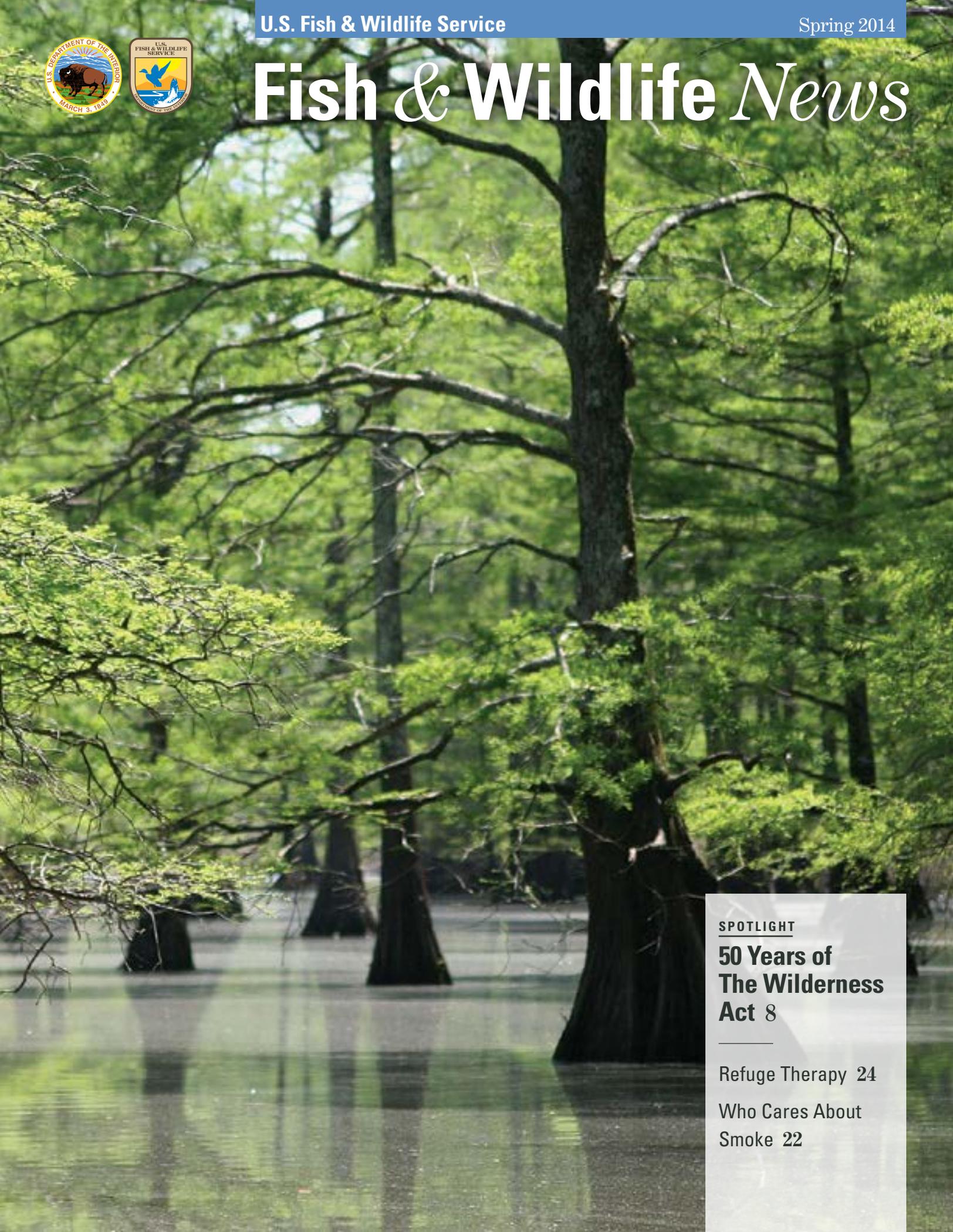




Fish & Wildlife *News*



SPOTLIGHT

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Jim Kurth

Wilderness: Values Beyond Its Land Boundaries

It's hard for me to believe that it has been 20 years since I moved to Fairbanks, Alaska, to begin my assignment as manager of Arctic National Wildlife Refuge. The refuge is a world-class natural area and the preeminent remaining American wilderness. The experience changed my life; it deepened my understanding of the natural world and the human experience in it.

The place evokes a sense of timelessness. When you find fossilized coral on the refuge's coastal plain, you can imagine the ancient ocean that once covered it. Billion-year-old rocks are exposed in the upthrust of the Brooks Range. Muskoxen and caribou remind you that the Pleistocene Epoch—the Ice Age—was yesterday in Earth's history, and that people who once crossed the Bering land bridge encountered the mastodon and the scimitar cat. Those people's descendants—the Inupiat and Gwich 'in people—still live there; their cultures thrive.

Read current Arctic Refuge Manager Brian Glaspell's take on the refuge p. 14.

