



RefugeUpdate

National Wildlife Refuge System

www.fws.gov/refuges



Cherry Valley National Wildlife Refuge, whose wetlands are home to threatened bog turtles, is the nation's 553rd refuge. (Michael Weida)

Cherry Valley Refuge Established in Pennsylvania

By Bill O'Brian

The 553rd national wildlife refuge is just 75 miles west of New York City and 100 miles north of Philadelphia. It represents an opportunity to connect millions of Americans with the great outdoors and, at the same time, protect rare fen habitat and the threatened bog turtle.

Cherry Valley National Wildlife Refuge in northeastern Pennsylvania was established on Oct. 18, when the U.S. Fish and Wildlife Service acquired 185 acres of land from the owners of Sorrenti's Cherry Valley Vineyards. The parcel was purchased with money appropriated by Congress from the Land and Water Conservation Fund.

The refuge's acquisition boundary, which encompasses more than 20,000 acres near the Delaware Water Gap, is surrounded by residential/resort development in the Pocono Mountains to the north and commercial/residential development in the Lehigh Valley to the south.

Refuge manager Michael Horne, recognizing the extreme pressures of exurban sprawl in the Northeast, says the establishment of Cherry Valley Refuge "shows me that there still are a lot of people out there who value the land and value conservation and will go to great lengths to protect what they believe in."

2011 Conference: Just a Click Away

"There are two things that interest me," wrote conservationist Aldo Leopold, "the relation of people to each other, and the relation of people to land."

That concept will echo in Madison, WI, as 1,200 people gather in July 2011 to adopt an invigorated vision for the National Wildlife Refuge System in a process now formally named "Conserving the Future: Wildlife Refuges and the Next Generation."

Already, U.S. Fish and Wildlife Service employees, Refuge System Friends and others can begin the discussion through a new Web site, www.americaswildlife.org, created by the Refuge System and the National Wildlife Refuge Association (NWRA). There, people can take a survey to convey their opinions about the importance of

Chief's Corner

What Does Wilderness Really Mean?



Greg Siekaniec

Untrammelled by man.

Maybe that's the phrase from the Wilderness Act that most fully embodies the vision that Congress had in mind when it designated

wilderness under the Alaska National Interest Lands Conservation Act – ANILCA – passed 30 years ago this year.

Certainly “wilderness” is almost synonymous with Alaska – and for good reason. The Refuge System alone manages about 18.6 million acres of congressionally designated wilderness in 21 areas within 10 national wildlife refuges in Alaska. Ninety percent of U.S. Fish and Wildlife Service's total wilderness acreage is in Alaska.

As a former manager of Alaska Maritime National Wildlife Refuge, which has more than 1.3 million acres of wilderness, I know personally and professionally what wilderness means to Americans who enjoy it.

“I just like being away from the white noise of town,” said one resident as he recalled recently why he travels to Kenai National Wildlife Refuge, upgraded to a wildlife refuge from its designation as a “moose range” with passage of ANILCA.

Longtime Soldotna, AK, resident Guy Bruni camps in the wilderness once the cold weather has persuaded less hardy

Correction

An article in the September/October issue about the impact of the BP oil spill on lesser-known species incorrectly stated that the endangered Alabama beach mouse can be found only at Bon Secour National Wildlife Refuge in Alabama. The tiny dune-dweller lives across a 2,500-acre range on the Fort Morgan Peninsula, which includes the refuge.

folk to move inside. “It's more difficult to access,” he says, “but you get a different experience.”

Says another Alaskan: “The stars are much more vibrant out there. I like being closer to nature and wildlife.”

They're lucky: They live near an Alaskan national wildlife refuge that has wilderness.

But what does wilderness designation in Alaska mean for the millions who live in highly urbanized America – people who can neither afford hefty airfares nor time away from the job to get to Alaska? What does it mean to people in sunny Florida (where they have their own wilderness land) that more than 8 million acres are designated as the Mollie Beattie Wilderness in the Arctic National Wildlife Refuge, which is the largest refuge in the system and is celebrating its 50th anniversary as ANILCA turns 30? What does it do for most Americans who may never see Alaska?

The very concept of wilderness embodies freedom. The thought of wilderness allows all of us to dream, whether the wilderness is just outside our front doors or thousands of miles away. The designation of wilderness on an Alaska national wildlife refuge means our grandchildren might yet have a chance to see polar bears, caribou, musk oxen, tundra and boreal forests – and a whole range of wildlife – thrive for new generations.

The purpose of wilderness designation is to secure an enduring resource, to protect the character of special lands. Because of the sweeping provisions of ANILCA, the Fish and Wildlife Service has dedicated a whole chapter in its management manual to stewardship of Alaska refuge wilderness areas. Thousands who have worked for the Service over past decades have dedicated their professional careers to that cause – for the betterment of not only wildlife and its habitat but of all Americans. 

Refuge Update

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Inside

White-Nose Syndrome

To fight the ailment in bats, caves and abandoned mines on refuges are closed to the public while research and monitoring protocols are implemented. Page 7

Birding Kits From Washington

“It's really cool stuff,” Stillwater National Wildlife Refuge's Susan Sawyer says of supplies that about 90 refuges received for completing a Birder-Friendly Refuge Incentive Program survey. Page 9

FOCUS: Celebrating Alaska

The Alaska National Interest Lands Conservation Act (ANILCA) is 30 years old, and Izembek and Arctic National Wildlife Refuges are turning 50. Pages 10-18

Desert Refuge Complex Heeds First Lady's Call

By Dan Baldwin

Half a year after First Lady Michelle Obama used the natural landscape of southern Nevada to unveil her Let's Move Outside! initiative, Desert National Wildlife Refuge Complex remains energized and visitor services manager Angelina Yost remains animated.

Let's Move Outside! promotes outdoor activities and encourages people, particularly children, to take advantage of the national wildlife refuges, national parks, national forests and other public lands throughout the United States.

Before the First Lady's June 1 visit, staff members at the refuge complex already were looking for ways to attract more children to its four wildlife refuges. Once she made her pitch in person for ridding the country of childhood obesity, the complex redoubled its effort.

Inspired by Obama, interpretive specialist Alyson Mack set up a Let's Explore! program at Ash Meadows National Wildlife Refuge, which includes 23,000 acres of spring-fed wetlands. Let's Explore Ash Meadows! is a series of once-a-month events taking place this fall. Each event is a day of outside activities directed toward children and families. The themes include "Snakes and Lizards" (for all ages in September); "Wild Birds" (for ages nine and up in October); "Quest for the Bighorn" (a hike to find sheep in November in which teenagers take field notes); and "Time Travelers" (for all ages in December, focusing on lifestyles of people in the region in the 1900s).

Also since the Obama visit, the Southern Nevada Agency Partnership (SNAP) has moved forward with its Nevada Children's Outdoor Bill of Rights. SNAP consists of professionals from the U.S. Fish and Wildlife Service, Bureau of Land Management, National Park Service and U.S. Forest Service. The bill of rights is an 11-point document, embraced at the city, county, state and federal levels, that encourages "Southern Nevada's children to participate in



Desert National Wildlife Refuge Complex visitor services manager Angelina Yost, right, with First Lady Michelle Obama and Sen. Harry Reid of Nevada in June. (Christopher Moyer)

outdoor recreational activities, engage in lifelong learning adventures, and become stewards of the environment."

The Desert Refuge Complex also has ramped up its involvement with the Children and Nature Initiative, in which the Service is partnering with the National Environmental Education Foundation to train health care providers to become "nature champions" and recommend outdoor nature activities for kids.

All of which excites refuge complex visitor services manager Angelina Yost, who helped plan Obama's visit. Yost had the honor of escorting the First Lady and Sen. Harry Reid of Nevada for about 40 minutes of speeches and light outdoor activities at BLM's Red Rock Canyon National Conservation Area on that sweltering afternoon last June.

"When the SNAP education team decided I was going to lead the activity, I was literally shaking," says Yost. "I was wondering how I would do, but when the day came I wasn't even nervous." Yost went into her environmental education mode and almost instinctively treated

Obama and Reid like any other visitors. "I guess it was second nature."

It helped, Yost says, that the First Lady was "pretty laid back" and that Reid was obviously happy to be showing off Nevada's natural resources. Yost was delighted to hear Reid say that he had visited Corn Creek Spring at Desert National Wildlife Refuge. "It was great to know that our senator is aware of it, has been there and is proud of it," she says.

But most of all, Yost was impressed by Obama and her Let's Move Outside! initiative.

"What impressed me was how she really tried to connect with the children – both to the group in her formal speech and during activities one-on-one with the kids. She was talking to them directly," Yost says. "I'm just thrilled that she has this initiative, that this is a passion of hers."



Dan Baldwin is the public affairs officer at Desert National Wildlife Refuge Complex.

A Triple Whammy at Cape Romain Refuge

This is the first of two articles about how sea-level rise is affecting two refuges in the South Carolina Lowcountry Refuges Complex in different ways. The second article, regarding Waccamaw National Wildlife Refuge, will appear in the January/February 2011 issue of Refuge Update.

By Bill O'Brian

The question posed to Sarah Dawsey en route to the loggerhead sea turtle nests she oversees is a simple one: How big is Cape Island?

Her reply is more complex: "It's about six miles long, and I don't know how wide anymore. All I know is, it's shrinking."

Cape Island, a barrier island in the Class I wilderness area at Cape Romain National Wildlife Refuge in South Carolina, is losing 20 to 25 feet of land every year on average. Since 1954, the island has shrunk by 24 percent as high tides, wind and powerful waves lift and relocate sand westward across the island.

"It's changing so fast that there are times when I don't know where I am. I don't recognize it exactly," says Dawsey, a wildlife biologist who grew up nearby and is in her 25th season at Cape Romain Refuge.

Cape Island and its turtle habitat are in peril because of a triple whammy: sea-level rise; insufficient sediment from the dammed Santee River to replenish its beaches; and an uptick in powerful storms in recent years. The erosion and westward relocation are "all about abrupt changes during high tides or storm events," says Raye Nilius, project leader at South Carolina Lowcountry Refuges Complex, which includes Cape Romain Refuge. "It's a spikey graph of change, not a slowly rising-bathtub scenario. It's a sort of herky-jerky movement."

Running Out of Island

Cape Island is the largest Atlantic loggerhead sea turtle nesting site north of Florida. This year, it had



This loggerhead sea turtle nest, protected by a cage, was overwashed on Cape Island at Cape Romain Refuge. Three months earlier, the nest was five to 10 feet from the mean high tide line. (Bill O'Brian/USFWS)

1,043 nests holding more than 100,000 eggs and producing about 70,000 hatchlings – one in 1,000 of which will survive to adulthood.

"Back in the day, when Cape Island had plenty of dune formations on it and some elevation, the sea turtles laid their eggs and those eggs were fairly safe," says Nilius. "Now, the island is very flat, it's very low in elevation, and the turtles are laying their eggs in areas that are subject to overwash and groundwater intrusion." When a nest is inundated in such a way, water permeates the egg shells and the embryos drown.

So, refuge staff and volunteers relocate almost two-thirds of nests to higher ground as part of a labor-intensive, \$190,000-a-year turtle recovery effort. But they're running out of island.

