sam Hamilton is regional director for the Southeast Region of the U.S. Fish and Wildlife Service.

Meet Charles Rodgers

Aviation Mechanic at Yukon Delta National Wildlife Refuge



How did you become an airplane mechanic?

I grew up in Bethel and Upper Kalskag, a village about 68 air miles up the Kuskokwim River from Bethel, Alaska. When I was in the ninth grade, I moved to Kalskag to go to flight school. They had a program that was free to students. My father agreed to let me go. He said it was a good way to get a pilot license.

I never got the pilot's license. I really wanted to learn how to fix airplanes. I always enjoyed taking things apart and working on snow machines, four wheelers, outboard motors and all sorts of engines. I guess you could say I migrated from wanting to fly to wanting to work on planes in high school. I stayed in Kalskag, living with my grandfather, Steven Nicholi, an Eskimo elder, until I graduated high school in 1989.

After that, I worked as a laborer building houses, until I heard on the radio that a local air carrier was hiring an aircraft mechanic's helper. I was hired on the spot. I started as a mechanic's helper and stayed for 16 years. I left as director of maintenance. It was a great experience. I got to travel all over the Yukon Delta, repairing aircraft and supervising major and minor repairs and inspections on a wide range of aircraft from small Cessna 172s to large transport category aircraft like Casa 212s.

And from there you came to Yukon Delta National Wildlife Refuge?

I started working for the Service in February of 2005. I heard on the radio they were looking for a local aircraft mechanic.

What are some of your more challenging days like?

The first one I recall, I had to inspect an aircraft that "nosed up" on a lake in Togiak National Wildlife Refuge. It was winter; the aircraft had a propeller strike, which means the propeller hits something while turning. When an aircraft is down and in a remote location, there are no roads, no airports, absolutely nothing for support equipment. I had to think of every possible piece of equipment needed to do the job and get as much information as possible about the repairs needed. We flew out from Bethel with all my tools and equipment to the job.

Lots of support parts were waiting for me at the lake after they had been shipped to Dillingham and flown to the lake by Togiak Refuge pilots. The weather was beautiful. I inspected the engine and replaced the prop. Then we ferried the aircraft back to Bethel with no problems. That was a really fun job.

Another challenging job was at the remote field camps at Kanagiak when

I had to replace both water rudder assemblies on our Cessna 206. The aircraft got pushed up on a tidal bank and damaged both water rudders. I had to come in the night before and take the parts off another aircraft that was in the hangar for inspection, so we could get the damaged one back up ASAP. It was extremely critical to get this plane repaired fast and make it safe for the bird banding mission it was on. I even helped band birds!

What do you enjoy doing when you're not on the job?

Spending time with my family is my top priority. We just got back from a family camping trip. We took our boat from Bethel to about 30 miles below the city of McGrath on the Kuskokwim River. My GPS odometer says in the eight to nine days we were gone, we covered about 900 miles.

Tell us a little bit about your family.

I was born in Bethel. My family is Alaskan Eskimo. I have two brothers in Bethel and one in Anchorage. I have a sister still in Bethel and three sisters in Anchorage, Utah and Washington. My wife and I have three daughters and a son, 7 years to 15. The time just goes by way too fast with kids.

At work, the Service is a very big family of people who are quality individuals who love what they do. I am just glad to be part of the team. ♦

Saving Rain for Sunny Days in South Texas

By *Monica Monk*

An innovative nursery and “green” water delivery system is playing a key role in what is shaping up to be one of the Lower Rio Grande Valley National Wildlife Refuge’s most productive re-vegetation seasons in years. It all began with construction in 2004 of a new nursery that includes a state-of-the-art 24,000-gallon rainwater collection and delivery system.

The rainwater irrigation method now used by the refuge either replaces or supplements the chlorinated, slightly saline local water supply that had been used exclusively to germinate seeds and grow plants. For nearly 30 years, the refuge has worked to create a subtropical, riparian woodland corridor along the last 275 miles of the Rio Grande. The refuge has restored thousands of acres of former agricultural fields through the re-vegetation program.

