U.S Fish & Wildlife Service
National Wildlife Refuge System

# Refuge Update

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## Inside



## A Look at Montana

The 1.1 million-acre Charles M Russell National Wildlife Refuge has the largest prairie elk population in the U.S.

Red Rock Lakes National Wildlife Refuge, designated a Wilderness Area and a National Natural Landmark, continues to be one of the most important habitats in the continental U.S. for trumpeter swans.

Benton Lake National Wildlife Refuge has about 40,000 snow geese and 5,000 tundra swans during spring and fall migrations and one of the largest Franklin's gull breeding colonies in Montana.

Medicine Lake National Wildlife Refuge is home to about 10,000 American white pelicans, the fifth largest colony in North America.

# Sabine National Wildlife Refuge — Still Closed — Faces Huge Cleanup

*In the aftermath of Hurricane Rita, hazardous material from the communities of Holly Beach and Cameron, La., and neighboring oil and gas industrial areas may be settling into the marshy areas of Sabine National Wildlife Refuge. (Steven R. Reagan/USFWS)*

**Refuge managers** are trying to figure out how to remove the tons of potentially hazardous debris left on Sabine National Wildlife Refuge, La., in the wake of Hurricane Rita.

Tanks of chlorine gas, diesel fuel and other hazardous materials from the communities of Holly Beach and Cameron and neighboring oil and gas industrial sites washed into the marshy areas of the national wildlife refuge. The estimated 20-foot storm surge, waves and high winds from Hurricane Rita swept away about 500 homes from the coastal town of Holly Beach. The debris from this community and oil and gas drilling sites both on and off the refuge were washed into the middle of nearby Sabine National Wildlife Refuge.

Initial estimates show about 2,800 oil and propane tanks and other containers litter the landscape, some covered by several feet of marsh grass islands formed by the storm surge. Tons of additional debris include roofs, lumber, stoves, refrigerators, air conditioners and even tractor trailer rigs from the towns of Holly Beach and Cameron. They are clearly visible along six miles abutting a dike in the middle of the refuge.

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# From the Director

## Challenges of a New Year

Each New Year gives us an opportunity to remember the past and look hopefully toward the future. Last year, we learned how resilient Service employees can be as they responded to the devastation of hurricanes Katrina, Rita, and Wilma. This year, we will undoubtedly be confronted by new challenges as we continue to adjust to a changing conservation landscape.

Tight budgets, changing demographics, competing interests and other realities force us to rethink the way we do our work. Whether it's coordinating with other agencies and organizations to respond to a natural disaster or developing new conservation partnerships, the Service and Refuge System have demonstrated an ability to survive and even thrive under tough circumstances.

Like the fish and wildlife inhabiting refuges, we have had to learn to adapt to change.

Decades ago, most refuges were viewed solely as havens for wildlife, not people. Today they are still natural habitats, but they are much more. Each year more than 40 million people visit national wildlife refuges. Refuges annually host more than 2.3 million hunting visits, about 7 million angling visits, and they are recognized worldwide as premier birding locations.

In a 2002 survey, more than 26 million people reported that they visited refuges for interpretation and nature observation. Refuges are also economic engines. According to *Banking on Nature*, the Refuge System generated almost $1.4 billion in total economic activity in fiscal year 2004.

We've done a great job of making refuge opportunities available to the public. But as more people become estranged from nature and hunting and fishing license sales continue to decline as a percentage of the growing U.S. population, we need to do more. A significant portion of the drop in hunting participation rates, for example, is due to loss of opportunity. As it gets more and more difficult for people to hunt on private land, public lands become critical. I see the Refuge System as a major component of any future strategy to recruit and retain hunters and other outdoor recreation enthusiasts.

Refuges are venues to involve local communities and others in our conservation mission. In coming years, our success will be driven by our ability to continue to build partnerships with conservation groups, volunteers, wildlife recreation organizations and states. Refuges belong to all of us, and we all have a stake in the future of these carefully managed homes to wildlife.

# Chief's Corner

## Giving Back

We may not be able to fully know how much damage Hurricanes Katrina and Rita inflicted on national wildlife refuges for months – maybe not until the spring. At Breton Refuge, for example, we have to wait until spring to judge the nesting season for endangered brown pelicans and therefore the real impact of Hurricane Katrina on the refuge's wilderness area. Four thousand pairs nested on the refuge last spring. Who knows what will happen this spring.

But, while we are still calculating the wildlife impacts, we are always witnessing the human report. In that way, the Refuge System has a lot to be thankful for. Not only did U.S. Fish and Wildlife Service people help communities flattened by the storms, but we also helped one another.

In 2004, Merritt Island National Wildlife Refuge in Florida raised funds for employees of J.N. "Ding" Darling National Wildlife Refuge who had been hit hard by Hurricane Charley. In 2005, Ding Darling Refuge decided it was time to give back. So the Ding Darling Wildlife Society, the refuge's Friends organization, organized a collection.

As of December 22, 2005, about $29,000 had been collected. Service employees

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*Refuge* **Update**

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# A Brand New Species Discovered in Alaska

**Three arthropod species** never before reported in Alaska have been discovered at Kenai National Wildlife Refuge. A scarab beetle and an alpine bristletail are new to Alaska and a harvestman – better known by the name "daddy long-legs" among laypeople – is new to science.

Dominique Collet, a local entomologist, found the bristletail. While biological technician Matthew Bowser was collecting more bristletails, he found the harvestman. The scarab beetle was collected in a separate activity.

Kenai Supervisory Biologist John Morton is quite excited about the discoveries, which are an important part of the refuge's Long Term Ecological Monitoring Program, in which sweep net samples are taken periodically following a grid that covers the entire 2 million-acre refuge. "In Alaska," he said, "we always start with the big charismatic animals and have to work our way down the chain. Nobody has been looking at insects." The monitoring program will provide a fairly complete picture of the insect fauna of the refuge.

Bowser first worked at Kenai Refuge as a biological technician in 2004. He grew up in Florida, where he became interested in insects even as a youngster. When he was a young soccer player, he spent more time looking at the bugs on the ground than the ball. "I could go out in my yard every day and find something I hadn't seen before," he recalls. At the University of Florida, he discovered entomology as a career and then he discovered Alaska, where he is now a graduate student at the University of Alaska – Fairbanks. As part of his master's thesis, Bowser will help develop new methods for monitoring and modeling arthropod populations on the refuge.

"Entomology is really a frontier in Alaska," says Bowser. "Compared with most of North America, the insects of Alaska are poorly known because there have not been many people here studying them, and there has not been a great agricultural pest problem to push their study forward."

The alpine bristletail looks like a silverfish but has large eyes and an ability to jump. Bristletails live among rocks and feed on algae and lichens. After the first one was discovered, Bowser and a colleague covered headlamps with red cellophane and headed out at night to find dozens of them crawling around on lichen-covered rocks despite a strong wind and a temperature of eight degrees Celsius.

*A scarab beetle and an alpine bristletail, new to Alaska, were found on Kenai National Wildlife Refuge as was a harvestman new to science. (USFWS)*

With the help of professional literature and Internet searches, Bowser discovered that the world's foremost expert on bristletails is an elderly scientist in Germany. He is now deciding if the bristletail is actually a new species – or just new to Alaska.

## New to Science

When Bowser brought a colony of bristletails home for further observation, he also brought some of the arthropod's associates, including a harvestman. As he began keying the arachnid, he realized it didn't belong to any other species in North America. The foremost expert on harvestmen, James Cokendolpher at Texas Tech, has confirmed that the Kenai species is indeed new to science. Bowser and Dr. Cokendolpher will co-author a description of the new species in a professional journal.

Now in addition to his graduate studies and his employment at the refuge in the Student Temporary Employment Program, Bowser expects to apply for funding to survey other parts of the Kenai Mountains, the location of the Skyline Trail where the new species were found. Bower will try to determine "if these are common arthropods that have been just overlooked or if this mountain is special and needs to be protected." ◆

# Strategic Thinking Dominates Regional Friends Workshops

**Three Regional** Friends Workshops – scheduled across the country from February through April – are giving many Friends organizations an introduction to the Refuge System's draft Strategic Plan and a framework by which to think strategically about specific contributions they can make to the Refuge System and their refuge. Refuge managers are joining their Friends members at each of the Workshops, held in three regions: the Northwest, California-Nevada Operations, and the Southwest.

"This is a great opportunity to not only meet and learn with your counterparts from other communities and Friends organizations but also to gain a firsthand perspective how you might use the concepts and approach of the National Wildlife Refuge System's draft Strategic Plan to help your own refuge," U.S. Fish and Wildlife Service Director H. Dale Hall wrote to all Friends members attending.

"Just how do the Strategic Plan and other planning documents help your refuge and your Friends organization? That is just what you have the opportunity to consider and discuss during these workshops and for months and years to come," Hall continued.

Although regional Friends workshops have been held in years past, this year's workshops took a new approach, offering facilitated strategic planning sessions on wildlife and habitat, wildlife-dependent recreation, and maintenance. Friends members and their project leaders discussed how they could expand their capacity to support the Refuge System and their own wildlife refuge. A similar Regional Friends Workshop is anticipated in the Southeast in Fall 2006.

The National Wildlife Refuge Association, under a cooperative agreement with the Service, is partnering with the Refuge System in these forward-looking workshops. NWRA President Evan Hirsche and Desiree Sorenson-Groves, the Association's director of grassroots outreach, will lead Friends members in conceptualizing grassroots conservation projects they can implement in their own communities.

Emilyn Sheffield, chair of the Department of Recreation and Parks Management at California State University/Chico, detailed demographic trends during presentations at each of the Regional Workshops. Dr. Sheffield made a similar, well-received presentation during the National Friends in Action Conference in February 2005, highlighting the United States' dramatically changing age and ethnic composition.