“ [Wilderness] encompasses values and benefits that extend beyond its boundaries, to the millions of Americans who will never visit, but find satisfaction in knowing these vestiges still exist. —Roger Kaye

It is impossible not to feel small there. It is hard not to feel spiritual there. The place seems to compel an understanding that there are forces beyond our comprehension, perhaps a power of some kind that is bigger than our own species. I always prayed when I was there. The Earth is a very good place.

My experiences in the Arctic always made me think of our stewardship of both the refuge and the planet—of our progress and our failures. The Arctic Refuge remains protected and its wilderness character remains. I believe that it will always be so. But during my time there, an elder from Kaktovik told me he had water in his ice basement and that no one had ever seen that before. The numbers of polar bears around

town were growing as bowhead whale carcasses from the fall hunt were becoming a more important food source and the sea ice receded farther and farther from shore.

As I was reflecting on my experiences in the Arctic and the upcoming 50th anniversary of the Wilderness Act, I remember some words my friend Roger Kaye wrote about wilderness in *Fulfilling the Promise*, the 1999 document that set the path for the Refuge System for the forthcoming decade: “Central to the experience and awareness of wilderness is humility, with its corollary, restraint; restraint in what is appropriate for visitors to do, as well as managers. Restraint is the reason for the ‘minimum tool’ rule, limiting use of our mechanisms to that which is necessary, and necessary not only to manage these areas, but to manage them as wilderness.

“Beyond its tangible resources and experiential opportunities, wilderness is a symbolic landscape. It encompasses values and benefits that extend beyond its boundaries, to the millions of Americans who will never visit, but find satisfaction in knowing these vestiges still exist. Wilderness areas are valued as remnants of our American cultural heritage as well as our universal evolutionary heritage, symbolically enshrining national as well as natural values. Wilderness protection serves as the most visible symbol of our generation's willingness to pass on some natural treasures as we found them. It is the finest example, perhaps, of our sense of stewardship of the system.”

I wonder whether we have fulfilled the promise of that last sentence? Perhaps. I suspect we have more work to do. I wonder what a Chief of the National Wildlife Refuge System, reflecting on wilderness and our stewardship, might write 50 years from now. I hope we can be humble stewards who will provide inspiration in the future. □

JIM KURTH is Chief of the National Wildlife Refuge System

50 YEARS OF THE WILDERNESS ACT

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Wilderness pioneer Mardy Murie in Alaska.

USFWS

Escaping the Confines of Civilization

We needed the Wilderness Act in 1964 and still need it today

by NANCY ROEPER | The National Wilderness Preservation System turns 50 this year, significantly younger than three other federal systems of lands and waters that begin providing varying levels of protection before 1964. So why did the United States need to create a new national system, composed of elements from the U.S. Fish and Wildlife Service, the National Park Service and the U.S. Forest Service?

Proponents of wilderness in the early 1900s saw changes throughout the nation's wild lands that were altering the land's nature. National parks focused on building roads, hotels and visitor centers to encourage tourism via automobile. National forests were building roads to facilitate large-scale logging. Huge dams were going up on major Western rivers for energy production. The Service's National Wildlife Refuge System was focused on creating waterfowl and game habitat, often through major ecological intervention.

Key wilderness supporters such as Aldo Leopold, Arthur Carhart, Bob Marshall, Olaus and Mardy Murie, and Howard Zahniser recognized a need to preserve lands in their natural and wild form to balance this utilitarianism. They recognized the benefits of the undeveloped and wild nature of rapidly disappearing places such as the headwaters of the Gila River in New Mexico, Trappers Lake in Colorado and vast expanses of the Arctic in Alaska.

Advocates longed for permanent protection as they feared people might tire of the need to fight repeatedly to

protect valuable places. As Zahniser said, "Let's try to be done with a wilderness preservation program made up of a sequence of overlapping emergencies, threats and defense campaigns! Let's make a concerted effort for a positive program that will establish an enduring system of areas where we can be at peace and not forever feel that the wilderness is a battleground."

Leopold felt much the same way: "Let no man think that because a few foresters have tentatively formulated a wilderness policy that the preservation of wilderness is assured."

The U.S. Biological Survey, which became the Fish and Wildlife Service, bred some of the most passionate proponents of wilderness protection. Olaus Murie was a wildlife biologist for about 25 years. He and his wife, Mardy, worked tirelessly to protect Alaska's Brooks Range and the Sheenjek River. Zahniser was a writer and editor with the Service's forerunner for 10 years.

But it wasn't until he became executive director of The Wilderness Society that Zahniser began his tireless battle to pass legislation. He wrote the first draft of the

Wilderness Act in 1956 and over nine years, shepherded it through 18 public hearings and 65 rewrites. Congress finally passed and President Johnson signed the Wilderness Act on September 3, 1964.

No Refuge System wilderness was designated by the Wilderness Act. Instead, the law gave the three agencies 10 years to review their lands and make wilderness recommendations. However, at public demand, Congress designated wilderness at Great Swamp National Wildlife Refuge in New Jersey only four years later in 1968—the first wilderness designated for the Refuge System and the Department of the Interior (See "Great Swamp: Interior's First Wilderness" p. 19).