In fall 2006, staff at Lower Rio Grande Valley Refuge in Texas used the nursery’s products as they worked with neighboring farmers and volunteers to transplant thousands of plants, including several species of fast-growing acacias, characteristic of the Tamaulipan thornscrub ecosystem found only in extreme south Texas, and Texas ebony, mesquite, tepeguaje, huisache, blackbrush, retama and tenaza. They created wildlife habitat across hundreds of acres.

More than 95 percent of the valley’s original native brush land has been cleared or altered for agriculture and urban development. Lower Rio Grande Valley Refuge, is home to some of the last parcels of subtropical thorn forests in the United States.

So, when the re-vegetation program outgrew its space at Santa Ana National Wildlife Refuge, construction of a new – and very different – nursery began in 2004 on the Marinoff Tract of the Lower

Rio Grande Valley Refuge. After 18 months, the new building, pole barn and nursery were complete, with most of the work done by the refuge maintenance staff. Chris Best, now a botanist with Ecological Services in Austin, and I did most of the nursery design. The old nursery had too little space. The nursery components were fragmented, creating inefficient distances between the office, the plant beds and the pole barn. “Over the years,

our knowledge and capacity to restore habitat has improved and increased, but our facilities were old and cramped,” recalled Ken Merritt, project leader of South Texas Refuge Complex. “The new nursery allows staff to complete growing tasks year round and in any weather.”

Let It Rain

The roof of the new re-vegetation office and work building serves as the rain catchment area “Being able to catch rain is like money in the bank,” noted Merritt, who pointed out that an eight-inch rain completely fills all of the nursery’s storage tanks. With rainfall averaging about 24 inches per year, the refuge hopes to collect of 60,000 to 70,000 gallons of rain annually.

In the semiarid Lower Rio Grande Valley, rain, drought and reservoir levels are always hot topics of conversation. Ask any gardener or farmer, and they will probably agree that rainwater is far superior to other sources of water for growing plants. “It is definitely a key component to the success of many native species in the valley,” forestry technician Noreen Mastascusa reports.

The nursery used rainwater almost exclusively in its first five months. Staff noticed improved seed germination and survival rates as well as increased plant vigor and growth. Indeed, last year, refuge forestry technicians produced a whopping 98 percent of an aggressive goal of 270,000 seedlings of 72 native plant species.

“The staff that works to restore native habitat is skilled and resourceful and has produced very good results in the past under less-than-ideal conditions,” said Merritt. “It’s great to see everyone’s vision and hard work producing results like these so soon.” ♦

Monica Monk, formerly refuge operations specialist at Lower Rio Grande Valley National Wildlife Refuge in Texas, is now with the Natural Resources Conservation Service in Iowa.



Forestry Technicians Noreen Mastascusa and Tino Caldera check plants in the new nursery at Lower Rio Grande National Wildlife Refuge in Texas. The new nursery includes a state-of-the-art 24,000-gallon rainwater collection and delivery system that is helping the refuge achieve one of its most productive re-vegetation seasons in years. (Michael Carlo/USFWS)

The Student Career Experience Program Promoting Conservation and Diversity — continued from pg 13

magazine that, despite the increasing diversity of the American population, the conservation community remains “stubbornly white.”

Butler believes that is in large part because young people are simply not aware of career opportunities in conservation in general or the Service in particular. As a member of the Minorities in Natural Resources Committee of the Southeast Association of Fish and Wildlife Agencies, Butler attends career fairs to drum up interest in conservation careers and in SCEP.

“Students don’t realize all the things the Service does with migratory birds, refuges, ecological services, law enforcement and wildlife inspectors,” says Butler.

Human resources personnel in the Service are increasingly promoting SCEP early in a student’s high school or college career so the program can be tailored to a student’s interests and abilities. For a refuge, SCEP can offer an opportunity to staff hard-to-fill positions or increase staff diversity. The offices of Diversity and Civil Rights and

Human Resources are eager to work with refuge managers to find qualified SCEP students.

In addition to addressing the huge void that is going to be created as large numbers of baby boomers begin to retire, “SCEP makes an investment in the future,” says Butler, who sees opportunities to move into administration and beyond. “The sky is the limit for me. There is room at the top. You feel encouraged.” ♦

Start by Teaching the Teachers — continued from pg 18

for successful professional development initiatives to fill a need that hasn’t already been met and take advantage of as many local partners as possible.