The Regional Workshops also featured some traditional elements of such meetings. Friends attended concurrent sessions on such issues as managing books stores, increasing membership, strengthening boards of directors and establishing relationships with Congress. But some of the most vibrant discussions took place during the strategic thinking work sessions.

## Long-Term Vision

FWS Director Hall challenged Friends members to "take this time to talk about and think about a long-term vision for the Refuge System and your national wildlife refuge. Take the strategic planning process you started here and begin to apply the principles and approaches in your hometown.

"What you do for your local refuge and with your local Friends organization will help strengthen and preserve the National Wildlife Refuge System for future generations," he concluded. ◆

*Regional Friends workshops will include sessions on how to operate bookstores, as well as taking a new approach, offering facilitated strategic planning sessions on wildlife-dependent recreation, wildlife and habitat, and maintenance. (Steve Hillebrand/USFWS)*

# State Wildlife Plans: Crucial for Wildlife

**As of December 12, 2005,** the U.S. Fish and Wildlife Service has approved 17 of the 50 State Comprehensive Wildlife Conservation Plans required by Congress for states to receive continued funding under the State Wildlife Grant program. The remainder of the plans is under review by the National Advisory Acceptance Team, a joint federal-state team that reviews each plan to see if it meets the congressional requirements.

Genevieve LaRouche, grant management specialist with the Division of Federal Assistance, explains that State Wildlife Grant funding fills a crucial niche for species that have never received much attention or funding. The primary purpose of these funds is to address the habitat requirements of species in greatest conservation need to keep them from declining to the point of being listed under the Endangered Species Act. More than 1,000 species are currently listed as endangered or threatened. To get this important work done, states often partner with nonprofit organizations for help with technical expertise and funding.

So far, $400 million in State Wildlife Grants have been awarded. President Bush signed an appropriations bill in August 2005 that provides $68.5 million for such grants. To be eligible for this round of grants, states were required to submit comprehensive wildlife action plans.

The action plans were developed by state wildlife agencies, but as the International Association of Fish and Wildlife Agencies (IAFWA) puts it, "They were written as plans for each state's *wildlife* and not just for the wildlife agency." The plans identify a full range of actions from habitat conservation, management and restoration to research and monitoring. In partnership with the Service, IAFWA will be reviewing all the wildlife action plans to identify national issues, information needs and coordination opportunities. IAFWA expects to issue a national report in 2006 including focused papers on opportunities for action in specific areas.

In some states, refuge staff was actively involved in developing the state action plans. Joe McCauley, refuge manager at Rappahannock River National Wildlife Refuge in Virginia, was on the steering committee for Virginia's plan along with Karen Mayne, Ecological Services project leader. Biologists from other refuges in Virginia participated in various species work groups.

Staff from several refuges participated in the state working group for Maine. Linda Welch, a biologist at Maine Coastal Islands National Wildlife Refuge, developed an extensive table of existing conservation plans and programs for migratory birds. Welch's information was not only used in generating the migratory bird section of the Maine plan, but also in creating similar tables for mammals and fish. In Illinois, the Comprehensive Conservation Plans of several refuges were used to develop the state plan.

*Fifty states and six territories have submitted wildlife conservation plans that will enable them to share $68.5 million in 2006 State Wildlife Grants. The Virginia plan calls for conserving habitat for the peregrine falcon. (USFWS)*

Congress mandated eight elements in each state's wildlife conservation strategy, including information on the distribution of wildlife species; locations and condition of key habitats; problems with these habitats; proposed conservation actions; proposed monitoring plans for both species and habitats; procedures to review strategy; plans to coordinate with federal, state and local agencies as well as Indian tribes; and plans for broad public participation in developing and implementing the plans.

## Read Your State Plan

Whether or not a refuge participated in developing the plan, refuges have an opportunity to contribute revisions or updates and participate in its implementation. Background information as well as regular updates and information on congressional funding, state funding and the complete text of each state's action plan are available at www.teaming.com.

Larouche urges refuge staff to look at their state's plan to see where connections can be made between priorities in the state plan and the mission of a refuge. Are the refuge and the state plan working to conserve the same key habitats or species? Can the refuge contribute to the state plan even as it meets its own mission? Alternatively, does the state plan leave something out?

As the plans enter the implementation phase, Larouche notes, "Refuge staff has an opportunity to build stronger relationships with their state partners by working toward shared goals." ◆

# No Boundaries: Outdoor Adventures for All Abilities

## *Wilderness Inquiry Anxious to Work with Refuges*

*Most Wilderness Inquiry trips are on the water, which director Greg Lais says is a great equalizer for people with impaired mobility. A person with a wheelchair can paddle but will probably need to be stabilized with a special seat inside a canoe. (Greg Lais/WI)*

**"Grizzly bears don't care** if you are blind or have multiple sclerosis," says Greg Lais as he discusses the companionship that builds in the wilderness between people with and without physical disabilities. Lais is founder and director of Wilderness Inquiry (WI), an outfitter that seeks to use the outdoors to help people look at each other as peers not as "the disabled." WI leads adventures around the world, from the Arctic National Wildlife Refuge in Alaska to the Everglades in Florida plus Kenya, Norway and Australia.

Most of the trips are on the water, which Lais says is a great equalizer for people with impaired mobility. He remembers being in a canoe in Norway with a woman who was a wheelchair racer – and she did all the paddling. "For a lot of people it's kind of an epiphany," says Lais, "they come back saying 'I never realized people with disabilities could do this.'"

The 28-day trip along the Porcupine River bordering the Arctic Refuge has included adventurers who are paraplegic, blind and have multiple sclerosis. Campers need help getting into a canoe and their wheelchairs have balloon tires or knobby tires to move more easily on river banks. WI has also learned a few tricks: the same orange plastic mesh snow fences used in the organization's home state of Minnesota can be spread on the sand to keep wheelchairs from sinking.

"You don't have to destroy a habitat to make an area accessible," says Lais, "We don't want to alter the fundamental nature of the experience." The tricks often come from campers themselves, including the kids. One family came with twins, one of whom had cerebral palsy and used a wheelchair. During a trip to Yellowstone National Park, the kids wanted to turn Dirk's wheelchair into a dogsled. Dirk became the musher and all the other kids became the dogs pulling his wheelchair.

Wilderness Inquiry renewed a Memorandum of Understanding originally signed in 1997. The MOU establishes a framework of cooperation among the U.S. Fish and Wildlife Service, Forest Service, Bureau of Land Management, Bureau of Reclamation, National Park Service, Corps of Engineers and WI to increase opportunities for people of all abilities to enjoy federal recreation programs and facilities. For national wildlife refuges, it's an opportunity to work with WI staff on accessible trips or staff training.

WI's Universal Program training helps organizations include people of all abilities in their programs. Lais outlined several key aspects of the training:

- Technical information about particular disabilities: People who have multiple sclerosis, for example, are sensitive to heat and trips to exceptionally hot climates would not be recommended, though many other adventures would be entirely appropriate.
- Logistics of gear: A person in a wheelchair can paddle but will probably need to be stabilized with a special seat inside a canoe to compensate for weakened trunk muscles.
- Group dynamics: One or two individuals with significant disabilities can easily be integrated into a group; if the group is half and half, however, there is much less social interaction across abilities.

Wilderness Inquiry is eager to work with individual refuges to train staff, offer new programs (from three hours to 28 days), or evaluate facilities for accessibility. In addition to the wide range of adventures for people of any ability, WI also has segregated trips for young people with disabilities that hinder their ability to interact socially. There is also a Gateway to Adventure for people with more severe developmental disabilities and adventures that train high school students to serve as mentors and friends to youth with developmental disabilities.

Greg Lais' journal of a canoe trip on the Big Salmon River in the Yukon Territory of Canada is a perfect example of the Wilderness Inquiry experience: "Among the 10 participants were four persons who would be considered by some to be physically disabled. Dan Ramier, 25, has a spinal cord injury; Roger, 62, had polio as a teenager that left him with limited function below the waist; John, 25, has a closed head injury; and Darlene, 24, is blind. We were alone in the vast Yukon wilderness, and each member of the group found their place on the team. People were simply accepted for who they are." ◆

# *Around* the Refuge System

## Maine

The Maine Department of Inland Fisheries and Wildlife has recognized Moosehorn National Wildlife Refuge as a Landowner of the Year for working cooperatively with snowmobilers. Part of Maine's Interconnected Trail System runs through the refuge to Canada. Refuge Manager Bill Kolodnicki says snowmobilers and refuge staff have been working together for several years to direct snowmobile use to areas of the refuge that are safe and minimize conflicts with other users, especially cross country skiers. Kolodnicki says the Sunrise Snowmobilers Club grooms trails for cross-country skiers and posts stop signs, speed limits and caution indicators for skiers and snowmobilers. There is even a club member serving on the Friends of Moosehorn Board.

"It's a great partnership," says Kolodnicki, adding that the Friends organization is providing hot chocolate and a place for snowmobilers to warm up and stretch during this season's winter festival.

## Alaska

A new database launched in October 2005 has greatly improved archiving and estimating survival rates of the threatened Steller's eider population on Izembek National Wildlife Refuge. The new system, developed by a graduate student from the University of Washington, incorporates 44 years of banding data on the small diving ducks. Until the database was created, information was scattered on dozens of separate Excel spreadsheets and an outdated database, making analysis extremely difficult. Joel Reynolds, a regional refuge biometrician, says the database will enable scientists to answer such questions as how many banded birds have been seen every year at Izembek Refuge, where else the birds are showing up and how long they are surviving. Eventually, Reynolds wants to put the database online so other refuges can add their information about these ducks and track where else the banded birds are showing up.