"When I came to the refuge complex two years ago, climate change wasn't on the radar screen. Now, we're running as

fast as we can to catch up with it," says Nilius. "We can't stop it."

One thing the refuge can do is help sustain the turtle population so that when the loggerheads' Cape Island habitat disappears in the future, the species will be hearty enough to find new nesting beaches in protected areas nearby.

Turtles aren't the only resource at Cape Romain Refuge imperiled by sea-level rise.

Salt Marsh Fragmentation

A recent Boston University study using new geospatial technology reported that the refuge's salt marshes are at risk, too. The study found that tidal creeks are plunging into the salt marsh along a straight channel, rather than meandering gently as they typically should. It's the result of a complicated combination of factors that involves sea-level rise, burrowing crabs and marsh substrate compaction. In other words,



Refuge staff and volunteers relocate almost two-thirds of loggerhead sea turtle nests to higher ground and fenced hatcheries, which wildlife biologist Sarah Dawsey calls “gardens of nests.” (Steve Hillebrand)



This loggerhead sea turtle hatchling found on Cape Island was released into the Atlantic Ocean. (Bill O'Brian/USFWS)

says Nilius, salt marsh soil is sinking and sea level is rising.

Tidal creeks are extending into the refuge’s marsh platform at the rate of about 6.2 feet per year, she says. “It’s akin to forest fragmentation, except it’s salt marsh fragmentation.” One expert told a local newspaper that 20 to 50 percent South Carolina Lowcountry salt marsh, on and off the refuge, could become sand flats and open water lagoon within three decades.

Beyond that, Jacks Pond, a brackish-freshwater impoundment on the refuge’s Bulls Island, is in jeopardy. The levee around the impoundment is only feet away from the eroding beach. When the Atlantic Ocean reaches the toe of the levee, the impoundment is likely to be lost, along with the habitat that supports wading birds, waterfowl, raptors, shorebirds and thousands of alligators.

Because little can be done to control sea-level rise, Nilius suggests that the refuge serve as an outdoor laboratory. “There are answers here at Cape Romain for many climate change questions,” she says. “We just need scientists to help us find them.” A hydrogeomorphic analysis of the refuge is set to begin in 2011, but Nilius hopes for more.

She also is considering upslope land acquisition. The refuge boundary has remained generally unchanged since establishment in 1932. With habitat disappearing, acquiring land inland – west of the Intracoastal Waterway – with the help of conservation partners

makes sense to Nilius, to ensure habitat for current species in 30 or 40 years. “If we don’t do that now,” she says, “the land along this coast will be a subdivision or a golf course or an industrial plant, with no place for the turtles and birds.” 🦋



Tidal creeks such as this one are extending into the refuge’s salt marsh platform at the rate of about 6.2 feet per year and decimating marsh. (Bill O'Brian/USFWS)

Blogging From the Bayou

By Bill O'Brian

As soon as wildlife refuge specialist Brittany Petersen saw Garrett Wilkerson's application, she knew the search for Black Bayou Lake National Wildlife Refuge's first youth ambassador was over. The 19-year-old had it all.

He wrote a persuasive essay. He was his high school class of 2010 valedictorian. He came recommended by his biology club faculty adviser. He was savvy about new social media. He was entering the University of Louisiana at Monroe as a bio major. He had lived near the northern Louisiana refuge all his life. And, in the grand tradition of his home state, he loved to hunt, fish and be outdoors.

"There was no need to look much further," says Petersen.

Since August, Wilkerson has been one of a handful of young volunteers blogging from and about three southeastern wildlife refuges and several other U.S.

Fish and Wildlife Service units as part of a pilot project known as the Youth Ambassador Program (YAP).

YAP is designed "to create opportunities for youth around the region to connect with nature, the work of the Service and each other," its Web site says. The Southeast Region provides the youth ambassadors with a camera and \$1,000 for gas and incidental expenses. In exchange, the ambassador is required to commit to a year of volunteering 20 hours per month at the refuge or hatchery, regularly blogging about the experience at <http://usfwsyouthambassadors.wordpress.com>

and promoting the station's work by posting the blog, photos and videos on Facebook, Twitter, Flickr and YouTube.

Black Bayou Lake Refuge is a 4,600-acre unit established in 1997 to, among other things, protect and enhance habitat for endangered species, waterfowl, neotropical migrants and resident wildlife. Petersen's goals for Wilkerson's YAP work are: to introduce a new generation to the Refuge System; to involve young people with nature and expose them to conservation careers; to dispel a common misperception among local people of all ages that hunting and



This photo – of an alligator at Black Bayou Lake Refuge, LA – and others can be accessed from the 2010 Youth Ambassador Blog at <http://usfwsyouthambassadors.wordpress.com/>. (Garrett Wilkerson/USFWS)

fishing are not allowed on the refuge; and to use social media to promote the refuge's trails, wildlife and beauty.

"I like telling people all of the stuff we're doing," says Wilkerson. "It feels good when people ask you about it – like you're accomplishing something."

Wilkerson has blogged about banding birds on the refuge. "I've never been able to get that close to birds before and actually see how they look up close, to see the colors, to see what complex creatures they are," he says. He was impressed by the ability of refuge staff to identify birds by sound before they could see them. "I want to be able to do that," he says.

He has blogged about Black Bayou Lake Refuge's fall celebration, which attracts 2,000 to 3,000 people and includes an alligator snapping turtle hatchling release. The turtle is a species of concern in Louisiana, Petersen says, and each year eggs are collected on the refuge, incubated artificially and, at the fall celebration, released into the lake. This year, Wilkerson conducted the release, filling in for the herpetology professor who could not attend.

Wilkerson has begun to address the hunting and fishing misperception, too – among young people and even his father's friends, who recall the lake as a great fishing spot of their youth. "Once the [federal] government took it over [in 1997], they thought it was off limits to everything." So, Wilkerson is publicizing the opportunities to fish for largemouth bass, bream (sunfish) and crappie and to hunt for deer (with a bow), waterfowl, raccoons, squirrels and opossums on the refuge.

That is important because, as Petersen says, "hunting in Louisiana is more than a pastime. It's a livelihood. This is the Sportsman's Paradise – it's our state motto."

While YAP requires Wilkerson to put in 20 hours a month on the refuge, he expects he'll average more than that because "you get to do more interesting things, the longer you're here." 🦋

Spread of White-Nose Syndrome Forces Closure of Caves

By Karen Leggett

White-nose syndrome (WNS) in bats is spreading across the United States much more quickly than expected, and the U.S. Fish and Wildlife Service in September announced precautions to slow the spread in the National Wildlife Refuge System. Caves and abandoned mines on refuges are closed to the public while research and monitoring protocols are implemented. A national response plan is available for comment in the *Federal Register*.

The syndrome has killed more than one million bats in the Northeast and Mid-Atlantic since being documented in New York in 2006. The fungus associated with WNS has been detected as far west as Oklahoma and is expected to continue spreading. Writing in *Science* magazine, researchers predict that the widely distributed little brown-nosed bat will face extinction in the Northeast in 16 years.

WNS spreads most quickly in hibernation, and more than half of the 45 U.S. bat species hibernate. In some hibernacula, almost all of the bats are dying. Virginia big-eared, Indiana and gray bats – all endangered – depend on undisturbed caves and mines and are particularly at risk.

Bats with WNS exhibit uncharacteristic behavior during winter months, including flying outside in daylight and clustering near hibernaculum entrances. Sick bats may lie on the floor or have white fuzz on their faces. The fungus is transmitted primarily from bat to bat, although biologists suspect it could be transmitted inadvertently by humans on clothing and caving gear. Researchers entering caves follow strict decontamination procedures and limited-access rules.

The Northeast Region has borne the brunt of the syndrome so far, and refuges there have taken the lead in a nationwide acoustic survey of resident summer bat populations. But there are few endangered bats on Northeast refuges per se.



Gray bats in Fern Cave National Wildlife Refuge, AL, are considered at high risk for white-nose syndrome. More information is at <http://www.fws.gov/whitenosesyndrome/>. (Jennifer Pinkney)

The Service now considers these refuges at extreme risk for WNS: Wheeler, Key Cave, Sauta Cave and Fern Cave in Alabama; Logan Cave in Arkansas; Ozark Plateau in Oklahoma; and Ozark Cavefish and Pilot Knob in Missouri. As many as a million bats may be hibernating at Fern Cave Refuge alone. Some of the refuges were established to protect endangered bat species and their habitats.

Cavers Are Cooperating

Wheeler Refuge Complex, as part of the Alabama Bat Working Group, has helped develop a statewide management plan. Wheeler Refuge manager Dwight Cooley says that, in addition to coordinating bat surveys and WNS surveillance, the complex has helped expand outreach and public education. A Friends of Wheeler Refuge brochure instructs people not to touch a strange-acting bat; instead, the brochure suggests taking photos of the bat and contacting a professional.

Ozark Plateau Refuge does not have a Friends organization but is working extensively with the Tulsa Regional Oklahoma Grotto, a chapter of the National Speleological Society. Grotto members help monitor bat populations and build cave gates to limit access only to bats. “Most cavers are very

conservation-minded,” says refuge manager Steve Hensley. “They understand why we are doing this, but it has put a crimp in their caving.”

Farther west, in Arizona, Kofa Refuge manager Susanna Henry is responsible for large populations of non-hibernating bats, including Mexican free-tail and California leaf-nosed bats. Are they susceptible to WNS, too? “We don’t really know. We’ll be following the guidelines as a precautionary measure,” says Henry. Two of the refuge’s 200 abandoned mines already have bats-only access gates; leaflets say mines are unsafe for people; and signs indicate the mines are closed to public entry.

There are more WNS questions than answers. Because bats are primary consumers of insects in temperate regions, the ecological consequences of large-scale population reductions are not known. Numerous laboratories – and state and federal biologists – are working to determine the origin of the fungus, predict its spread, develop strategies to control and mitigate it, and identify bat-survival strategies. 

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

At Delta Refuge, “We’re Very, Very Fortunate”

By Mary Tillotson

On April 6, Jack Bohannon’s phone rang at 3:18 a.m. That call from the U.S. Coast Guard ended the most peaceful night’s sleep he would have for months.

A barge had hit a Chevron pipeline on Delta National Wildlife Refuge; oil was leaking into refuge marshland at the mouth of the Mississippi River. Bohannon is refuge manager for Delta, Breton and Bayou Sauvage Refuges on the fragile southeastern Louisiana coast, an area buffeted for centuries by storms and hurricanes off the Gulf of Mexico. Now, that coast faced man-made damage.

The April 6 leak dumped at least 18,000 gallons of crude onto Delta Refuge, befouling 600 acres. In places, oil seeped 70 yards into the dense Roseau cane that helps anchor marshland habitat for migrating waterfowl. U.S. Fish and Wildlife Service biologists, along with Chevron, started cleanup immediately, cutting lanes into the cane so the river current into the Gulf would wash the oil out of the refuge.

By April 20, Bohannon and his staff were starting to think beyond cleanup to the next step – restoring the habitat. But that day, Delta Refuge and the rest of the region took an exponentially harder hit. A blowout at BP’s Deepwater Horizon oil rig had started gushing oil, a disaster that would pour nearly 206 million gallons into the Gulf before the well was plugged in August.