At Sevilleta National Wildlife Refuge in New Mexico an effort to provide educators with accurate and unbiased information about the endangered Mexican gray wolf led to design of an education outreach program focused on the wolf. In 2005, several retired teachers volunteered to help the refuge create an educator’s guide. The guide includes activities for pre-school through twelfth grade and will eventually be available online.

In the “Build a Wolf” lesson, for example, elementary students learn about wolf adaptations as they dress up in a costume that includes large teeth, ears, feet and a fluffy tail. Middle school students play a hunting game to learn about predator/prey relationships. High school students become members of a fictitious “Wolf Reintroduction Team;” they must decide where and how to reintroduce Mexican gray wolves and then defend their recommendations.

More than 150 guides have been distributed to educators, from those

who teach in public, tribal and parochial schools to those who provide home schooling. Last year, the refuge’s wolf outreach program reached more than 650 students and 100 teachers, according to Kimberly King-Wrenn,

visitor services professional at Sevilleta Refuge. “While the Mexican gray wolves are still searching to find their place in the southwest,” says King-Wrenn, “wolf education has found a home at Sevilleta Refuge.” ♦



John Heinz at Tinnicum National Wildlife Refuge Environmental Education Specialist Erika Scarborough teaches a Project WILD workshop to local teachers on the deck of the Cusano Environmental Education Center. The center opened to the public in January 2001. (Bill Buchanan/USFWS)

ANSWERS TO WOLF COMMUNICATIONS

See if you did as well as the youngsters who took the “messages” activity as part of the educational program about Mexican gray wolves at Sevilleta National Wildlife Refuge in New Mexico.

- A. I won’t fight..., B. Hello, C. This is my territory, D. Stay away
E. I won’t fight, F. I’m the leader, G. Let’s play

Chief's Corner — continued from pg 2

program. A record 9.4 million acres were burned in 2006, up from 8.7 acres a year earlier. The accumulation of fuels often outpaces our ability to reduce them, but we will continue to control fuels – quite literally fighting fire with fire.

Second, we need to realize that the fire community is being relied upon to respond to risks other than fire, including hurricanes and other natural disasters. The demands on our firefighting force are enormous, and funding has to keep pace.

Finally, we have to increase public awareness. Since 2005, the Service has partnered with The Nature Conservancy to work with stakeholders to apply fire and other management tools to restore and maintain landscapes. These partners help minimize the threat of wildfire and maximize benefits to both people and biological communities. We will continue to seek more of these partnerships.

The quality of our fire program honors all firefighters, including the five Forest Service firefighters who sacrificed their lives last summer in fighting a blaze that appears to have been set. Ultimately, public safety is our first concern as we squarely face the trends that drive demand for fire management.

Bird Call

Rare bird nestings provided a thrill last summer in Alaska.

Birder Stacy Studebaker was collecting and photographing plants on Kodiak National Wildlife Refuge when she found the nest of the rare Kittlitz's murrelet on a 3,000-foot-high bare granite ridge. It is the first record of a Kittlitz's murrelet nesting on Kodiak Island and one of the few nests ever found in Alaska. "As an avid Alaska birder," said Studebaker, "this discovery was like finding the Holy Grail."

Even farther north, field scientist Paul Sykes, with the U.S. Geological Survey, joined a Wilderness Birding Adventure along the north slope of the Brooks Range in Arctic National Wildlife Refuge to search for the gray-headed chickadee. A pair of chickadees, only rarely seen in Alaska, was found nesting on the edge of the tundra and forest. Sykes and others on the trip had never seen the species in North America. The chickadees were spotted in a small willow-filled box



Birder Stacy Studebaker photographed a rare Kittlitz's murrelet nest on Kodiak Island in Alaska.

canyon along the Canning River. They were nesting in a cliff swallow nest, a mud-domed structure on a cliff face. It is the first time gray-headed chickadees have been known to use cliff swallow nests and the first time they have been documented nesting so high. They were up 200 feet. ♦

"Bird Call" will appear periodically as a column in this newsletter. If you've recently seen a rare, unusual or particularly interesting bird on a national wildlife refuge, let us know at RefugeUpdate@fws.gov.

Send Us Your Comments

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



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