Steller's eiders breed in northern and western Alaska and northern Russia, but have nearly disappeared from most other nesting areas in Alaska. The worldwide population of Steller's eiders may have decreased by as much as 50 percent over the last 30 years. Refuge biologists will use the new database to generate the first updated estimates of the birds' survival rates since 1997. Reynolds says it has already generated many productive conversations about monitoring and, ultimately, reviving the species between refuge staff and USGS.

## Arizona

Imperial National Wildlife Refuge has a new observation tower that offers a spectacular view of the lower Colorado River Valley, from lush green vegetation in the valley to volcanic barren desert mountains in the foreground. "It fits into the landscape well," says Visitor Services Manager Sue McDonald. "Although it is only 12 feet high, it feels like 20 feet because the platform is located on the edge of a hill overlooking the refuge and the Colorado River Valley. The platform is big enough for an entire school class and it is also accessible to people with physical disabilities. McDonald says one visitor in a wheelchair "thanked her immensely for providing him the opportunity to be 12 feet up in the air to view the refuge." Nearly 200 visitors came to the dedication of the tower last fall, when the refuge's 1.3-mile Painted Desert Trail was also dedicated as a National Recreation Trail.

## Georgia

The Greater Okefenokee Association of Landowners (GOAL), which includes Okefenokee National Wildlife Refuge, has been honored with the Pulaski Award from the Department of Agriculture. The Pulaski is a fire tool that has become the symbol of wildland firefighters. The award honors excellence in firefighting, fire safety and interagency cooperation. GOAL was nominated for its outstanding group performance in managing and suppressing the Blackjack Bay Complex Fires in 2001-2002 and the Impassable Bay and Road 1 Fires in 2004. Because of cooperation among GOAL members during the fires, damage to habitat, structures and commercial property was minimized.

GOAL was also praised for developing partnerships and communication tools that support Federal Wildland Fire Policy. Staff at Okefenokee Refuge, for example, regularly consult with fellow GOAL

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*Leonard LeCaptain, exotic plant management liaison at Imperial National Wildlife Refuge, joins visitors on a observation platform overlooking the Colorado River Valley. The new platform is accessible to visitors in wheelchairs. (Shawn Wofford)*

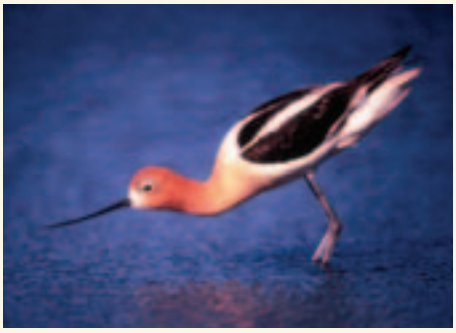
# Around the Refuge System

**Around** – *from pg 7*

partners when planning prescribed burn activities. The 30 partners of GOAL include private landowners, commercial timber companies, manufacturing companies, two state forests and two federal agencies.

## Hawaii

An American avocet has been spotted for the first time in Hawaii at Kealia Pond National Wildlife Refuge. This shorebird normally inhabits the western United States and migrates to the California and southeastern U.S. coastlines for the winter. Wildlife biologist Mike Nishimoto at Kealia Pond Refuge says the single avocet is being included in biweekly bird counts on the refuge and seems to be thriving. The *Maui News* covered the bird's arrival, quoting Refuge Manager Glynnis Nakai who said, "There's always an air of anticipation each winter as we wait to see what migratory birds will make their way to Hawaii."



*The American avocet has been seen for the first time in Hawaii at Kealia Pond National Wildlife Refuge. (USFWS)*

## Alaska

Perched on the coast of the Arctic Ocean and the edge of the Arctic National Wildlife Refuge, the village of Kaktovik is home to generations of Inupiaq people who share their lives with polar bears, especially in the early fall before the bears move onto the pack ice to hunt seals. Knowing that "hungry bears are dangerous bears," polar bear biologist Susi Miller with the USFWS Marine Mammals Management program and Arctic Refuge Visitor Services Coordinator Jennifer Reed elevated awareness of the potential danger. They worked closely with the Inupiaq community by hosting a coloring contest.


*Children in the Inupiaq village of Kaktovik, on the edge of Arctic National Wildlife Refuge, colored this polar bear safety poster designed by a local artist. The winning posters are displayed around the village. (USFWS)*

Children from pre-school through eighth grade were asked to color a polar bear safety poster designed by refuge staff using artwork created by Flora Rexford, an artist from Kaktovik. The school principal and village elders judged the entries. Winners received awards and the posters are hanging in the community center, local offices, convenience store and, of course, on the refrigerators of the young students who colored them.

## Oregon

More than 1,000 bald eagles, the largest concentration in the lower 48 states, are spending their winter in the Klamath Basin, the nation's number 10 "birding hot spot," according to *Wild Bird* magazine. Having traveled from as far away as the Northwest Territories in Canada and Glacier National Park in Montana, the eagles scavenge for waterfowl during the day and find sheltered roosts at night in the Klamath Basin, along the California-Oregon border. The eagles feed on the marshes of the Lower Klamath and Tule Lake National Wildlife Refuges, which are part of the Klamath Basin National Wildlife Refuge Complex.

From December to mid-March, the most spectacular viewing is during the dawn "fly-outs" of large numbers of bald eagles from their night roosts in Bear Valley as they head to the marshes to feed. The Klamath Basin's annual Winter Wings Festival celebrates these magnificent eagles, as well as more than 100 other bird species that winter in the Klamath Basin. The four-day festival in February features fly-outs to see the eagles, tours of the Klamath Basin refuges, workshops on citizen science, displays, and activities.

# "Wonderful Advocate for the Prairie…"

**Prairies are more often** the backdrop for children's stories rather than the main subject of one. Yet, Sneed B. Collard III, a biologist turned children's author, has put prairies front and center in *The Prairie Builders*, which features the prairie restoration efforts at Neal Smith National Wildlife Refuge in Iowa.

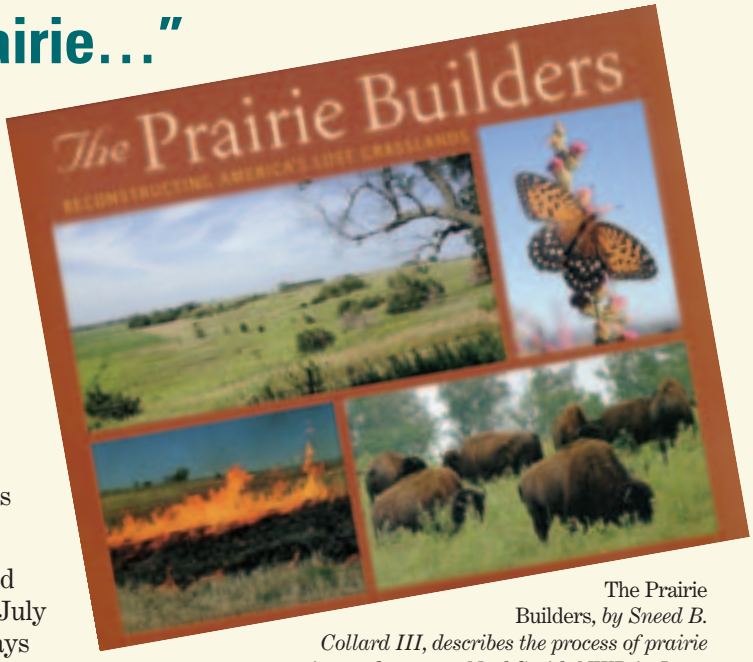
*The Prairie Builders* has just won a prestigious new award from the American Association for the Advancement of Science. The AAAS/Subaru SB&F (*Science Books and Films*) Prize for Excellence in Science Books celebrates outstanding science writing and illustration for children and young adults. *The Prairie Builders*, published in 2005 by Houghton Mifflin for readers age eight and above, has also earned a long list of additional accolades, including NSTA/CBC Outstanding Science Trade Book, School Library Journal's Best Books list 2005 and Junior Library Guild selection.

All of Collard's science books together have also earned him the 2006 Washington Post - Children's Book Guild Nonfiction Award. He has written about everything from daytime raptors to lizard science, a series about biologists at work and *Acting for Nature: What Young People around the World are Doing to Protect the Environment*. The Guild says Collard's books cover "critical issues of ecology, habitats and animal behavior with insight and humor, appealing to both early and middle grade readers."

Collard studied marine biology at the University of California/Berkeley and also earned a master's degree in scientific instrumentation. He worked for a short time with California Fish and Game but now uses his science background to write full-time for children. He met Diane Debinski with Iowa State University, while writing a children's picture book called *Butterfly Count* and then learned about her efforts to re-introduce the Regal Fritillary butterfly to the Neal Smith Refuge.

Collard quickly became fascinated with prairies, especially the "enormity of trying to create an ecosystem from scratch." Less than one-tenth of one percent of Iowa's original prairie remains and Pauline Drobney is out to change that. Drobney, Land Management and Research Demonstration biologist at the refuge, is leading an effort to re-create the Iowa's tallgrass prairie.

Neal Smith Refuge hosted Collard for two weeks in July 2003. He spent several days with Drobney, learning about the details and significance of the project as well as such challenges as invasive species.