Delta Refuge and nearby Breton Refuge were “fortunate,” says Bohannon. The marshes at Delta Refuge were stained by oil. Some did wash onto Breton Refuge, where cleanup continues. But, while there were reports of thousands of dead birds elsewhere, Bohannon says few birds died at Delta or Breton Refuge, an important nesting area for brown pelicans. And he believes many of those birds died of natural causes, though some pelican hatchlings that left the relative safety of Breton Refuge to feed in the Gulf were fatally oiled.



“We won’t know until spring what the natural recovery will look like,” biologist James Harris says of how marsh habitat such as this at Delta Refuge will fare after two oil spills. (Martha Nudell/USFWS)

The BP oil spill did create major problems, though. The accident brought waves of cleanup crews, scientists, reporters, lawyers and curiosity seekers. They started plying the waters of Delta Refuge, where narrow canals that cut through the tall cane create blind intersections everywhere. Seaplanes were landing nearby; helicopters were landing on Breton Refuge. “It was dangerous,” says Bohannon.

Reopened on Aug. 22

Delta and Breton Refuges were closed to the public in late April; that relieved the congestion. But the disaster was so huge, “we were afraid we would lose everything, all the birds,” says Ken Litzenberger, project leader of the Southeast Louisiana Refuge Complex, which includes Delta and Breton Refuges. However, 10 million feet of containment boom along the coast – tens of thousands of feet of it laid around the refuges – kept most of the oil at bay. As important, says Litzenberger, the weather cooperated. By mid-October, no storms of any size had hit the coast. A big storm could have scattered the booms and pushed oil inland. “We’re very, very fortunate,” says Litzenberger.

Delta Refuge reopened Aug. 22, in time for the fall hunting season. Bohannon says about as many hunters bought licenses and bagged about as many

teal as during the 2009 waterfowl season. Fishing is now permitted off Breton Refuge and, Litzenberger says, the refuge itself may be reopened by December, if weather doesn’t slow the remaining cleanup.

James Harris, refuge complex wildlife biologist, believes accurately assessing damage to wildlife and the Gulf Coast habitat on which it relies is still a year or two away. Predictions now are “purely speculative,” he says. “We’re heading into winter, the vegetation going dormant . . . We won’t know until spring what the natural recovery will look like.”

There are other questions that “can’t be answered tomorrow,” either, says Bohannon. How much of the oil settled to the bottom of the Gulf? At what depth? What impact might that have on nurseries for shrimp and oysters or for species such as pelicans that feed closer to the surface?

Litzenberger says the Gulf’s warm temperatures will spur microbial action to break down the oil faster than would happen in a colder climate. But, he says, how quickly it may happen is unclear: “There’s definitely a lot of oil not accounted for.” 

Mary Tillotson is a frequent contributor to Refuge Update.

Birding Kits From Washington Fill a Need in Nevada

By Bill O'Brian

Susan Sawyer and her colleagues at Stillwater National Wildlife Refuge in Nevada don't have a visitor center or even a contact station. But they do have a strong desire to showcase the quarter-million migratory birds that stop over at the refuge annually. This summer, they got a bagful of goodies that will help them do that.

"It's really cool stuff," Sawyer says of the supplies that Stillwater Refuge and about 90 others received from the Refuge System's Washington Office for completing a Birder-Friendly Refuge Incentive Program survey.

There are four GPS units with software. Four 7x32 Vortex binoculars ("perfect for birding," she says). Four portable copies of the *Kaufman Field Guide to the Birds of North America* ("great for beginning-level birding"). Four JanSport daypacks to hold it all.

That's enough to make four loaner birding kits. Sawyer, visitor services manager at the refuge, has done just that in her effort to let the public know that "there is more to Stillwater than just desert" and that birding on the refuge is special.

Sawyer is augmenting the kits from Washington with refuge maps, checklists and kid-friendly stuff. She's making the materials available to local teachers for class field trips. And she is using the kits on guided birding tours that she hopes to give visitors with increasing frequency in the future.

Stillwater Refuge is recognized as a globally Important Bird Area. Almost 300 avian species have been documented there. Among Sawyer's favorites are tundra swans. "They're huge. They stop only at places where the water is deep enough for them to feed" – three to four feet. "The overall size and just the aesthetics of them are beautiful; they're nearly pure white. It's cool they choose to stop here." Another Sawyer favorite is the canvasback duck – "an iconic and culturally significant bird of this valley" because of its historical value to Native



The tundra swan is one of almost 300 avian species to have been documented at Stillwater National Wildlife Refuge in Nevada. The pure white bird's neck and belly are dirty from feeding in snowmelt muck and runoff. (USFWS)

Americans as a prized food source. Today, 25 percent of canvasback ducks in the Pacific Flyway stop at Stillwater Refuge during fall migration from Alaska and arctic Canada to Southern California and Mexico, Sawyer says.

The refuge is a birding gem in the high desert (altitude: 3,900 feet). Yet not many people know that, not even local folks. Sawyer hopes to change that.

"It's really cool stuff," Sawyer says of the supplies that Stillwater Refuge and about 90 others received.

In cooperation with the Lahontan Audubon Society in Reno, 70 miles to the west, and the refuge support group Spring Wings in nearby Fallon, she and refuge manager Mike Goddard want to publicize Stillwater Refuge as a birding destination.

In October, Sawyer used the new birding kits at a workshop for 35 K-12

teachers and resource educators from nonprofits and government agencies. It was the third such workshop she has facilitated but the "first one where we can split the teachers into teams, give them a backpack and have an actual field activity" on the refuge.

The birding field activity made use of one of two new floating docks at Foxtail Lake in the sanctuary portion of the refuge that is closed to hunting. The mid-lake dock allowed the workshop educators to see what attracts the birds to the lake – aquatic plants, small fish and insects.

During the workshop, as she always does, Sawyer put the teachers in the role of their students to give them the full field trip experience. And, because educators and children "remember little rhymey things," in a singsong voice she emphasized four reasons migratory waterfowl come to Stillwater Refuge: *feeding, breeding, nesting, resting.* 🦢

For more information about the Birder-Friendly Refuge Incentive Program, contact Mike Carlo at Michael_Carlo@fws.gov.

Focus... Celebrating Alaska

ANILCA at 30: Still the Backbone of the Refuge System

By Mike Boylan

If Alaska's constitution were a birth certificate marking statehood in 1959, the 1980 Alaska National Interest Lands Conservation Act (ANILCA) would be its college degree, signaling the young state's growing independence.

Nine years after the 1971 Alaska Native Claims Settlement Act settled indigenous land claims and enabled 200 villages and 13 Native-owned regional corporations to seek their financial future, ANILCA divided Alaska's remaining acreage among competing federal, state and Native interests.

The National Wildlife Refuge System was the biggest beneficiary of ANILCA – whose 30th anniversary this year coincides with the 50th anniversaries of two historic refuges, Arctic and Izembek.

Under ANILCA, the Refuge System inherited 54 million acres with creation of nine new national wildlife refuges and expansion of six of seven existing refuges. In one legislative swoop, the act tripled the size of the Refuge System and the National Wilderness Preservation System. Among numerous other things, ANILCA spared Amchitka Island in the Aleutians from continued underground nuclear testing when it became part of Alaska Maritime National Wildlife Refuge, and it spared the Yukon River from future schemes like the Rampart Dam when the area was included in Yukon Flats Refuge.

But ANILCA's greatest value may be its fingerprints on the National Wildlife Refuge System Improvement



The Alaska National Interest Lands Conservation Act (ANILCA) created Yukon Flats Refuge, ensuring the Yukon River will remain free flowing and not be dammed as was proposed in the 1960s. (Steve Hillebrand)

Act of 1997. Its influence is seen in the latter act's:

- requirement for comprehensive conservation plans.
- hierarchy of refuge-specific purposes.
- holistic management for natural biological diversity.
- affirmation of wildlife-dependent recreation, environmental education and interpretation as part of the Big 6 priority public uses.
- assurance of adequate water quality and quantity for refuges by directing the Interior Secretary to acquire water rights.

So, ironically, even though national wildlife refuges began 77 years before ANILCA, the Refuge System looked to Alaska to enter the 21st century.

ANILCA's conservation units are marbled with exceptions honoring Alaska's history and culture. For

example, the act allows "traditional" access of snowmobiles, motorboats and floatplanes within wilderness areas. Most important, ANILCA codifies "customary and traditional" uses of natural resources by rural people by ordaining a subsistence purpose for refuges. ANILCA also values local residents' knowledge of these lands by giving a local hiring preference so that those living on refuge lands can help manage them.

Lower 48 refuges are often threatened by developments outside their boundaries. But Alaskan refuges usually are threatened from within because development proposals can metastasize into roads, oil fields and utility corridors. Conservation is dynamic, and even such historic refuges as Izembek and Arctic still face major challenges as they reach 50. Izembek's small staff continues to deal with a decade-long proposal to build

continued on pg 26

The Arctic Refuge: “Our Geography of Hope”

By Roger Kaye

December 6 is the 50th anniversary of the Arctic National Wildlife Refuge, a landmark wilderness that is a symbol of the dilemma we Americans face regarding both our effect on the global environment and the quality of it that we will leave to future generations.

The refuge didn’t come easily. After a hard-fought campaign and failed legislative attempts in the 1950s, public support persuaded the Eisenhower administration to establish it through an executive order “to preserve unique wildlife, wilderness and recreational values”— tangible assets for which the 19.2 million-acre refuge is renowned today. But beyond perpetuating the wildlife and wildness within its boundaries, there was another purpose in the minds of those who led the fight.

To understand the larger significance of their victory, we need to realize that the Arctic Refuge campaign was rooted in a growing fear for the future. The refuge’s establishment was among the first conservation initiatives of the 1960s that responded to concern over the environmental degradations accompanying the post-World War II march of progress: rapid loss of natural landscapes; destructive logging, mining and agricultural practices; spread of pollution and pesticides; and the atomic bomb. Some people even questioned whether future generations would inherit the same Earth. Among them were Olaus Murie, director of The Wilderness Society, and his wife, Mardy, who together led the long struggle.

The Muries believed the area ought to be left unaltered for the unique recreational opportunities it affords, although *recreation* is a wholly insufficient term for the experiences they wanted to be available. What is now the wildlife refuge should remain an adventuring ground, they believed, the antithesis of the domesticated and convenience-oriented

tourism that national parks were promoting. Visitors could come to experience the conditions that helped shape our national character: They could explore and discover, experience freedom and self-reliance, and confront challenge, even hardship.

In 1956, the Muries led a five-member, summer-long expedition to the heart of the proposed wilderness, the mountain-lined Sheenjek River in the so-called Valley of Lakes. In addition to cataloguing the interrelatedness of all life forms from spiders to lichens – not just large charismatic mammals such as caribou and wolves – they experienced true solitude. This was one of those places, Olaus Murie said, “to contemplate and try to understand our place in the world.”

At the time, Olaus Murie and Wilderness Society colleague Howard Zahniser were working on behalf of what would become the 1964 Wilderness Act. Beyond the practical benefits of providing for recreation and protecting wildlife, habitat and scenery, they believed wilderness would serve another important need. As Zahniser said:



A landmark 1956 expedition to the mountain-lined Sheenjek River in the so-called Valley of Lakes inspired Olaus and Mardy Murie to push for the establishment of the Arctic National Wildlife Refuge. (USFWS)



Wildflowers dot the tundra on Arctic Refuge. (USFWS)

“We deeply need the humility to know ourselves as the dependent members of a great community of life.” And: “To know the wilderness is to know a profound humility, to recognize one’s littleness, to sense dependence and interdependence, indebtedness and responsibility.”

Establishment of the refuge would be an encouraging demonstration of the nation’s willingness to accept restraint and limit our effect on the larger community of life.

continued on pg 27

Focus... Celebrating Alaska

Izembek Refuge: Rich in Biology, Steeped in History

By Debra Corbett

Izembek National Wildlife Refuge is known as the smallest Alaska refuge and one of the most biologically and geologically rich. But it is a hotbed of archaeological and modern history, too.

Situated on the western Alaska Peninsula, the 417,533-acre refuge occupies a narrow neck of land between the Pacific Ocean and the Bering Sea. In places, only one mile of land separates the two. The refuge's tundra lowlands, dotted with lakes and wetlands, are framed by smoking volcanoes. The refuge centers on shallow lagoons containing the largest eelgrass beds on the Pacific Coast of North America.

The refuge provides spawning beds for millions of red and chum salmon. The lagoons, lakes and marshes shelter thousands of birds. More than 130,000 black brant using the Pacific Flyway gather at Izembek Refuge before their fall migration. The world's population of 60,000 emperor geese use the refuge during spring and fall migrations, as do 300,000 ducks and 80,000 shorebirds. More than 100,000 Steller's eiders winter on the refuge. Caribou, brown bears, seals, sea lions, walrus and whales frequent the refuge or nearby waters.

The land's history is equally rich.

What is now the refuge supported sophisticated Native Alaska cultures as long as 5,000 years ago. By then, once-wandering caribou hunters had learned to exploit the rich and accessible marine resources and were living in settled villages. The protected lagoons and diverse resources encouraged experimentation with technology and skills. Caribou hides were traded into the Aleutian Islands to the west, and walrus ivory was formed into jewelry and amulets. The incredible bird life also formed a foundation for human creativity. In addition to eating the meat and eggs, people used bird skins

for light, warm clothing and bones for basketry, leatherworking awls, fine sewing needles and jewel-like fishhooks.

By 600 AD, salmon had become a staple. As human population increased dramatically, the number and size of villages grew. Political and social changes followed, with evidence of hereditary chiefs and social inequality. The remnants of forts and weaponry testify to an increase in warfare.

Whaling may have originated in the shallow lagoons, where gray whales come to feed. Elaborate art hints at a complex symbolic/spiritual life.

Russian Traders

In the 1740s, Russian traders discovered untold wealth in the furs of Alaska. Hunting parties appeared near Izembek by 1760. Russian lawlessness provoked retaliation by the Unangan (Aleutian) people. War broke out in 1762. The Unangans drove the Russians away for two years but lost eight villages. From a pre-Russian-contact population that may have been 10,000, the population dropped to probably 1,000 by 1790. Through the 19th century, Unangan population fluctuated between 200 and 300.

The early 1900s were a time of opportunity and prosperity. Commercial fishing for the endless salmon runs and vast shoals of cod and herring and high prices for furs drew people. A number of communities were established, though none directly on land that is now Izembek Refuge.



Remains of a World War II U.S. air base are evident but well camouflaged on the tundra at Izembek Refuge. (USFWS)

In 1941, responding to Japanese militarism, the United States began building a secret base at Izembek Lagoon. In 5,000 years, this was the only human use not based on the region's rich natural resources. But the environment was a key to the base. The flat tundra made runway construction relatively easy, and the perpetual fog hid the runway from prying eyes.

Remains of human history are abundant amid the exuberant wildness of Izembek Refuge. The runways, roads and buildings of World War II are obvious. The practiced eye can also see the remains of the towns and villages of previous occupants. All the while, nearby communities of commercial fishermen continue the age-old tradition of harvesting the natural wealth of the refuge. 

Debra Corbett is the Alaska Region's historic preservation officer.

Events Showcasing the Refuges

This is a time of celebration because the Alaska National Interest Lands Conservation Act (ANILCA) is 30 years old in December, the same month that Izembek and Arctic National Wildlife Refuges are marking their 50th anniversaries.

Izembek and Arctic were first established by the Eisenhower administration on Dec. 6, 1960, as national wildlife ranges. They were renamed national wildlife refuges when ANILCA was enacted on Dec. 2, 1980. Among the commemorating events are:

Arctic Sanctuary: Images of the Arctic National Wildlife Refuge – This photo exhibit and accompanying book include large-scale photos and interpretive text. Photographer Jeff Jones' work conveys the scope, significance and beauty of the Arctic Refuge, while Laurie Hoyle's words combine to engage in a contemplative exploration of the refuge. The exhibit is at the University of Alaska Anchorage/Alaska Pacific University Consortium Library through Nov. 30 and will open at the Well Street Art Co. in Fairbanks on Dec. 3.

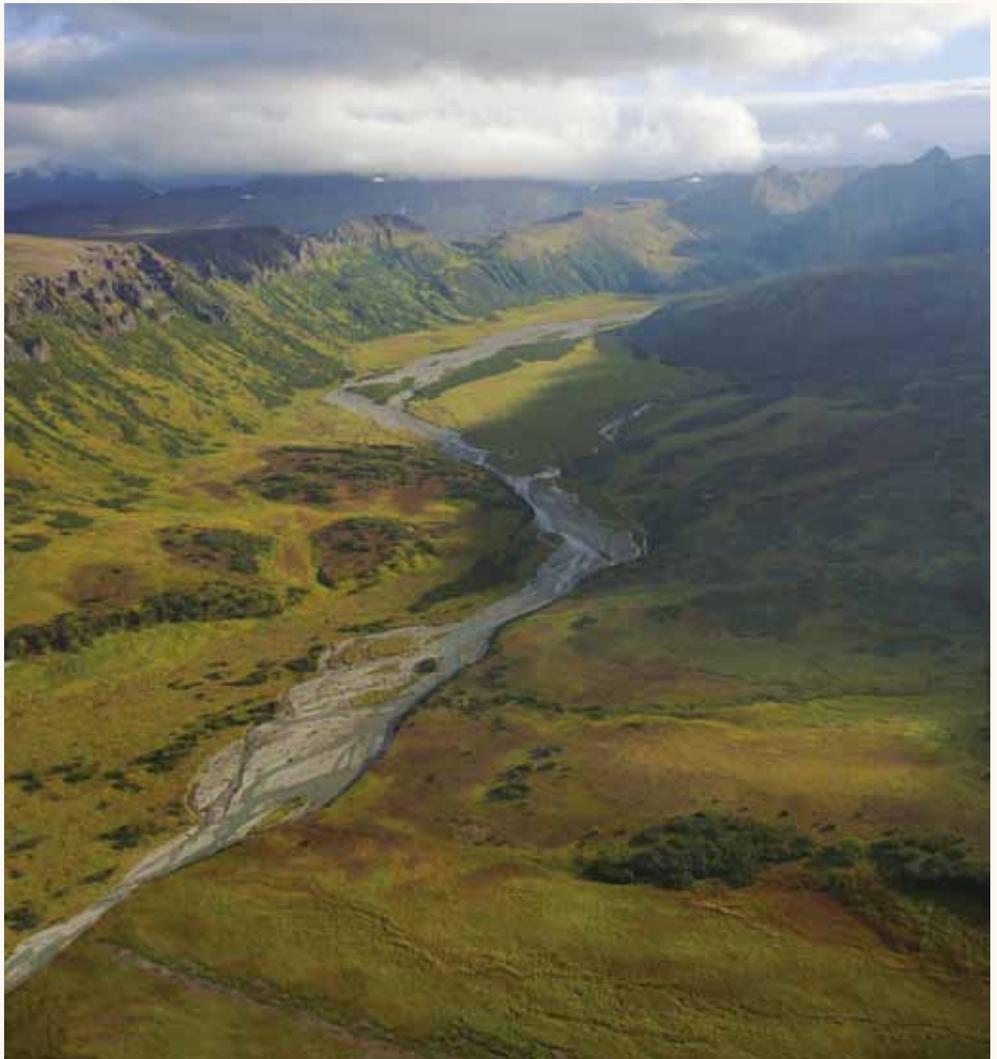
Incredible Izembek – Tom Collopy and Mary Frische, professional photographers and members of Friends of Alaska National Wildlife Refuges, have created the exhibit. Celebrations to showcase these photos have been held in Homer, Anchorage and Juneau, and will be held at Cold Bay Community Center on Dec. 4, 4 p.m. to 7 p.m. The celebrations include a reception with the photographers, short presentations about the history and wildlife of Izembek Refuge and a presentation about Bob "Sea Otter" Jones, who was pivotal to the refuge's establishment.

Wild Legacy – This original stage production is based on the writings of Olaus and Margaret "Mardy" Murie, who were instrumental in Arctic Refuge's establishment. Commissioned by the U.S. Fish and Wildlife Service, *Wild Legacy* is produced by Voices of

the South, a Memphis theater company. The play is to be performed on Dec. 4-5 at the University of Alaska Fairbanks Lee H. Salisbury Theater; on Dec. 8 at the Alaska Islands and Ocean Visitor Center in Homer; and on Dec. 10-12 at the University of Alaska Anchorage Wendy Williamson Theater. In addition, Voice of the South will hold theater workshops in Homer and Anchorage on Dec. 7 and Dec. 11, respectively.

National Conservation Training Center Symposium – NCTC in Shepherdstown, WV, will hold a symposium Jan. 18-23, 2011, on the history and science of the Arctic Refuge, including the *Wild Legacy* stage play, *America's Wildest Refuge* film and *Arctic Sanctuary* photo exhibit.

Greenwich, CT, Celebrations – The Bruce Museum will host the *Arctic Sanctuary* photo exhibit, and the local Audubon Society chapter will host *America's Wildest Refuge* film from March to May 2011. 



This photograph of the Joshua Green River Valley is part of the Incredible Izembek exhibit being showcased in Alaska. (Mary Frische/Tom Collopy)

Focus... Celebrating Alaska



Clockwise from above: Animal tracks and footprints converge at Arctic National Wildlife Refuge; cranberries are plentiful at Tetlin Refuge; bull caribou make their way in the Kobuk River at Selawik Refuge.



Clockwise from left: Wildflowers overlook Grant Point at Izembek National Wildlife Refuge; a canoer paddles at Kanuti Refuge; a Kodiak brown bear sow catches salmon at Kodiak Refuge.

PAGE 14-15 PHOTO CREDITS:

Tetlin Refuge cranberries and Kanuti Refuge canoer by Steve Hillebrand; Arctic Refuge footprints by Greg Weiler/USFWS; all others USFWS.

Focus... Celebrating Alaska

Subsistence: Cultural Touchstone and Survival Necessity

By Bruce Woods

Alaska's 16 national wildlife refuges differ from those elsewhere in the country in many ways. One distinct difference is that all 16 are open to the subsistence harvest of fish, wildlife and other resources by qualified users.