The Prairie Builders, *by Sneed B. Collard III, describes the process of prairie restoration underway at Neal Smith NWR in Iowa. The book has won the 2006 AAAS/Subaru SB&F (Science Books and Films) Prize for Excellence in Science Books. (Sneed B. Collard III)*

## Small Success in Daily Life

*The Prairie Builders* carefully describes the disappointments, the thinking and re-thinking, and the accumulation of small successes that make up the daily life of a research biologist. Collard follows the prairie restoration project from the establishment of the refuge in 1989 at the impetus of then-Congressman Neal Smith to the reintroduction of bison and butterflies to the important role of fire in nourishing the prairie ecosystem. There is a photo of children and adults literally dancing native prairie seed into the ground during the annual "Sow Your Wild Oats Day."

Collard's brilliant color photography brings alive the flowers and grasses and wildlife of the prairie. Collard describes traditional tribal uses for many plants, including the coneflower, used to treat sore throats and other inflammation and known to many Americans now as Echinacea.

*The Prairie Builders* has been a big hit at the refuge bookstore, says Scott Ford, supervisory park ranger at Neal Smith Refuge. "Sneed is a wonderful advocate of the prairie." Collard, who wanted to "visually impress on people what a remarkable ecosystem a prairie is," says several teachers have told him they "never really understood what all the prairie fuss was about before opening the book. That's very gratifying."

Believing the story of the prairie can serve as a model for American thinking about healing the earth, Collard says "an important point in the book is that a reconstructed ecosystem will never be as good as a protected/preserved one, and that's also something I wanted to emphasize to readers. "

Collard is always looking for "anything cool and unusual that involves a good research or conservation story." He is especially interested in story ideas involving birds like honeycreepers, sandhill cranes or trumpeter swans. Feel free to send ideas to him at collard@bigsky.net. ◆

# FOCUS ...On Incident Command


*In 2004, the National Response Plan identified the Incident Command System as the "combination of facilities, equipment, personnel, procedures, and communications equipment." Operators are central to the work. (USFWS)*

## The Incident Command System (ICS) – Then and Now

*By Art Latterell*

**A series of wildfires** in California in 1970 took 16 lives, destroyed 700 structures and burned 500,000 acres. It was too much for existing response systems. Emergency managers identified numerous challenges:

- Fire spread in the wildlands through multiple communities within hours, with no respect for jurisdictional boundaries between cities and suburbs.
- Each community had its own police, fire and public works organization with its own chain of command. Coordination among responders was difficult at best and was magnified by lack of common radio communications frequencies and capabilities.
- Responders from the various entities used different codes or words for the same information, piece of fire apparatus, aircraft, fireline supervisor, etc.

## What is Mobilization?

*By Rod Bloms*

**Mobilization is the moment** when all the planning and coordination of the Incident Command System begins to bear fruit.

Federal, state, local and tribal organizations begin activating, assembling and transporting all the resources needed to respond to an incident. The success of the operation will depend on the ability to mobilize and effectively utilize multiple resources.

The National Interagency Coordination Center (NICC) coordinates the mobilization of resources for wildland fire and other incidents throughout the United States. When a fire is reported, the local agency and its firefighting partners respond. The response to a fire or other type of incident is coordinated at the local level by an interagency dispatch center; every refuge is connected to one of these dispatch centers. If the fire grows, the agency can ask for help from its geographic area.

When a geographic area has exhausted all its resources, it can turn to NICC for help in locating whatever is needed – from air tankers and radios to firefighting crews and incident management teams. These resources must be organized in a way that is understood by everyone within a written or verbal plan, known as an Incident Action Plan (IAP). The IAP contains general objectives reflecting the overall strategy for managing an incident.

### Creating the Incident Action Plan

One key for the success of the Incident Command System (ICS) is this formal, common planning process that occurs on larger incidents, involving all jurisdictional agencies and resources. A typical planning meeting for a complex incident involves the Incident Commander, the Section Chiefs for Operations, Planning, Logistics, and Finance, and key staff such as the Resource and Situation Unit Leaders, as well as specialists and agency representatives as needed.

This group decides which objectives must be met during each operational period. "Protect life and safety of firefighters and the public" or "manage incident costs within identified constraints" could apply

- Getting reliable incident information to decision makers and the public was a problem because there was no coordination of information among the various responders.
- As several agencies had on-scene jurisdictional or functional responsibilities, the lines of authority were unclear and often too many people were reporting to a single supervisor.
- There was no structure to coordinate joint planning among the responding agencies.
- Incident management objectives were often unclear or unspecified, which resulted in uncoordinated tactics and independent action, compromising firefighter and public safety.

Congress took note of these issues and assigned the Forest Service to find a solution. A cooperative interagency task force of local, state and federal representatives known as FIRESCOPE (Firefighting Resources of California Organized for Potential Emergencies) set about developing an emergency management system.

Early in the process, four essential requirements became clear: The system had to be organizationally flexible; adaptable for routine, day-to-day situations as well as for major emergencies; sufficiently standardized that personnel from various agencies and diverse geographic locations could rapidly meld into a common management structure; and cost effective.

After years of development and extensive field testing for wildfire response, the Incident Command System was created. It was obvious to the task force and others that the characteristics of these fire incidents were similar to other kinds of crises in which unplanned events rapidly grow in size and complexity to multi-jurisdictional incidents, threatening loss of life and property, challenging the ability of personnel to respond and coordinate safe operations, and resulting in huge containment and control costs.

In 1980, the original ICS was incorporated into a national program called the National Interagency Incident Management System (NIIMS) sponsored by federal wildland fire management

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throughout an incident. Others are specific and tactical, such as "evacuate the Short Canyon subdivision by noon," "stop fire spread east of the Interstate," "search grid areas A1 to G10 with dog teams," or "expand the incident organization to include managing four new fires."

Specialists at the planning meeting provide information on weather and available resources. Resource information is key since all resources must be combined into one plan and one operation, with common communications. The Operations Section Chief assigns supervisors, task forces, strike teams and other resources to specific parts of the incident. Refuge staff mobilized for a particular incident would report to one of these supervisors to receive specific assignments.

After a meeting that typically lasts less than an hour, the planning staff knows what it needs to produce an Incident Action Plan on ICS forms. The forms are often pre-loaded in computers that include maps of the incident area and its surroundings. Incident Action Plans are prepared for specific time or operational periods, often no longer than 24 hours and sometimes only two to four hours.

Planning for incident demobilization is often overlooked. As incidents begin to wind down, all the participants will be anxious to return to their home agency. Demobilization planning helps to assure a controlled, safe, efficient and cost-effective demobilization process.

To be effective, demobilization planning must begin early in the incident. Each section of the ICS organization must be involved. Release priorities must first be determined by all elements of the organization. This is essentially a decision on what resources must be retained, and what resources can be released. ◆

*Rod Bloms is the national fire operations and safety specialist in Boise, Idaho, for the Service.*

*During hurricanes Rita and Katrina in 2005, the planning process of ICS became critical (USFWS)*

# FOCUS ...On Incident Command

## ICS in Action

*By Bill Molumby*

**The importance of having** a management system in place is quickly realized when you don't have one. When we are pressed for time, with multiple organizations and people requiring information – many of whom are not familiar with our organizational structure – it's easy to become overwhelmed. Having a system in place that everyone understands at a practical level is the first step toward success.

The true test of ICS is its application in real life, emergency situations. There is no question that ICS has been field tested with resounding success on wildland fires over the last 30 years. But how does it work when applied to non-traditional emergencies like last year's hurricanes?

I am the Fire Management Officer for the San Diego National Wildlife Refuge Complex, but I am also the Incident Commander for the California Interagency Incident Management Team 2 (CIIMT 2). These teams are organized, pre-designated groups that have worked together for several years.

About a dozen of these teams were mobilized during the last hurricane season. CIIMT2 was asked to establish a base camp and provide logistical support for DMORT. My only question was, "What's DMORT?" You can see where terminology quickly becomes important!

DMORT is the Disaster Mortuary Response Team, a group of specialists assembled by FEMA to identify human remains and facilitate their return to either local jurisdictions or family members. The DMORT organization was not ICS-savvy, but our California team was soon able to categorize the DMORT work, build an organizational chart, and assist with work schedules and personnel. This in turn enabled us to provide

*The basic Incident Command System is used in a wide range of incidents, from wildlife fires, multi-jurisdictional disasters, search and rescue missions and even such planned events as parades and concerts. Various levels of training are available to incident responders. (Bill Molumby/USFWS)*

## ICS: Learning How it All Works

*By Kevin Conn*

**One benefit** of the Incident Command System (ICS) is that as the incident grows in complexity, the organizational structure can also grow to match the demands of each incident. The basic ICS structure is used in incidents involving:

- Wildland fires, HAZMAT and multi-casualty incidents
- Multi-jurisdiction and multi-agency disasters
- Wide-area search and rescue missions
- Pest eradication programs
- Oil spill response and recovery incidents
- Single and multi-agency law enforcement incidents
- Air, rail, water or ground transportation accidents
- Planned events, such as celebrations, parades and concerts
- Private sector emergency management programs
- State or local major natural hazards management

DMORT with food, shelter and other logistical support.

Our CIIMT 2 team was also asked to support the Urban Search and Rescue operation in New Orleans. Federal Emergency Management Agency (FEMA) teams, the U.S. Fish and Wildlife Service and Coast Guard had all been trained in ICS. We spoke the same language, so communications, planning and logistics were easily integrated and coordinated.

Any assisting agencies not familiar with ICS (82nd Airborn, New Orleans Police Department, National Guard) were quickly integrated into the command organization. The team did this by scheduling daily planning meetings in which all organizations could participate and air their concerns.

The biggest problem was simply the magnitude of the incident – including the geographic area and the number of people and resources affected. ICS normally builds from small to large, gradually adding resources and staff. Hurricane Katrina was huge at the very outset.