Across the state, including on refuges, approximately 123,000 rural Alaskans harvest almost 44 million pounds of food per year. That's about 375 pounds per person. Nowhere else in the United States is there such a heavy reliance on wild foods.

"The harvest of fish and wildlife is essential to their daily existence" because employment in rural Alaska is seasonal and sparse, and "the opportunity to have a job where you can get money and go down to the store and buy your goods is limited," says Pete Probasco, head of the federal Office of Subsistence Management.

Refuges play a vital role in Alaska's subsistence culture for at least two reasons. First, refuges are important habitat for birds, fish and wildlife, says Probasco. "So, for thousands of years, these rural communities also have been there. It all blends together." Second, the 1980 Alaska National Interest Lands Conservation Act (ANILCA) mandates such a role.

Title VIII of ANILCA says refuges and other public lands in Alaska must "provide the opportunity for rural residents engaged in a subsistence way of life to do so."

ANILCA defines a federally qualified user as a Native or non-Native Alaskan living in a community or area that has been determined to be rural. Rural determinations are made every 10 years, based on population; use of fish and wildlife; development and diversity of economy; community infrastructure; transportation; educational institutions; and grouping of communities that

are socially, economically and communally integrated.

Because there are 229 federally recognized tribes in Alaska, all with their own cultural customs, tastes and traditions, and because there is a vast array of habitat across the enormous state, the variety of hunted species is enormous, too.

In northern Alaska, in the village of Kaktovik on Arctic Refuge's coastal plain, marine mammals such as seals, walrus and whales are hunted. And not just for food. Hides and skins are used to make boats; intestines are used in clothing; blubber has many uses. Caribou is an important subsistence species in Arctic Refuge's interior. In western and southwestern Alaska – on or near Selawik, Koyukuk, Yukon Delta, Togiak, Becharof, Izembek, Alaska Maritime and Alaska Peninsula Refuges – salmon, moose and caribou are the primary subsistence species. In southeast Alaska, on units of Alaska Maritime Refuge, it's salmon, halibut and moose.

"Our Storehouse"

Collectively across the state, says Probasco, "the big driver is fish – with salmon being number one – followed by marine mammals and wildlife, then by migratory birds and ducks."

Subsistence harvests of migratory birds and marine mammals are not subject to ANILCA, though. Migratory bird harvests are managed under the Migratory Bird Treaty Act, marine mammal harvests under the Marine



Salmon, here drying at Koyukuk Refuge, is the number one subsistence species in Alaska. (Danielle G. Jerry/USFWS)

Mammal Protection Act. And migratory bird and marine mammal harvests are limited to Native Alaskans.

Although subsistence is important to many non-Native rural Alaskans, it is primal to the state's indigenous inhabitants. For generations, they have passed down the way of life, its culture and its values. In remote areas, where bread costs \$5 a loaf and store-bought meat and vegetables are unaffordable – and often undesirable – subsistence is a necessity.

"The wilderness out here is our storehouse," says Pete Abraham, a 60-something Native Alaskan who has been a refuge information technician at Togiak Refuge for almost 20 years. "Everything we harvest is from wilderness – not only animals and fish, but plants also. That's how we survive. The subsistence way of life is very important. If we lose it, we lose Alaska."



Bruce Woods is chief of media relations for the U.S. Fish and Wildlife Service Alaska Region.

“The Handiwork of Millions of Years of Patient Evolution”

Below is a letter that Lowell Sumner, a biologist with the National Park Service, wrote in 1985 to National Wildlife Refuge System colleagues gathered to mark the 25th anniversary of the Arctic National Wildlife Refuge and to discuss its future. Sumner and George Collins, a planner with the Park Service, had traveled extensively in northern Alaska in the early 1950s, surveying potential new park lands. They proposed that what is now the Arctic Refuge be protected as a wilderness wildlife range.

Dear People:

George Collins and I wish so very much that we could be with you during your deliberations on the Arctic National Wildlife Refuge. We shall be with you in our thoughts.

The Statue of Liberty rises from [a] smog-shrouded [island] in crowded New York Harbor, a human work of art – symbol of our American dream and a democracy that is 209 years old. Millions have just been spent to rescue it from pollution and corrosion, assuring its survival, and all over America millions of patriots rejoice.

In the far north, another American symbol, vast and magnificent, stretches from the basin of the Yukon up over the uninhabited Brooks Range, lofty and wild, then down across immense tundra plains, lake-dotted and threaded by arctic rivers scarcely explored – reaching at last to the Arctic Ocean cradling a perpetual ice cap. This is the Arctic National Wildlife Range, the establishment of which resulted from patient, heroic and diplomatic labors. Those who worked so hard to rescue it from ecological deterioration and to assure its survival rejoice. But no millions have been available so far to give it a security like that of the Statue of Liberty.

Yet ANWR is the handiwork of millions of years of patient evolution – the

handiwork of God, many would declare. Every plant and animal there today has struggled through uncounted thousands of years to adapt and survive, attaining perfection down to the finest details of structures and behavior. So far, no pages of this long history of interaction between environment and life have been torn out or rewritten by mankind for fame or profit. Here there still survives one of Planet Earth’s own works of art, and this one, too, symbolizes freedom: freedom from the crowding and pollution of our cities, freedom to continue, unhindered and forever if we are willing, the particular story of Planet Earth unfolding here – freedom for us as well, who need to come to the few out-of-the-way places still remaining where we can breathe freely, be inspired and understand a little of the majestic story of evolution, but also where we can learn to appreciate and respect the intricate and inscrutable unfolding of Earth’s destiny – when free from meddling human concerts and the urge to take possession of and use up what we so imperfectly understand.

If we are willing to give millions to protect a noble statue, how more than willing our nation ought to be to cherish and protect from harm the great natural spectacle, one of the last of its kind, where its native creatures can still



Muskoxen at Arctic National Wildlife Refuge. “Every plant and animal there today has struggled through uncounted thousands of years to adapt and survive, attaining perfection down to the finest details of structures and behavior,” wrote Lowell Sumner. (USFWS)

have freedom to pursue their future, so distant, mysterious and, to us as entranced custodians and spectators, scarcely imaginable as of now.

May your meeting lead to great gains in winning over wider public appreciation of and support for the Arctic National Wildlife Refuge. George and I will be thinking of you with love and hope always.

Sincerely,
Lowell Sumner

11/30/85



Focus... Celebrating Alaska

Walking and Working in Two Worlds

By Kevin Painter

A blizzard had been raging for days across the frozen tundra and marshes of the Yukon River delta. Bush plane flights had been suspended to and from villages across the South Carolina-size delta. Yet a snow-go (snowmobile) rider was traversing an ancient winter route used by Yup'ik Eskimo dog teams for centuries.

The route, a crucial piece of cultural knowledge, has been passed down through generations of Yup'ik people. It is one of countless traditional knowledge teachings that have sustained Alaska Native people for more than 10,000 years. On this wintry night, though, that traditional knowledge was serving another purpose: the mission of the National Wildlife Refuge System.

The snowmobiler, Andrew Kelly, was a 65-year-old Yup'ik Eskimo elder. He was proudly wearing the U.S. Fish and Wildlife Service uniform. As a refuge information technician (RIT), Kelly found himself traveling in two worlds – from his home village to represent Yukon Delta National Wildlife Refuge at another settlement 50 miles away. As RITs routinely do, Kelly was serving as the face, voice, eyes and ears of the

refuge. His objective was to explain the upcoming year's refuge management plans at a village meeting.

Kelly has since retired, but there are more than 25 RITs like him working for refuges in 100 of rural Alaska's 300 or so villages.

The RIT program debuted in 1984, four years after the Alaska National Interest Lands Conservation Act (ANILCA) was signed. Overnight, with a stroke of a pen, tens of millions of acres of Alaska Native homeland were under the management of the Refuge System. A wave of Western culture managers and biologists arrived from the Lower 48 to oversee activities on rural Alaska lands.

RITs as Ambassadors

Soon after ANILCA was enacted, the Service realized that relations with rural residents and tribal governments were deteriorating. But Yukon Delta Refuge managers had a plan to turn distrust and cynicism into partnership and shared values. They would use a local-hire provision in ANILCA to go into the villages and employ rural residents to be ambassadors for the national wildlife refuges.

The goal – then, as today – was to find individuals who understood and valued wildlife conservation for healthy ecosystems and for future generations. Then as today, the RIT program recognized that wildlife conservation was a mutual keystone of the Refuge System and Alaska Native elder-led cultures. Like ancient travel routes, wildlife conservation has

been passed down century after century from elders to youth.

The dedicated men and women of the RIT program lead by example as they enter remote villages to obtain wildlife harvest data, present environmental education and attend meetings. On a given day, an RIT might explain to tribal leaders an upcoming change to local subsistence fishing regulations and outline the science behind the decision. While in the village, the RIT might tell students how they can buy federal Duck Stamps and benefit nesting Alaskan waterfowl that winter in the Lower 48. The RIT might meet with school administrators to iron out details of a science and culture camp. At the week-long summer camp, the RIT might serve as educator, mentor and elder to the students as they delve into the use of Western science and management to understand and conserve wildlife.

Often, English is second to the Native language. RITs sometimes become interpreters, literally. They accompany refuge managers and biologists to village meetings and translate regulations or management practices. They work out conflicts and misunderstandings.

“It looks like a United Nations meeting,” says Mike Boylan, an Alaska Region refuge supervisor. “Tribal leaders and refuge staff are wearing headsets and talking into microphones, and the RITs are interpreting for both sovereign parties. That is when it really sinks in that the RITs are walking and working in two worlds.”

Kevin Painter is an interpretive and environmental education specialist in the Alaska Region office in Anchorage.



Refuge information technician Clyde Ramoth visits with an Inupiat elder at Selawik National Wildlife Refuge in western Alaska. (Steve Hillebrand/USFWS)

25 Years of Fire Data in Hand

By Jennifer Anderson

For desert bighorn sheep, every glance is like looking through binoculars. And this keen eyesight keeps the sheep safe — unless juniper and piñon pine grow too thick, creating ideal cover for mountain lions waiting to pounce.

In New Mexico, where the state lists desert bighorn sheep as endangered, San Andres National Wildlife Refuge in 1999 introduced prescribed burns to beat back the trees and otherwise enhance habitat not only for sheep but also for mule deer and other desert animals.

But whether the burns — set in various places approximately every other year — were achieving the desired outcome was difficult to discern. “We had lots of questions,” says Patrick Donnelly, a Southwest Region remote sensing scientist/biogeographer. “Was fire our most efficient management tool? How well could we measure its cumulative effect on the landscape?”

Thus began a two-year, remote-sensing habitat-monitoring project, completed in June 2010, using Landsat satellite imagery to inventory fires from 1984 to 2009. Exemplifying the U.S. Fish and Wildlife Service’s approach to making management decisions based on a landscape perspective, the analysis encompassed not just San Andres Refuge but also adjacent federal and state lands, including Bosque del Apache National Wildlife Refuge and White Sands Missile Range — more than 3 million acres in all.

“Think of the analysis as a big map,” says Donnelly, describing the results as a fire management inventory. Using GIS (geographic information system), the inventory illustrates a spatially explicit landscape in layers, one year superimposed on the next, using polygons, to show the temporal and spatial variability of historic fires and their intensities.

Confirming Fires

Among other details, the data are beginning to reveal: the extent of plant

communities burned; the impacts of drought; fire frequencies; and how vegetation responds after a burn. They also indicate whether the cause was natural (lightning) or human-induced, such as from missile firing or prescribed burns.

Although Landsat collects data every two weeks year-round, the biologists looked only at two time periods: June, when natural fires typically peak, and October, just before winter sets in and reduces the ability to measure burn scars.

With each new year’s data, calculations can be made to determine the changes to the vegetation caused by fire, Donnelly says. The goal is to better understand where and when lightning fires have occurred and how the vegetation has responded, and then to use prescribed burns to mimic those natural occurrences to enhance habitat.

The fire inventory “lets us see where we have had fires, and how the fire behaved on the landscape,” says Mara Weisenberger, wildlife biologist at San Andres Refuge. The analysis even picks up lightning fires “so remote, no one even knew about them.”

In total, 96 fires covering 165,155 acres were inventoried. Field tests have confirmed the accuracy of the data, Weisenberger says, explaining that data from the first year — 2001 — were downloaded onto a GPS unit that can display map data when taken to areas where fire was indicated. “We were able to confirm the severity and extent of several fires.”

San Andres Refuge hopes to expand the data set each year. The extent to which



A habitat-monitoring project using Landsat imagery to inventory fires helps San Andres Refuge protect desert bighorn sheep. (Mara Weisenberger/USFWS)

this fire history will affect management decisions should become clear soon, once the analysis begins. With 25 years of fire data in hand, Weisenberger says, areas that have burned can be compared with those that have never burned, providing control and test sites.

Related Projects

The data also will be useful for related projects, including a partnership with a University of New Mexico professor to establish vegetative plots to study fire effects. “We can use the data to help him place the plots and then look at how the vegetation responds to the burns,” Weisenberger says.

Other benefits are yet to come — and may exceed the boundaries of the protected area. Weisenberger and Donnelly say that they are collaborating on a project to publish their results and inform other refuges about prescribed burns management decisions.

“Our analysis of this area is specific to this ecosystem,” Donnelly says. “But the process of deriving the data can be applicable to other refuges.”

Jennifer Anderson is a frequent contributor to Refuge Update.

Around the Refuge System

California

For the first time in half a century, more than 100 California condors are living in the wild in the state, according to Hopper Mountain National Wildlife Refuge Complex, the headquarters for the multi-partner California Condor Recovery Program. Worldwide, according to program estimates, there are 383 California condors alive today, about half in captivity and half in the wild. Before the program began, the condor population was down to 22 in the wild in 1982. The goal of the program, whose partners include the San Diego Zoo and Wild Animal Park, is to establish two geographically separate wild populations of the endangered condor, one in California and the other in Arizona, each with 150 birds and at least 15 breeding pairs. Young condors born in captivity as part of the program's sustained-breeding effort are released into the wild every fall at three sites in California, including Bitter Creek National Wildlife Refuge, one site in Arizona and one in Baja, Mexico. Eleven juveniles were scheduled to be released this fall.

Vermont

The U.S. Fish and Wildlife Service has accepted the donation of a 402-acre parcel as the Eagle Point Unit of Missisquoi National Wildlife Refuge, in accordance with the terms of the trust of Michael Dunn, a philanthropist who died in 2007. The property, on the shore of Lake Memphremagog, consists of wetland, upland and lakeshore habitats. It supports a diversity of wildlife species and offers wildlife-oriented public use opportunities. The Service is developing a cooperative agreement with the Vermont Fish & Wildlife Department for long-term management of the property in a manner similar to a wildlife management area. The 27-mile-long lake straddles the border between Vermont and Quebec, Canada. Dunn, a native of Montreal who became a U.S. citizen, donated similar property in Quebec to Canada for conservation.

Connecticut

The Silvio O. Conte National Fish and Wildlife Refuge's mobile visitor

center made its debut this fall at the Northeast Waterfowl Festival in East Hartford. The "WOW Express" (Watershed on Wheels) is actually two trailers with colorful nature murals and maps on their sides. One is a 28-foot "immersion experience" trailer, and the other is a 16-foot trailer in which eight portable exhibits are stored for display at destinations in the 396 communities throughout the 7.2 million-acre Connecticut River watershed that is the refuge's domain. The festival was the first stop for the mobile visitor center, which will be on the road for as many as 26 weeks a year as it travels to schools, fairs, summer camps, environmental centers and conferences. Conte Refuge, based in Massachusetts, was established to conserve the Connecticut River watershed in Connecticut, Massachusetts, New Hampshire and Vermont. The working area of the mobile center – which was featured in the March/April issue of *Refuge Update* – stretches 400 miles from the Canadian border on the north to Long Island Sound on the south.

New Guide to Bird Conservation

George Fenwick, Michael Parr and Daniel Lebbin of the American Bird Conservancy have co-authored a new book titled *The American Bird Conservancy Guide to Bird Conservation*. "The book shows the



A California condor soars over Bitter Creek National Wildlife Refuge. More than 100 condors now live in the wild in the state. (USFWS)

complete seasonal range for a given species," says Larry Williams, chief of the Refuge System Division of Budget, Performance and Workforce. "In this way, it quickly shows that many species we manage for in the Refuge System spend half their year in Central and South America. That's a fact we often lose sight of when we are trying to best use our dollars to conserve a given species." The 456-page, color-photo-filled book was published this fall by the University of Chicago Press. "It summarizes, in a very handy way, the threats and the needed conservation actions for each species," says Williams. "On top of that, it recognizes how important our refuges are to so many individual species."

Upper Mississippi River

The Upper Mississippi River floodplain, which includes two national wildlife refuges, has been designated a Wetland of International Importance by the Ramsar Convention. The designation covers slightly more than 300,000 acres of federal and state lands and waters in Minnesota, Wisconsin, Iowa and Illinois. It includes all of Upper Mississippi River National Wildlife and Fish Refuge and Wisconsin's Trempealeau National Wildlife Refuge. The floodplain is the 27th U.S. wetland designated under the convention, which was formed in 1971 and joined by the United States in 1987.

Upper Mississippi River Refuge manager Kevin Foerster said the lands and waters support more than 200 nesting pairs of bald eagles, 119 species of fish and 42 species of mussels and provide migration habitat for up to 50 percent of the world's population of canvasback ducks.

Georgia

Okefenokee National Wildlife Refuge, the largest refuge in the eastern United States at 402,000 acres, recently got a little bigger. The Nature Conservancy (TNC) purchased 1,046 acres adjacent to the refuge from Rayonier Inc. in late August and then immediately donated the land to the U.S. Fish and Wildlife Service. The land, three separate tracts on the northwest edge of the refuge, is scheduled to be returned to a longleaf pine forest soon, when TNC begins to plant trees. The area will be managed for threatened and endangered species, such as the red-cockaded woodpecker, and for black bears, amphibians, wading birds and numerous passerine birds. The newly acquired land provides extra room to maneuver when fighting wildfires, which have impacted the refuge in recent years.

Environmental Leadership Awards

A Refuge System game preserve, three refuges and two employees are among the recipients of 2010 Environmental Leadership Awards given by the U.S. Fish and Wildlife Service. Sullys Hill National Game Preserve in North



The Upper Mississippi River floodplain, which includes two national wildlife refuges, has been designated a Wetland of International Importance. (Alan Stankevitz)

Dakota was cited for its waste and pollution prevention practices. Sheldon-Hart Mountain National Wildlife Refuge Complex in Oregon and Nevada was honored for its innovative approach to sustainable design and green buildings. Theodore Roosevelt Refuge Complex in Mississippi was recognized for its recycling of scrap materials and sustainable reuse of building materials. Parker River Refuge in Massachusetts was commended for replacing a failing geothermal heating system with a natural-gas-fired Energy Star-rated heating and ventilating system that works with a photovoltaic array to reduce energy consumption at its visitor center and headquarters. Individually, Frank Drauszewski of Parker River Refuge was cited for his use of the photovoltaic panels and James Britt of the Northeast Region office of law enforcement was recognized for promoting the use of non-toxic "green" ammunition.

Florida-Texas

More than 100 SLAMM (Sea Level Affecting Marshes Model) analyses on

national wildlife refuges have been completed. In September, the 100th analysis – of conditions at Archie Carr National Wildlife Refuge in Florida – was finished, and in October the 101st, at Aransas Refuge in Texas, was completed. By the end of 2011, all Atlantic Coast and Gulf Coast refuges are expected to have SLAMM reports. Pacific Coast and island refuges, too, are largely done. SLAMM is the primary tool for sea-level rise planning in the Refuge System. The SLAMM analyses, which simulate the dominant processes involved in wetland conversions and shoreline modifications during long-term sea-level rise, have been conducted in collaboration with the National Wetlands Inventory and partners such as the National Wildlife Federation and the University of Maryland. SLAMM maps and data are especially useful for land acquisition planning, habitat management planning and outreach on sea-level rise. 

Inmates Lend a Hand for Conservation

By Susan Morse

Inmates at Saginaw Correctional Facility in Michigan are helping Shiawassee National Wildlife Refuge conserve wildlife habitat by growing native prairie grass and wildflowers from seed.

In a program modeled after a now-defunct Minnesota effort, prison inmates prepare and sow seeds collected from the refuge and tend plants once they've germinated. When the plants are mature, they are trucked to the refuge for transplanting on former cropland.

"It's a great program," says deputy refuge manager Ed DeVries, who last year helped transplant 60,000 prison-grown forbs and prairie grasses. "We're seeing the results in some of the fields planted with these seedlings."

Ed Rosek, administrative assistant to the warden at Saginaw Correctional Facility and the holder of a degree in natural resources, shares DeVries's enthusiasm. "One of the things we're growing is prairie cordgrass," he says. "Everyone told us we couldn't grow it from seed, and we're doing it." He hopes to see the program spread to other areas, in Michigan and beyond.

This year, the program's third, refuge staff planted more than 10,000 seedlings of 17 lakeplain wet prairie species in one 44-acre field. Among the species planted were swamp milkweed, spotted Joe-Pye weed, common boneset and wild bergamot. The planting was funded through a grant with Ducks Unlimited. Another 30,000 prison-grown plant plugs – including Culver's root, turtlehead and mad-dog skullcap – were planted in a separate 15-acre field.

It is all part of a larger effort. Ten thousand years ago, the land that is Shiawassee Refuge was covered by a large, glacial lake. Later, for thousands of years, it was a vast wetland and an attractive hunting and gathering area for early cultures and Native American tribes. In the early 1900s, farmers began converting the land for crops. By 1950, a system of pumps, drainage tile,



Saginaw Correctional Facility inmates tend to seedlings to be planted at Shiawassee Refuge. (USFWS)

ditches and dikes were put into place to make what is now the refuge and its surroundings an extensive agricultural area. The refuge was established in 1953 to restore and enhance the historically significant wetland for migratory waterfowl. Today, the refuge, which is in central Michigan 100 miles northwest of Detroit, contains about 9,500 acres of bottomland hardwood forests, marshes, pools, fields and croplands.