A key function of the Incident Management Teams during Katrina was simply providing sleeping facilities, food and showers so responders did not have to worry about necessities. Many of these teams were also designated by FEMA to distribute water, ice and food to evacuees.

*Over the past 30 years, the Incident Command System had been field tested with resounding success on wildland fires. Last year's hurricanes tested its application to non-traditional emergencies. (USFWS)*

What did these experiences tell me about ICS? It demonstrated that ICS can be used in any situation to facilitate problem assessment, develop a plan of action, assist with information exchange, and implement a course of action. To the extent possible, refuge managers and project leaders should have at least basic training in ICS and even go to an incident to see the system in action. ◆

*Bill Molumby is Fire Management Officer for the San Diego National Wildlife Refuge Complex.*

As incident responders – both emergency and non-emergency – progress through the organizational chain of command, various levels of training are available.

ICS Orientation (I-100) is designed to help students learn the principles of the Incident Command System and to briefly acquaint them with the basic ICS structure and terminology. This is a self-study course and appropriate for all refuge staff who could be involved in emergency operations.

Basic and Intermediate ICS (I-200 and I-300) cover incident facilities and resources, and common responsibilities associated with ICS assignments. The Intermediate course also covers air operations.

By the I-400 level Advanced ICS course, students are learning about the operations of large single-agency and complex multi-agency/multi-jurisdictional incident responses. Presented in an intensely participative workshop environment, this course focuses on Area Command and staff issues, as well as the planning, logistical and fiscal considerations associated with complex incident management and interagency coordination. Students in this course are required to participate in simulations that place them in stressful situations.

After students understand how to work within an ICS, they can take Multi-Agency Coordination (I-401) to learn how to create an effective Multi-Agency Coordination System compatible with the Incident Command System. They will know how to sort out Area Command, Unified Command, Multi-agency Coordination Systems, and jurisdictional Emergency Operations Centers (EOCs).

At the executive level, there is also an ICS orientation course for administrators and policy makers who are normally not part of an on-scene ICS organization, but they are often establishing or implementing policies that affect the ICS.

The proven success of the Incident Command System has made it increasingly popular among agencies responsible for both emergency and non-emergency incident coordination.

Training provides consistency and assures that individuals at similar levels in any incident organization, regardless of agency affiliation or type of incident, possess a similar set of skills and terminology. For additional information regarding the ICS and its use, go to http://www.nimsonline.com/. To see a schedule of courses and register, go to http://www.nationalfiretraining.net/. ◆

*Kevin Conn is acting assistant training specialist for the Service's NIFC.*

# World Wilderness Congress Brought New Calls for Partnership

*By Nancy Roeper*

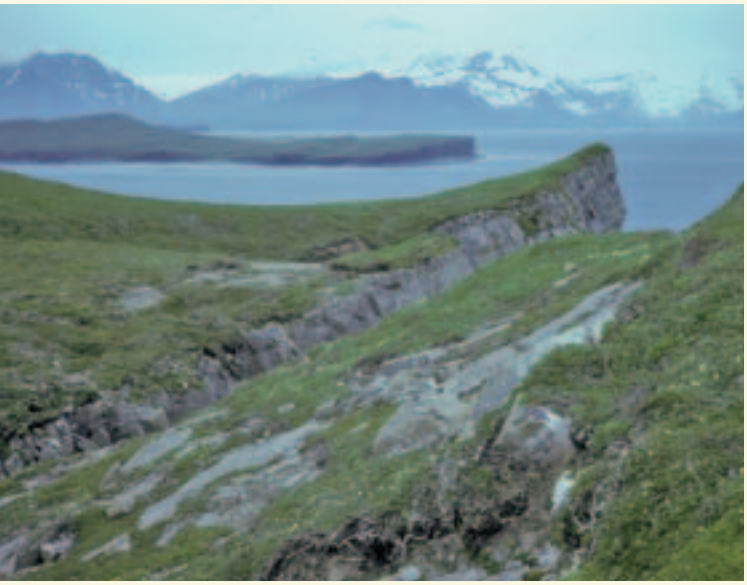
**What brought together** an Athabascan elder, a former Secretary of the Interior, the president of Conservation International and the vice president of a cement company? The 8th World Wilderness Congress, the oldest public international environmental forum in the world. More than two dozen employees of the National Wildlife Refuge System joined over 1,200 delegates from about 60 nations at the Congress, held September 30-October 6, 2005, in Anchorage. Nineteen Refuge System employees presented papers or posters, moderated sessions or organized workshops.

Launched by The WILD Foundation in 1977, the Congress draws senior-level representatives from government, the private sector, native peoples, non-governmental organizations and academia into open and balanced debate on complex wilderness and wildlands issues in order to find practical conservation outcomes. This year's Congress, with a theme of "Wilderness, Wildlands, and People – A Partnership for the Planet," focused on how to balance wilderness and wildlands conservation with the needs of contemporary and traditional societies. Although global in scope, the Congress focused on Alaska, the Russian Far East, Canada and the North Pacific.

The Congress opened with a traditional Tlingit dance procession and a welcome by Vance Martin, president of the WILD Foundation and the genius behind the Congress. Ian Player, a seminal figure in international conservation who established the first World Wilderness Congress in Johannesburg in 1977, was the keynote speaker. Dr. Player believes that wilderness was the "archetypal home" for mankind. He believes that "we face enormous challenges in the field of conservation and…that the wilderness experience and the spiritual awareness that can grow out of it are the key to our future." Several discussions could well bear directly on the Refuge System's future in coming years:

The first-ever Global Wilderness Seminar for Government Agencies, attended by more than 180 participants, provided a forum to share science-based applications and help improve on-the-ground wildland management. Participants saw firsthand some of Alaska's finest wildlands, including the Chugach and Kenai Mountains, Resurrection Bay and Bear Glacier.

*Ian Player, a seminal figure in international conservation who established the first World Wilderness Congress in Johannesburg in 1977, was the keynote speaker at the 8th World Wilderness Congress. Dr. Player believes that wilderness was the "archetypal home" for mankind. (USFWS)*



*Participants at the 8th World Wilderness Congress met in Anchorage last fall. They saw firsthand some of Alaska's finest wildlands, including the Chugach and Kenai Mountains, Resurrection Bay and Bear Glacier. (USFWS)*

Several speakers discussed some of their country's most pressing wildland resource conservation challenges. Vicki Sanahatien, from Parks Canada, reported that land claim agreements between aboriginal people and the Canadian government have created processes for sharing power, economic development and decision-making. Aboriginal people can use these agreements to ensure that the land and sea are used in ways that protect wildlands, yet also support their ongoing use. When people remain connected with their aboriginal homelands, they often become strong proponents of their continued protection.

The Congress endorsed holding future government seminars to further international coordination and cooperation on wildland protection and to develop a global network to foster international communication and learning about wilderness stewardship. Other developments from the Congress included:

- Cemex, one of the world's largest producers of cement, announced designation of the El Carmen Wilderness Area as critical habitat owned by the corporation in northern Mexico. In cooperation with their

*continued pg 16*

# The Reality of Managing Wilderness Values: Charles M. Russell National Wildlife Refuge

*By Steve Henry*

**Permanent roads** don't belong in the wilderness. The Wilderness Act recognizes this and doesn't allow permanent roads in designated or proposed wilderness areas. It all seems clear, simple, logical – until it has to be implemented in real time on a real refuge. These challenges were the subject of my workshop at World Wilderness Conference.

President Theodore Roosevelt initially established what became the Charles M. Russell National Wildlife Refuge (CMR) as Fort Peck Game Range in 1936 to protect pronghorn, sharp-tail grouse, and other native wildlife species in Montana. In 1967, a large inholding within CMR was acquired and this became the UL Bend National Wildlife Refuge – a "refuge within a refuge." In 1974, Congress designated over 20,000 acres of UL Bend Refuge as wilderness. At the same time, Congress deferred a decision about an additional 160,000 acres proposed as wilderness.

Both proposed and designated wilderness at CMR encompass native prairie, forested coulees, river bottoms, and badlands - valuable habitat for the black-footed ferret, golden eagle, mule deer, elk, bighorn sheep, pronghorn, coyote, bobcat, sage and sharp-tailed grouse, and numerous other species.

The Refuge System manages proposed and designated wilderness to retain its wilderness values. The refuge had always allowed recreation in proposed wilderness, just as in designated wilderness. However, unlike designated wilderness, old roads that already existed in proposed wilderness areas were retained.

When a local wilderness advocacy group pointed out that permanent roads should not be allowed in proposed wilderness, refuge staff studied the issue. They found that even after closing roads in proposed wilderness, 98 percent of the refuge would be within two miles of legal, motorized access and more than 650 miles of non-wilderness roads would remain open to public use. While there was some local resistance to the road closures, there was also strong regional support.

In 2002, the refuge closed 44 miles of roads in the proposed wilderness. Unfortunately, in a stroke of bad timing, the roads were closed just before the start of the hunting season when these roads receive their highest use. There was strong initial opposition by a group of sportsmen accustomed to driving in proposed wilderness to access favorite hunting and fishing sites.

Refuge staff worked with the public to educate them about Refuge System policy and the need to protect the wilderness values of the refuge. Over time, the refuge discovered a constituency of sportsmen who actively seek out areas with no motorized access so that they can enjoy a true wilderness experience. Some have expressed appreciation for the refuge's determination to make a tough decision in favor of wilderness protection.