Restoring native plants, DeVries says, is especially important to nesting birds and pollinators – butterflies, bees, moths and beetles – upon which many species depend. Some pollinators use only specific plants to lay their eggs; their larvae depend on these plants to grow. Native grasslands also provide cover for ground-nesting birds, such as eastern meadowlarks, grasshopper sparrows and indigo buntings. Healthy stands of native plants can also help keep out invasive plants.

The inspiration for the effort was a seed-growing partnership established several years ago between Big Stone National Wildlife Refuge in Minnesota and a prison, now closed, in Appleton, MN.

Rosek measures success not just by how much prairie is restored but what happens long-term.

"If I could take my grandson one day to Shiawassee Refuge and show him this is what the land looked like before we suburbanized the area, that's a success," Rosek says. "If I can take one prisoner, and maybe get him a job, or he goes back out on the streets and doesn't come back to prison because he learned he can contribute to society, that's success."

New spots in the horticultural class at Saginaw Correctional Facility are wait-listed. Lifers get priority because growing wild seed can be a long process. The project also teaches some shorter-term inmates marketable skills. One graduate is now establishing an urban garden in Detroit, says Rosek. "They're sending us e-mail that he's doing head and shoulders above everyone else."



Susan Morse is a writer-editor in the National Wildlife Refuge System Branch of Communication.

The Return of Nisqually Refuge Estuary

By Alison Howard

In the mid-1990s, a new management plan for Nisqually National Wildlife Refuge in Washington was taking shape – and addressing a central question about a century-old dike around the Nisqually River delta: Why keep the dike when razing it could restore hundreds of acres of estuary on Puget Sound and reclaim them as habitat for salmon, shorebirds, sea birds and salt marsh vegetation?

The dike, built to create a dairy farm out of the estuary, surrounded 1,000 acres of freshwater wetlands in the 3,000-acre refuge 10 miles northeast of Olympia, WA. But as coastal pollution advanced and saltwater-dependent wildlife declined, “we made the commitment to look at everything,” says refuge manager Jean Takekawa. “What was the highest and best use the refuge could provide to the watershed? It was so important to dare to rethink it.”

The result of asking tough questions was a 12-year, \$13 million project – now nearly complete – to return 762 acres of the delta to their natural state and create a place for refuge visitors to see it.

About 80 percent of estuary habitat on Puget Sound has been lost to development, according to Takekawa, who says the project is a big step in the other direction.

A shorter, inland dike was erected in 2008 to preserve public access to the refuge, protect its headquarters and form a smaller freshwater wetland. The old dike was dismantled last year. As soon as the first section fell, the tide began finding its way into its old sloughs and creating new ones, now 21 miles in all. Salmon, ducks and other saltwater species are returning; invasive grasses are dying. Very soon – as early as December, Takekawa hopes – refuge visitors will be able to venture onto a new boardwalk and watch as the estuary regenerates.

The \$2.7 million boardwalk, under construction with American Recovery and Reinvestment Act funding, is the



The boardwalk, with its expansive views, is the capstone to a 12-year, \$13 million delta restoration project at Nisqually National Wildlife Refuge in Washington. (Jesse Barham/USFWS)

project’s capstone and is eagerly awaited by the public. Visitors who loved walking the 5½-mile loop trail atop the old dike hoped it could simply be breached “here and there,” Takekawa says. “But even portions of it acted as barriers to water and fish. We needed that sheet-flow of water so that sediments and soils could pile up and build salt marsh.”

“Really Unique”

Vantage points along the one-mile-long, eight-foot-wide boardwalk will include an observation tower; a wildlife blind; and four push-outs for setting up a tripod or just for lingering. The end will be a covered octagonal platform with views in all directions. “Normally you’d be doing this in a boat – if you had a boat,” Takekawa says. “The opportunity to be immersed in an estuary at high and low tide is really unique.”

The restoration was a partnership that featured engineering by Ducks Unlimited and drew on the expertise of the Nisqually Indian tribe, which had completed smaller estuary restorations on tribal lands managed as part of the refuge. The tribe and the refuge are now monitoring the return of salmon and

other fish, with support from the U.S. Geological Survey.

Ducks Unlimited also helped secure \$5 million in grants to add to state, federal and private funds, including a \$2.5 million grant from all five south Puget Sound watersheds. The other four watersheds “had to give up local projects. It’s the first time they’ve banded together to make something larger happen,” Takekawa says.

“Large” and all its synonyms are words she uses to describe the restoration.

“There really is nothing else of this scope going on in the Northwest,” she says. “It’s a really important step in recovering Puget Sound. It’s going to take tremendous will to keep it from becoming a completely compromised system – and we have that chance. Our story is about hope for the future. It’s possible to do big things.” 🦋

Alison Howard is a Virginia-based freelance writer-editor.

12 Refuges Acquire Waterfowl Habitat

The National Wildlife Refuge System grew by about 12,000 acres of quality waterfowl habitat when the Migratory Bird Conservation Commission (MBCC) approved more than \$21 million in land acquisitions at 12 refuges in its final meeting of 2010.

The purchases, announced in September by Secretary of the Interior Ken Salazar, were supported by the Migratory Bird Conservation Fund (MBCF), which includes proceeds from the sales of the Migratory Bird Hunting and Conservation Stamp, aka the federal Duck Stamp.

The MBCC also approved more than \$23 million in federal grants under the North American Wetlands Conservation Act for projects to protect, restore and enhance more than 148,000 acres of wetlands and associated habitat nationally.

Here are the refuge acquisitions:

Boundary Additions And Price Approvals

Great Dismal Swamp National Wildlife Refuge, VA and NC – 233 acres in fee for \$1.4 million; to restore and manage additional native forested wetland communities adjacent to the Pasquotank River system.

Humboldt Bay Refuge, CA – 167 acres in fee for \$1.2 million; to enhance management capability and allow for native plant restoration.

San Bernard Refuge, TX – 4,472 acres in fee for \$3.5 million; to manage the tract as habitat for waterfowl, wading birds, neotropical migrants, and forests and grasslands.

Silvio O. Conte Refuge, Pondicherry Division, NH – 510 acres in fee for \$385,000; to promote and enhance habitat for waterfowl, particularly American black ducks, wading birds and other high-priority migratory birds.

Trinity River Refuge, TX – 161 acres in fee for \$160,500; to protect important waterfowl habitat in the Trinity River floodplain.

Wallkill River Refuge, NJ and NY – 43



This distinctive habitat – acquired at Humboldt Bay Refuge, CA, to allow for native plant restoration – contains coastal dunes, scrub forest and beachfront. (USFWS)

acres in fee for \$123,000; to fill a gap in the refuge boundary and allow for consistent habitat management over a broad area.

Price Approvals

Cache River Refuge, AR – 242 acres in fee for \$871,000; to restore the land to full wildlife and recreational potential, provide contiguous forestland managed for migratory waterfowl, and restore hydrologic functions to the lower Cache River watershed.

Stone Lakes Refuge, CA – 104 acres in fee for \$400,000; to secure an essential corridor of wintering habitat for tundra swans, white-fronted geese and various ducks.

Tulare Basin Wildlife Management Area, CA – 1,250 acres in easement for \$2.5 million; to secure habitat protection within the individual ownerships and create contiguous habitat with compatible land uses.

Umbagog Refuge, NH – 914 acres in fee for \$1 million; to achieve refuge biological and public-use objectives, including public hunting.

Upper Ouachita Refuge, LA – 3,875

acres in fee for \$9.7 million; to manage a portion of the farmed tract for moist soil and reforest the remainder in bottomland hardwoods, and to reconnect the hydrology on the wooded tract with the floodplain.

Price Re-Approval

St. Catherine Creek Refuge, MS – The Service seeks to extend a five-year lease of \$15,565 per year on a 502-acre tract of bottomland hardwood and cypress sloughs as part of the waterfowl sanctuary area.

Since 1929, the MBCC has met several times a year to consider land purchases through the MBCF. Its next meeting is scheduled for March 9, 2011. For more information about the commission, go to <http://www.fws.gov/refuges/realty/mbcc.html>. 

A Good Year for Attwater's Prairie Chickens

By Bill O'Brian

Terry Rossignol and his partners at Attwater Prairie Chicken National Wildlife Refuge in southeast Texas are so committed to saving the refuge's namesake from extinction they are willing to feed insects to the birds. Literally. By hand. Year after year.

There are signs it's working. The species recovery effort hit a new high this summer when at least 58 wild-hatched chicks were confirmed on the refuge.

The recovery effort, which the refuge has led since 1988, has a long way to go, though, because the Attwater's prairie chicken (APC) was nearly wiped out by severe loss of habitat before being listed as endangered in 1967.

More than a century ago, up to one million APC lived on six million acres of coastal prairie habitat in Texas and Louisiana. Today, less than one percent of that coastal prairie remains, and fewer than 100 of the birds live on three plots of Texas land: the 10,528-acre refuge 60 miles west of Houston; The Nature Conservancy's Texas City Prairie Preserve in Galveston County; and a private parcel in Goliad County.

Habitat and Population Measures

To enable survival of this imperiled grouse – which is known for its elaborate courtship ritual, its booming sound and its cultural importance to Native Americans – the refuge takes a two-pronged approach. In partnership with nonprofit organizations, universities, zoos, the Texas Parks & Wildlife Department, the federal Natural Resource Conservation Service, private landowners and others, the refuge restores habitat and takes measures to increase the APC population.

On the habitat side, the refuge intensively manages land and encourages ranchers to do the same. To restore coastal prairie habitat for the birds, the refuge conducts prescribed burns to suppress invasive brush and restore native grasses. Through the Coastal Prairie Conservation Initiative,



The male Attwater's prairie chicken inflates its yellow air sac and emits a booming sound as part of its elaborate courtship ritual. (George Levandoski)

private ranchers do similar burns, reduce cattle stock to avoid overgrazing and mechanically remove brush. The birds “are a species that like the wide-open space that grasslands provide. They aren't much for sitting near trees,” says Rossignol, the refuge manager since 1996.

The refuge manages three small food plots for the grouse, which at maturity is about 14 inches tall and weighs roughly two pounds. The food plots not only offer important winter food, they are also major social-gathering spots for the APC in the fall. “They are really quite a gregarious little bunch of birds,” says Rossignol.

“Head-Start Program”

On the population side, the refuge oversees a captive-breeding program that involves Fossil Rim Wildlife Center, Texas A&M University, Houston Zoo, San Antonio Zoo, SeaWorld of Texas, Caldwell Zoo and Abilene Zoo. The refuge coordinates the release of 175 to 200 captive-bred birds annually back into the wild at the refuge, the preserve and the private land.

To increase chick survival in the wild, each spring the refuge takes steps to keep predators, including snakes and fire ants, away from nests. Once a hen hatches her eggs, refuge staff members place a “brood box” over the chicks and the hen to protect them. For the next two weeks, staff members feed insects to the chicks. The insects are collected from around the refuge by staff, interns and volunteers using “a modified seed collector,”

says Rossignol. “This is what we call the head-start program. The hope is that we get the chicks past the critical first two weeks of life.”