Closing roads within proposed wilderness was an unpopular decision for some refuge visitors but, in the end, it has allowed CMR to better protect wilderness resources while also providing new recreational opportunities. Today, a growing segment of the public comes to the refuge to enjoy the solitude and unconfined recreation that wilderness areas provide, from hunting and fishing to observing wildlife and simply enjoying the outdoors. ◆

*Steve Henry is an invasive species strike team leader in the Mountain-Prairie Region and a former Charles M. Russell National Wildlife Refuge ecologist.*

*Initially established as Fort Peck Game Range in 1936, the Charles M. Russell National Wildlife Refuge in Montana was created to protect pronghorn, sharp-tail grouse and other native wildlife species. In 2002, the refuge closed 44 miles of roads in a proposed wilderness. (USFWS)*

# Marine Wilderness Was Also A Focus

*By Nancy Roeper*

**How do you encourage** the public to enjoy wilderness that is "closed to the public?" How do you manage wilderness areas that cross multiple boundaries? How do you get rid of invasive species that are wreaking havoc with the wilderness?

Those challenges were among the issues raised at one of the sessions of the World Wilderness Congress. Thirty-three of the 169 coastal and ocean refuges in the National Wildlife Refuge System contain designated wilderness. Most of these refuge marine wilderness areas include islands, which pose unique management challenges.

For example, 10 of the island wilderness areas managed by the U.S. Fish and Wildlife Service are closed to public access to protect sensitive wildlife and their habitats. Is that the same as saying these areas are closed to public "use and enjoyment as wilderness?" Ask the thousands of visitors to the "closed" Oregon Islands Wilderness and Three Arch Rocks Wilderness along the Oregon coast.

These two highly scenic wilderness areas encompass 1,852 rocks, reefs and islands scattered along 320 miles of the coastline. They support more than one million nesting seabirds, 25,000 seals and sea lions, and threatened Steller sea lions. All of these animals are extremely sensitive to human presence, often fleeing the sanctuary of the rocks and islands when disturbed. This can result in the loss of eggs and/or young or complete colony abandonment.

*Oregon Islands Wilderness and Three Arch Rocks Wilderness in the Oregon Coast National Wildlife Refuge Complex encompass 1,852 rocks, reefs and islands scattered along 320 miles of the coastline. They support more than one million nesting seabirds, 25,000 seals and sea lions, and threatened Steller sea lions. (USFWS)*

Many of the islands are riddled with seabird nesting burrows of species such as Leach's storm-petrels and tufted puffins. Walking on the islands can be especially damaging, causing burrow collapse, bird mortality, and habitat destruction.

## Invite the Public To Learn

So how does Roy Lowe, refuge manager of the Oregon Coast National Wildlife Refuge Complex and his staff allow the public to enjoy the wilderness? They invite people to learn about the sensitivity of the resources and to appreciate the wilderness islands from afar. They have worked with Friends organizations at strategic locations to educate the public and keep them from trespassing into the closed wilderness area; constructed parking areas with observation decks and overlooks, including some with permanently mounted, powerful telescopes; and produced high-quality interpretive panels, brochures and posters.

Volunteers staff high visitation areas to interpret and protect the resources, and Lowe works with local, regional and national film crews and reporters to educate the public through television and print media.

As Lowe says, "Once the public understands our reasons for closing these areas, they support us and often become quite protective of 'their' islands and wildlife, by explaining to others the need for enjoying the wilderness from a distance."

## Alaska Maritime National Wildlife Refuge

On the 4.5-million-acre Alaska Maritime National Wildlife Refuge, Refuge Manager Greg Siekaniec focuses on a different challenge. Refuge staff has been working to remove exotic species. Some 40 million seabirds representing 30 species nest on the refuge's remote islands, and thousands of marine mammals come ashore for breeding, pup-rearing and hauling out.

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partners, Cemex is creating a wilderness management plan as part of the new El Carmen-Big Bend Conservation Corridor Initiative, which affects as much as 500,000 acres, including private ranches, corporate land and government land on both sides of the Mexico/U.S. border.

- Forty of the world's finest conservation photographers, whose work has been featured in *National Geographic*, *Natural History*, *Smithsonian*, *Audubon* and *BBC Wildlife*, initiated the International League of Conservation Photographers. More than 150 additional nature photographers agreed to work with them to identify how photographers can help protect wilderness, endangered species and threatened cultures.
- A delegation of more than 25 Russians met with U.S. federal land management agencies to enhance protected area management in Kamchatka and the Russian Far East. A collaborative network has been

Introduced foxes and shipwrecked rats have had a catastrophic impact on seabird populations, intertidal diversity and archeological remains. To date, biologists have removed foxes from more than one million acres on over 40 islands. Fox eradication has led to the successful rebound and delisting of the Aleutian Canada Goose.

Rats pose a grave threat to island ecosystems because they can remain forever. Prevention is the key. When a ship wrecks on a remote refuge island, a "rat spill" response team is assembled to prevent a rat introduction. The refuge is working with partners to develop methods for removing already established rat populations from islands. Says Siekaniec, "The ultimate goal of our invasive species program is to maintain biological integrity and restore the natural diversity of the land where we can."

## Partnerships Are Key

Complex jurisdictional issues are a common theme among many coastal refuges. "We have refuges embedded within National Park boundaries, acreages increasing or decreasing due to tidal action, leased state waters, and different boundaries on lands that came into the refuge at different times, and refuges coincident with navigable waters," says Donita Cotter, a wilderness specialist with the Refuge System.

The J.N. "Ding" Darling NWR successfully navigates the jurisdictional landscape. The refuge's wilderness area includes 2,825 acres of mangrove islands and refuge-owned navigable waters. Lush sea grasses, marine life and a tremendous sport fishery create a unique opportunity for those willing and able to "pole, paddle or float" through the area.

The area would not thrive without the partnership of the City of Sanibel and the Sanibel Captiva Conservation Foundation (SCCF). "The mission statements of the City and SCCF align with that of the refuge to create an incredible management opportunity for all involved," says Refuge Manager Rob Jess.

Though the refuge relies upon the Wilderness Act to protect its wilderness, the refuge eagerly works with other local and state agencies to demonstrate how non-federal lands and waters can be managed with local, yet similar policies. "Jurisdictional issues are not a concern to the partners," explains Jess, since "you'll never see a fence marking the various boundaries of the partners." ◆

*Nancy Roeper is the national wilderness coordinator for the National Wildlife Refuge System.*

*Oregon Coast National Wildlife Refuge Complex Manager Roy Lowe, shown in brown uniform in back, and his staff have worked with Friends organizations at strategic locations to educate the public and keep them from trespassing into the closed wilderness area. In this way, the public can enjoy the wilderness without harming it. (USFWS)*

established; the next meeting will be held in Spring 2006 in Kamchatka, Alaska.

- A consortium of organizations – including Conservation International, the National Oceanic and Atmospheric Administration and the Refuge System – unveiled a database and definitions to protect marine and freshwater systems as "wilderness" around the world. Protecting the wildness and natural condition of these systems could improve their conservation for future generations. ◆

*Nancy Roeper is the national wilderness coordinator for the National Wildlife Refuge System.*


*A student intern is banding a six-week-old duckling at McFadden National Wildlife Refuge. Biologists at McFadden are trying to explain and reverse a 20-year decline in the population of mottled ducks along the Texas Gulf Coast. (USFWS)*

# Seeing a Rebound for Disappearing Ducks

**Mottled ducks,** the only dabbling ducks that build their nests along the Gulf Coast, are also the only non-migrating dabbling ducks in the continental United States. Yet their population in one of their native states - Texas - has been steadily declining for nearly 20 years. McFadden National Wildlife Refuge Biologist Patrick Walther, for one, is trying to explain and reverse the decline.

In 1986, biologists at McFadden and Anahuac National Wildlife Refuges in Texas counted 23 pairs per square mile. In 2005, the number was down to fewer than four pairs per square mile. Loss of habitat is one key factor.

Mottled ducks live in coastal wetlands and marsh. In Louisiana, those marshes extend 40-50 miles inland and the Mottled duck population is thriving. But next door in Texas, the desirable marsh extends less than 25 miles inland at its widest point.

Further inland, land leveled for agricultural production – usually rice, which is now imported – was once Mottled duck habitat. Today, there are no pockets of water for nesting ducks. Instead, much of the land has been taken over either by housing developments or Chinese tallow, an exotic tree originally brought to the United States for production of candle wax.

## Then Came the Drought

The threats to the Mottled duck don't stop there. The salt water in the marshes used to be sweetened by the many small rivers that run through the region. As these were straightened over the years to improve drainage, the fresh water drained quickly without puddling or mixing with the tidal saltwater. The marshes remained too salty for the ducklings. In 2005, the problem was exacerbated by drought.

Hunting may also exacerbate the problem. "We know from banding that 25 percent of our ducks are taken in Louisiana," says Walther. Louisiana allows hunters to take three of these ducks per day.

In Texas, hunters are limited to one duck, but Mottled ducks look a lot like Mexican ducks. Hunters are allowed to take five Mexican ducks per day. State officials are trying to resolve the problem by limiting the take to one Dusky duck per day, covering Mottled, Black and Mexican ducks. Although lead shot is banned nationwide, Walter says spent shot is still found at the bottom of ponds and in the gizzards of ducks.

Wildlife experts in both Louisiana and Texas are paying attention to their Mottled duck populations with extensive banding operations. The staff at McFadden Refuge devotes a third of their time to nighttime banding operations. Sometimes Walther and his staff are only able to band about eight or 10 ducks in a long night of working. Their goal is to band enough ducks to analyze annual survival, then start looking at nest success and brood survival.

Walther believes the species can rebound. That's why he and his colleagues keep going out in the dark to do battle with spotlights and the mother ducks who protect their brood from those who band them. ◆

# Getting a Quality Hunt in Your Sites

**The National Wildlife Refuge System** is teaching visitors to hunt…and to hunt well, especially by reducing wounding loss.