For the Attwater's prairie chicken to flourish, says Rossignol, the consistent release of at least 500 birds a year from the captive-breeding program and substantial reproduction in the wild will be needed. But he is optimistic:

“A lot of people may think the Attwater's is a dead-end road, but, after the success we have seen this year, I really think the species has a chance.” 

2011 Conference: Just a Click Away — continued from page 1

habitat conservation and a strong Refuge System.

The Web site's blog allows people to share news and observations about wildlife conservation. Users are encouraged to communicate about the Conserving the Future process and conference via Facebook and Twitter — just two of many media tools that will be used to bring thousands of people “into” the conference, even if they are not physically in Madison during the week of July 10.

Perhaps most important at this juncture, the site allows people to read and comment on the draft vision documents written by the five Core Teams in topic areas: conservation planning and design; conservation delivery; conservation science; relevance to a changing America; and leadership and organizational excellence. The Core Teams and the conference steering committee met in Madison in mid-November to begin to refine the draft vision documents.

The Conserving the Future conference will ratify the overall vision document — a compilation of the Core Teams' five individual vision statements. While the document will set the strategic direction for Refuge System employees for the next decade, it will also set the tone and direction for Friends groups and supporters.

“Right now, the Core Teams' draft vision statements touch on virtually everything we do in the Refuge System,” says Chief Greg Siekaniec. “As we refine these

statements, key issues will emerge — along with their solutions. Right now, all of us in the Refuge System — and those who support national wildlife refuges — should be posing essential questions. For example, how can we leverage our environmental education program with the nation's school systems? What kind of outreach programs should we implement so the Refuge System can better relate to the American people as demographics change?

“We hope that the Web site generates those kinds of discussions well before the July conference. We want to hear robust discussion online — and I can tell you, the steering committee and the Core Teams take those discussions seriously.”

As a partner in the process, the NWRA has met with about 60 Friends groups, Service retirees, organizations that belong to the Cooperative Alliance for Refuge Enhancement (CARE) and other non-governmental organizations. The NWRA has gathered hundreds of comments to be integrated into the vision document.



The “Conserving the Future: Wildlife Refuges and the Next Generation” Web site at www.americaswildlife.org is open to Service employees and the public.

While specifics are still being ironed out, the conference also will reach out to youth, partially to create awareness about natural resource career paths.

“We’re calling this whole process ‘Conserving the Future.’ It is no accident, though, that we have a secondary — but equally important — tagline to the conference name, and that is ‘Wildlife Refuges and the Next Generation,’” says Siekaniec. “The conference is building on the conservation legacy we have inherited from giants like Aldo Leopold. But wildlife conservation can thrive only if the next generation is as passionate as our historic leaders were.”

ANILCA at 30: Still the Backbone of the Refuge System — continued from page 10

a road through designated wilderness. Arctic Refuge remains Alaska's ultimate economic prize because its neighbor, Prudhoe Bay, is slowing down after 33 years and 13 billion barrels as North America's largest oil field.

Jimmy Carter called ANILCA “one of my proudest accomplishments as President.” But its significance might best be seen in the fact that many people

remained unhappy even as it was being signed in December 1980.

Some, such as Sierra Club president Edgar Wayburn, believed it could have been better. “ANILCA is not an end, but a beginning,” he said then. “Alaska's superb wildlands must have more secure protection. And all concerned Americans will continue to work together until we gain it.”

Others knew it could have been worse. “We are not finished, Mr. President. We've really just started,” Sen. Ted Stevens of Alaska said then. “We know that the time will come when those resources will be demanded by other Americans.”

Mike Boylan is a refuge supervisor in Alaska.

Cherry Valley Refuge Established in Pennsylvania — continued from page 1

Service Acting Director Rowan Gould says, “Cherry Valley is a model for the President’s America’s Great Outdoors Initiative. It is an example of how private citizens and local communities can safeguard the places they care about. The Service is pleased to be part of the citizen-led partnership that helped create this refuge.”

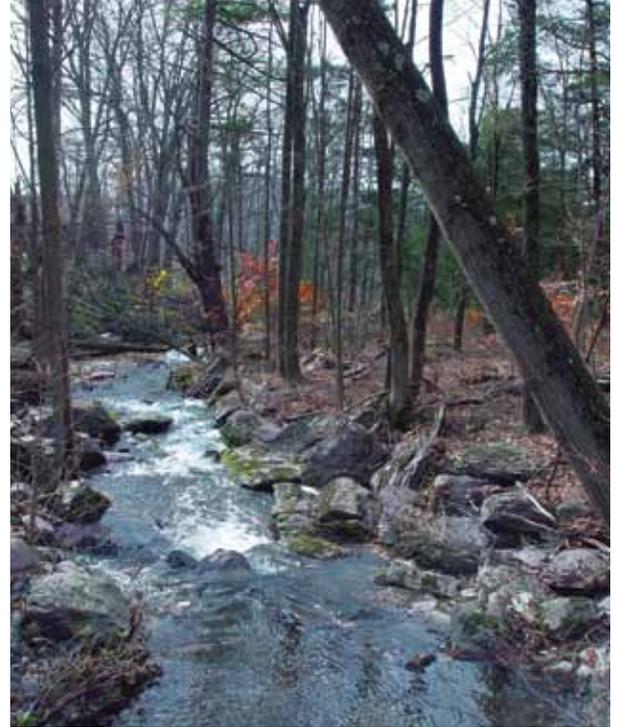
The refuge was formally approved by the Service in December 2008. Since then, the Service has been working with the Cherry Valley National Wildlife Refuge Partnership, Friends of Cherry Valley and local citizens to identify property to purchase within the acquisition boundary for the refuge. The partnership includes The Nature Conservancy, the Pennsylvania Fish and Boat Commission, the Pennsylvania Game Commission, the Pennsylvania Natural Heritage Program, the National Park Service, the Monroe County Planning Commission, the Monroe County Conservation District, Northampton Community College, East Stroudsburg University, the Appalachian Trail Conservancy and the Pocono Avian Research Center.

Horne describes the refuge’s first parcel as a mix of hardwood forest habitat: woodland uplands, a riparian corridor and “promising wetlands in terms of bog turtle management.” A primary short-term goal of the refuge, he says, is “to work with our partners in the valley to get a handle on where the bog turtles are and what they need. We will identify wetlands that are in the most need of restoration and get working on them first.”

The bog turtle’s habitat is highly susceptible to the natural succession of trees encroaching on wetlands. Horne plans to manage refuge wetlands to make sure they don’t become degraded by such encroachment, and staff will take steps to “open them back up when necessary.”

Debra Schuler, president of the Friends of Cherry Valley, describes the first parcel as “a doorway to the refuge boundary area” at the west end of the valley near the headwaters of Cherry Creek, which flows into the Delaware River. She calls the parcel “a very beautiful piece of property with already established trails through wonderful woodlands.”

Within the Cherry Valley Refuge boundary, says Horne, are “a lot of great and unique habitats that are not common in this part of Pennsylvania” — including limestone, spring-fed wetlands, or fens. The refuge will also protect part of the Kittatinny Ridge, a major avenue for migrating birds of prey, songbirds, waterfowl and bats. In addition, the refuge will conserve the valley’s cultural heritage, which, Horne says, is a rich mix of historical Native American, Colonial, agricultural and wildlife components.



Cherry Valley Refuge, 75 miles west of New York City and 100 miles north of Philadelphia, “is a model for the President’s America’s Great Outdoors Initiative,” says Service Acting Director Rowan Gould. (Cole Lawson/Friends of Cherry Valley)

Cherry Valley Refuge is the third national wildlife refuge entirely in Pennsylvania. The other two are John Heinz National Wildlife Refuge at Tinicum in Philadelphia and Erie Refuge in the northwestern part of the state. Cherry Valley Refuge is the second new Refuge System unit established this year. Tulare Basin Wildlife Management Area in central California was established in March. 🦋

The Arctic Refuge: “Our Geography of Hope” — continued from page 11

As the Muries intended, the struggle over the future of the refuge did become emblematic of the larger contest between competing views of the appropriate relationship between postwar American society and its rapidly changing environment. But the question that their generation considered has often reemerged: Which notion of progress should this

landscape represent? Should “progress” be considered an ever-higher material standard of living? Or should it emphasize sustainability?

The Arctic National Wildlife Refuge remains the finest example of the wilderness that serves as, in Wallace Stegner’s phrase, “our geography of hope.” That’s the reason millions who will never visit the refuge find satisfaction,

inspiration and even hope in *just knowing* it’s there. 🦋

Roger Kaye is a wilderness specialist and pilot at Arctic National Wildlife Refuge. A version of this article originally appeared in the April 2010 issue of the International Journal of Wilderness.



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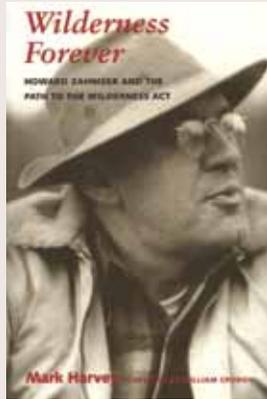
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A Look Back ... Howard Zahniser

Howard Zahniser was known in Washington, DC, for his genial personality, his poetic prose and his coat. A tailor made the coat with multiple oversize pockets to hold handouts and drafts of legislation while Zahniser made his rounds on Capitol Hill in the 1940s, '50s and '60s.

Born in Pennsylvania in 1906, Zahniser taught school and worked as a newspaper reporter before becoming a writer-editor for the U.S. Fish and Wildlife Service in its earliest days, when he worked with its first director, Ira Gabrielson.

In 1945, his wife pregnant with their fourth child, he left the security of government service and became executive secretary of The Wilderness Society, then a fledgling organization. He remained there for the rest of his life, working closely with wildlife biologist Olaus Murie. They were an unlikely pair – Murie preferred his log cabin in Moose, WY, while Zahniser roamed the halls and offices of the nation’s capital. Together, they built The Wilderness Society and worked tirelessly for federal legislation



This biography of Howard Zahniser (1906-1964) was published in 2005.

to provide permanent protection for wilderness lands.

Zahniser wrote the first draft of the Wilderness Act in 1956, with its eloquent definition: “A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and community of life are untrammelled by man, where man himself is a visitor who does not remain.”

The son and nephew of ministers, he often spoke of wilderness in spiritual

terms, believing its protection was “vital for providing spiritual uplift in an increasingly mechanized and urbanized society,” according to biographer Mark Harvey.

Zahniser influenced numerous rewrites of the Wilderness Act, attended all 18 public hearings on the bill, personally lobbied virtually every member of Congress and held together a coalition of conservation organizations, most small then. But his chronically weak heart gave out on May 15, 1964. The *Washington Post* wrote that there was “special poignancy in the death of a man on the apparent eve of his attaining the goal for which he had long and devotedly labored.” Less than five months later, President Lyndon B. Johnson signed the Wilderness Act of 1964 into law, seated next to the widows of both Zahniser and Murie.

Then-Sen. Hubert Humphrey remarked that, “Howard Zahniser has left for all time to come a legacy to future generations which neither time nor man will ever erase.” 

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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.