The Fish and Wildlife Service supports a goal of reducing wounding loss to 10 percent or less. "I want birds to go home in the bag or to keep flying," says Tom Reed, National hunting and fishing coordinator. "Wounding is wasting a resource."

Reed is spearheading the Refuge System's cooperation on a Beginning Waterfowl Hunter Education Initiative with Ducks Unlimited, the Cooperative North American Shotgunning Education Program (CONSEP) and the International Hunter Education Association (IHEA). These organizations are drafting a Memorandum of Understanding to improve the skills of waterfowl hunters by making more educational opportunities available online, in print, on DVDs and in the field.

Reed started offering a new series of clinics on five refuges in North Carolina, Kansas and Oklahoma in the fall of 2005 with an emphasis on reducing wounding loss. State partners have expressed great interest in scheduling more waterfowl clinics this year, and there will be an archery clinic in the spring to improve the shooting skills of beginning bow hunters.

Wounding is a problem for several reasons, according to Reed. People may only hunt a few times each year rather than many times as in years past and they may not be taking time to hone their skills. They may not have been mentored by more experienced hunters. With fewer opportunities to be in the field, Reed suggests there is a stronger urge to "pull that trigger."

"We want to focus on a quality hunt that respects wildlife," explains Reed. "Pulling the trigger should not be the most important part of the experience." Reed relishes being outdoors, watching birds cup their wings, and having them decoy "right where you want them. It ties together an understanding of waterfowl behavior, waterfowl habitat and the environmental conditions. It is a tie between people and wildlife."

Reed's clinics teach hunters how to identify waterfowl, use camouflage and concealment, design and locate a blind so that a harvested bird is likely to fall in open water, improve their shooting technique, set decoys, know when to use duck calls, and understand the value of using a trained retriever. Hunters also learn about wetlands and marsh management, the concept of flyway corridors, and migration timing, as well as a little about management of the National Wildlife Refuge System.

*In an effort to reduce the number of waterfowl wounded by hunters and left to die, refuges are offering clinics to help hunters hone their skills. (USFWS)*

## Passing on the Tradition

Traditionally, shooting skills were passed on from generation to generation. Missisquoi National Wildlife Refuge in Vermont has tried to build on that tradition by sponsoring a Junior Waterfowl Hunting Clinic for the past 29 years, often attended by about 50 youngsters, ages 12 to 15. Parents bring their children many times over.

Some fathers who participated as youngsters are now bringing their own children. One wrote, "For myself it was nice to get back into a blind after 20 years away, and for my son it was his first experience duck hunting. I think he's hooked."

Participants see a retriever demonstration and learn how important retrievers can be in the effort to reduce wounding loss. They learn to use decoys, design a blind, estimate the distance to a bird and when to take the best shot. The refuge takes the opportunity to teach about wetlands and refuge management as well as hunter safety and ethics. Youngsters receive a certificate and participate in a lottery for eight days of hunting reserved for junior hunters. Mentors are required to attend both training and hunting days. A no-fee "mentor day," when only mentors can hunt on the refuge, rewards those who act as mentors.

Careful planning, recognition of the long-term funding needs of a hunter education program and partnering with other organizations are key to successful hunting clinics.

Missisquoi Refuge partners with Vermont Department of Fish and Wildlife, Ducks Unlimited, the Sportsman's Club of Franklin County, as well as many dedicated volunteers for the annual clinic. Outdoor Recreation Planner Eileen Nuñez believes the clinics create a new generation of educated hunters who will pass on the tradition and are also aware of the importance of the refuge for wildlife conservation and habitat protection. "The education we provide is broader than how to hunt," adds Nuñez ◆

# Mushing to Your New Job

*Recalling a 41Year Career*

*Armed with trail maps made by Native students at the University of Alaska, Jerry Stroebele and his wife Mary mushed across Kanuti, Koyukuk and parts of Selawik Refuges during a three-week trek on their way to his job as refuge manager at Selawik National Wildlife Refuge. Stroebele is retiring from the Fish and Wildlife Service on March 3 after 41 years of government service. (Family Photo)*

**Jerry Stroebele** received his first job offer from the Fish and Wildlife Service by telegram in 1963. Forty-one years of government service later, he is refuge supervisor of the eight northern Alaska refuges and preparing to retire on March 3.

Stroebele worked in Oregon, Montana, and Colorado before coming to Alaska, an assignment he concluded was a gift from heaven. "I am so lucky to be paid to live here and work here," says Stroebele as he describes his view of the Chugach Mountains from his office window, just before the paintbrush glow of sunset.

Stroebele's career is sprinkled with personal and professional adventure, including combat as an Army captain in Vietnam. In the early 1980s, he spent summers in Prudhoe Bay. As the Fairbanks Ecological Services field supervisor he was assigned one boat and twelve people to review permits and collect contaminant information that would help mitigate the impact of petroleum development. He came away with respect for oil workers who can change a vehicle engine outside in 45 below zero weather – and also with data that led to improved procedures for disposing of reserve pit fluids on the North Slope.

In 1986, Stroebele became refuge manager of Selawik NWR in Kotzebue, Alaska, where his family would live as minorities in a community that was 85 percent Inupiaq Eskimo. One daughter attended all four years of high school in Kotzebue and two more of Stroebele's children were born there.

One of his warmest memories is working with the Athabascan and Inupiaq people. He remembers camping with Inupiaq whale hunters on an island in the Beaufort Sea, drinking coffee made from melted sea ice. (Yes, it was a little salty.)

"There is a sense of belonging that is unique to Native Americans that have had hundreds of generations depending on that land," he says. "It's part of their soul. I feel a great sense of stewardship for the land, but my roots don't go back millennia. Theirs do. So when we make our management decisions, we can't exclude them, and we always have to consider them to be very much a part of the land – even today, and for sure, tomorrow."

## From Fairbanks to Kotzebue

But a real challenge was simply getting to Kotzebue. Stroebele and his wife Mary had been training two dog teams at the time. How would they get the dogs from Fairbanks to Kotzebue? The dogs would run!

With trail maps made by Native students at the University of Alaska, they mushed across Kanuti, Koyukuk and parts of Selawik Refuges, staying in villages and generously provided subsistence cabins. The trip took three weeks in temperatures of 45-50 degree below zero. At one point, Mary's sled runners smashed into a boulder while crossing a glazed-ice river, flipping the sled and hitting Mary's head on the ice, but "she was tough." Little did they know how tough. At the end of the trip, they learned she was pregnant.

Stroebele's lead dog was pregnant too and gave birth during the trip. "We wrapped the puppies in hides with a hot water bottle in the sled bag and we had to stop every four hours so she could nurse. Sometimes she would turn the whole team in a U shape so she could see her pups."

In addition to working with native people, Stroebele feels privileged for his years working with Service employees, including three tours as class advisor at the Refuge Management Training Academy. "What a wonderful outfit we have with diverse people from all walks of life and every one of them with an incredible enthusiasm for protecting the resource. I have no worries about retirement. I have lots to do – especially sailing. And I know dozens of exceptionally qualified and talented refuge employees who are ready for bigger challenges."

"Alaska is remote and can be cold," says Stroebele, "but it's a fabulous, wild, wonderful challenge. Every refuge employee owes it to themselves to experience Alaska." Stroebele will stay in Anchorage for a few years until his wife can retire; then they will move one hundred miles south to Homer, Alaska. ◆

# History in the Making: The Changing Fortunes of Yauhannah Bluff

*By Marshall Craig Sasser*

**On a quiet sunny afternoon** in 2000, John Doresky and Furman Long of The Nature Conservancy (TNC) walked into my office, back when I was refuge biologist, and announced that they had found the site for the future Waccamaw National Wildlife Refuge environmental education center. Little did anyone know that this would be a new chapter in the long history of a tract of land call Yauhannah Bluff.

Located between Conway and Georgetown, S.C., on a high bluff overlooking the Pee Dee River and Yauhannah Lake, the 22-acre Yauhannah Bluff has inspired people for more than 10,000 years. With the help of The Nature Conservancy, Waccamaw Refuge acquired Yauhannah Bluff in 2002 after two years of negotiations. Designing a state-of-the-art environmental education center required a comprehensive archeological survey, performed by New South Associates from Stone Mountain, Ga. It revealed a wealth of information about past human life.

Through historic records – such as King's grants, deeds and maps – much can be determined about life on Yauhannah Bluff. In 1711, Percival Pawley received a proprietary grant from King George I for 300 acres that included Yauhannah Bluff. In 1716, a Native American trading post was built near or on the Bluff. Because the trading post was only operated for about a year, there was no archaeological evidence of it, but according to the Indian Trade Commissioners Journal, hundreds of deerskins were sent to Charleston.

The acreage on the bluff changed hands several times in subsequent years. One map shows a ferry running near Yauhannah Bluff in the late 18th century. The remains of a plantation main house settlement were uncovered. From the early 1720s through about 1820, the plantation was owned by the Pawleys, Waties, Hulls and Alstons. Archaeologists found a series of posts surrounding an area of burnt sand suggesting a chimney.

Many of the artifacts recovered at the plantation site reflect the wealth of the owners, including ceramics and eyeglass fragments, jewelry, a coin, buttons and eating utensils. One of the more noteworthy finds was a rare 1722 coin known as the Rosa Americana, a coin produced for Ireland and the American colonies in 1722. Percival Pawley may have dropped this very coin.

Construction of the environmental center is set to begin in the summer of 2006. One of the primary themes will be the role of people in shaping the environment. Artifacts that have been derived from the most recent archeological excavation along with more modern relics – like the two logging trams left behind at the end of the extensive logging operations in the late 1950s – will be incorporated into the exhibits.

*Many of the artifacts recovered at the plantation reflected the wealth of its 18th century owner and included fragments of ceramics, jewelry, a coin, eyeglass fragment, buttons and eating utensils. One of the more noteworthy finds was a rare coin known as the Rosa Americana, a coin produced for Ireland and the American colonies in 1722. (Natalie Williams/New South Associates)*

Because of the sensitivity of this site, the refuge has gone to great lengths to shift the new facility away from all known archeological resources as well as avoid the remainder of the bluff that was not excavated. Archeological excavations may well continue to better piece together the incredible history that has been associated with the Yauhannah Bluff. ◆

*Marshall Craig Sasser is refuge manager at Waccamaw National Wildlife Refuge, S.C.*

*The remains of a plantation main house settlement were uncovered during an archeological dig on Yauhannah Bluff at Waccamaw National Wildlife Refuge. The plantation had several owners from the 1720s through about 1820. (Deborah Silliman/Coastal Observer, Pawleys Island, SC)*

# Save the Maine Salt Marsh

*Development in York County, Maine – the fastest growing county in the state – threatens these salt marshes along the York River near Rachel Carson National Wildlife Refuge. A $1 million grant to a consortium that includes the refuge will allow the nonprofit York Land Trust to acquire and protect up to 200 acres of this fragile habitat. (USFWS)*

**Think of Maine** and you have visions of a rugged, rocky coast, thick pine forests and climbable mountains. Think again.

The state's southeast corner, dotted with lush salt marsh, rolling along the York River to the gentle rising slopes of Mt. Agamenticus, is the largest unfragmented coastal forest between Acadia National Park in northern Maine and the New Jersey Pine Barrens and a hot spot for subdivision development.

A $1 million dollar grant to a consortium dedicated to protecting the wetlands habitat of Maine's York River is taking some of the heat off development. The grant from the federally-funded North American Wetlands Conservation Act (NAWCA) will help protect a large area of salt marsh in southern Maine. Much of the remaining salt marsh is already protected as part of Rachel Carson NWR, dedicated to protecting fish and wildlife that depend on southern Maine's salt marshes.

Other NAWCA grants in fall 2005 were awarded to partnerships including Bear Lake Refuge in Idaho, Detroit River International Wildlife Refuge in Michigan, and Pocosin Lakes Refuge in North Carolina. Since its passage in 1989, NAWCA has provided annual matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico. Projects must meet certain biological criteria and partners must be able to match the grant.

The Maine grant provides funds for the nonprofit York Land Trust to purchase up to 200 acres of salt marsh and buffer areas in the upper reaches of the river, permanently protecting habitat for more than 100 species of waterbirds and at least 28 species of fish. The land trust and Rachel Carson Refuge are among the 10 members of the Mt. Agamenticus to the

## Sabine Refuge– *from pg 1*

The storm also totally destroyed the visitor center and office and support buildings. Refuge staff now work from nearby Cameron Prairie National Wildlife Refuge.

"The longer the material sits out there, the more dangerous it gets," said Don Voros, project leader for the Southwest Louisiana National Wildlife Refuge Complex. "The debris is sitting in salt water, which, over time, will eat into the metal drums and allow the release of hazardous materials into the environment."

### Taking Water Samples

Refuge staff is working with a contractor to take core samples and water samples from Sabine Refuge to obtain accurate data on the extent of any potential contamination from the wide array of unknown containers strewn about the refuge.

Sabine and Cameron Prairie Refuges remain closed to the public due to safety concerns resulting from Hurricane Rita. Lacassine National Wildlife Refuge, also part of the Southwest Louisiana Refuge Complex, was less hard hit and has reopened its wildlife drive and fishing pier. Other parts of Lacassine Refuge are still closed.

Voros estimates cleanup costs at Sabine Refuge will be extremely high, depending on the volatility of the tanks and volume of the debris. Given the potentially large cleanup cost, officials from Southwest Louisiana Refuge Complex are working with outside agencies to find appropriate funding sources and means of debris removal.

Also hit hard by the earlier Hurricane Katrina, Southeast Louisiana refuges – including Bayou Sauvage and Big Branch Marsh National Wildlife Refuges – are still in the difficult task of recovering from the greatest natural disaster to hit America in recent time. Most of the hazardous materials and other debris has been removed from the refuge levees by the Environmental Protection Agency and the Army Corps of Engineers, but there are still large debris lines, including commercial barges and boats along the marsh and upland interface. There is much yet to do, according to Southeast Louisiana Refuges Complex Manager Ken Litzenberger.

"Many of the refuge staff are still living in temporary quarters (trailers), but they are working hard to restore a sense of normalcy to both their personnel lives and the refuge," said Liztenberger. ◆

Sea Conservation Initiative, the coalition that is spearheading efforts to conserve critical threatened lands.

The refuge staff enthusiastically supports the coalition. Indeed, the U.S. Fish and Wildlife Service's Gulf of Maine Coastal Program is actively involved in the coalition, as are state and local government agencies and private organizations like The Nature Conservancy.

## Historic Perspective

The region's history offers an interesting look at the country's economic history. The salt marsh lands were sold in small lots and developed for salt hay production in colonial days. For generations after salt hay lost its economic value, the York River corridor remained relatively pristine because landowners did not develop or devastate the marsh. Now, as property taxes and property values rise, old-time landowners are sometimes selling to developers, and the burgeoning tide of residential development is racing to the salt marsh edge.

Service Biologist Lois Winter is an avid supporter of protecting this sensitive habitat. "Our Gulf of Maine Coastal Program office is all about helping partners protect or restore important habitat for fish and wildlife resources," she says. "We frequently work with other Fish and Wildlife Service offices, other federal or state agencies, land trusts, watershed associations and private landowners. From our perspective, it doesn't matter who owns that land, as long as it's permanently protected and effectively managed for its natural resource values."

It is protected for species like the sharp tailed salt marsh sparrow and Nelson's salt marsh sparrow, tiny birds that are unique to the salt marsh. They live entirely in the marshes between Maine and the mid-Atlantic, where their habitat is being compromised. They are also being decimated by mercury contamination, according to Wade Feurt, Rachel Carson Refuge manager. His staff is researching the mercury problem and has also been surveying migratory birds on the salt marsh both on the refuge and in the acreage that is now being acquired by the land trust. "This is valuable wildlife habitat," says Feurt.

Feurt is quick to point out that refuges do more than "manage everything between the blue goose signs. We do so much in partnership. No one of us can protect the land, but together we might be able to." ◆

## ICS Then & Now – *from pg 11*

agencies in the Departments of Interior and Agriculture. Over the next few years, the NIIMS sponsor became the National Wildfire Coordinating Group and included state representatives as well. A standard training curriculum was designed to address a wide range of public and private sector applications, including floods, earthquakes, oil spills, hurricanes and even non-crisis events. The increasing complexity of incident management in many parts of the country demanded a single system that could be used by all emergency responders. ICS became that system.

By the mid 1990s, ICS was endorsed by the Federal Emergency Management Agency (FEMA), the National Fire Academy, FEMA Urban Search and Rescue teams, the U.S. Coast Guard for oil and hazardous substance releases (hazmat incidents), the Occupational Safety and Health Administration (OSHA) for all governmental and private organizations that handle hazardous materials, the National Fire Protection Association, and the Environmental Protection Agency for non-OSHA state hazmat incidents

In 2004, the National Response Plan identified ICS as the "combination of facilities, equipment, personnel, procedures, and communications operating with a common organizational structure, designed to aid in the management of resources during incidents. ICS is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, or organized field-level incident management operations."

### What's the latest?

Recently, ICS made another transition when the Department of Homeland Security (DHS) adopted it as a key part of the National Incident Management System (NIMS). This system provides a consistent framework for incident management at all jurisdictional levels, regardless of the cause, size or complexity of the incident. ICS is now "the" system for managing emergencies.

The roots of ICS are based on the need for a system that builds complexity from the bottom up, from a small incident with local responders to large incidents involving regional and national resources. One of

*continued pg 24*

## Chief's Corner – *from pg 2*

from every part of the country – from Alaska to Hawaii, from Maine to Puerto Rico – donated what they could spare. Other Friends organizations held book sales and various fundraisers to donate to the Ding Darling Society fund.

Just before Thanksgiving, $26,000 was distributed among Service families who had been severely affected by one of the hurricanes. In the some of the worst cases, families who had little or no flood insurance. used the money to replace appliances ruined by the floodwaters and to begin to put their lives back in order.

Our donations can't replace the family photos and other mementoes that are forever lost. We can't erase the awful memories or the sense of dislocation. Instead, we gave friendship and support when we saw our neighbors and colleagues in trouble. The Service family has been strengthened by giving back to people who have lost too much and who, nonetheless, continue to work on behalf of the natural resources that enrich the lives of all Americans.

## ICS Then & Now – *from pg 23*

many problems associated with the recent hurricane responses was the top-down implementation of ICS. This occurred in part because local responders were often victims of the disaster themselves and lacked the capacity to act. As a result, local needs were frequently not identified or addressed.

A logical next step for ICS would be a national emphasis on training, more realistic local preparedness drills, and development of better models for large-scale incidents of national significance such as large hurricanes where local response capability becomes almost non-existent. ◆

*Art Latterell is national fire plan coordinator for the U.S. Fish and Wildlife Service.*

*After years of development and extensive field testing for wildfire response, the Incident Command System was created. It was obvious to the task force and others that the characteristics of these fire incidents were similar to other kinds of crises in which unplanned events rapidly grow in size and complexity to multi-jurisdictional incidents. (USFWS)*

## Send Us Your Comments

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


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