Since then, Congress has designated wilderness on 62 additional refuges and one fish hatchery. There are also almost 2 million additional acres of Refuge System lands proposed as wilderness in the 1970s; Congress has neither designated the lands as wilderness nor released them from further wilderness consideration. As a result, the Service manages about 22 million acres of designated and proposed wilderness in accordance with the provisions of the Wilderness Act.

What are the consequences of wilderness designation in the Refuge System? In essence, wilderness areas have dual citizenship: They are members of the Refuge System and of the National Wilderness Preservation System. As the Refuge System manages

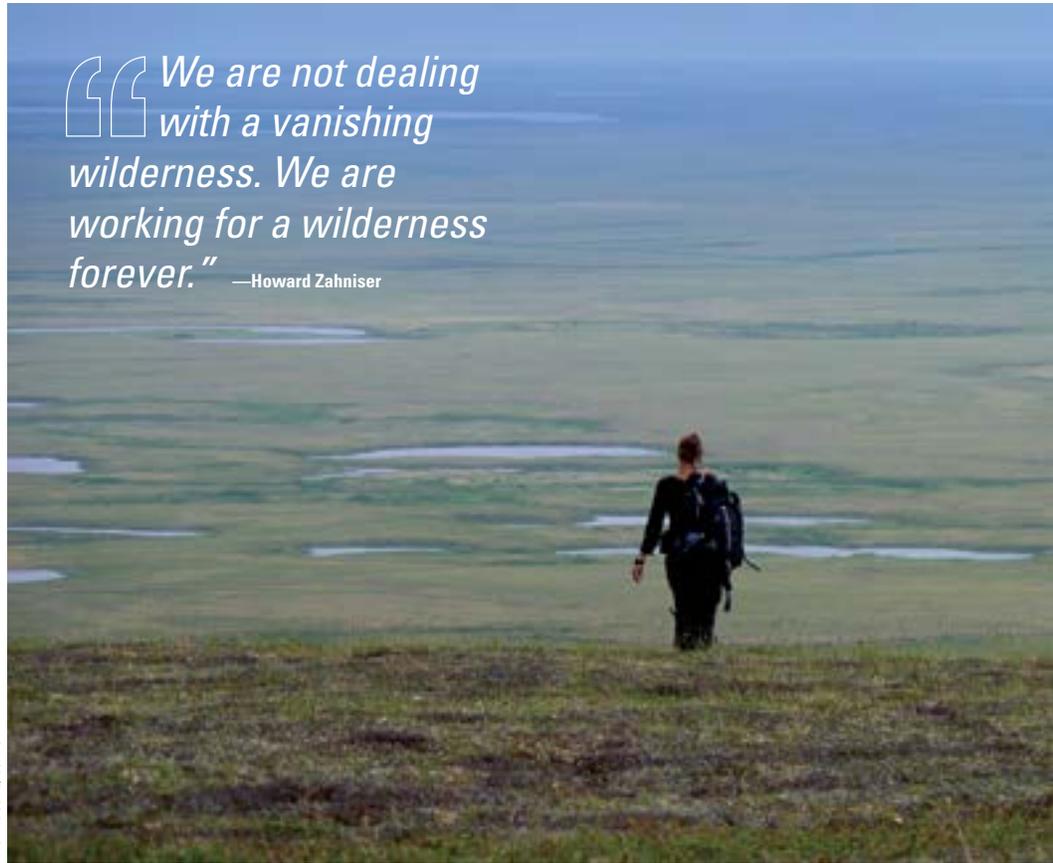
“We are not dealing with a vanishing wilderness. We are working for a wilderness forever.” —Howard Zahniser

these areas to achieve the wildlife conservation purposes for which they were established, the Service does it in ways that keep them primarily natural, undeveloped and wild, or as Howard Zahniser explained, “exhibiting the free play of natural forces.”

Managers use temporary roads, motorized equipment and vehicles, mechanical transport, structures and the landing of aircraft sparingly, and only when their use has been carefully evaluated and determined to be the minimum requirement for managing the area to preserve its wilderness character.

Use and enjoyment of wilderness is another important principle of the Wilderness Act, which identifies outstanding opportunities for solitude or a primitive and unconfined type of recreation as a key descriptor of wilderness character. The Service encourages visitors to hunt, fish, observe and photograph wildlife, and engage in other activities as long as those activities are non-motorized, non-mechanized and compatible with wilderness preservation. Wilderness areas can also be great for snowshoeing, kayaking and camping.

KRISTINE SOWIL / USFWS



The “dual citizenship” aspect of wilderness allows Refuge System staff to take advantage of the wilderness training, information and education offered by the interagency Arthur Carhart Wilderness Training Center and wilderness research, monitoring and scientific knowledge amassed by the interagency Aldo Leopold Wilderness Research Institute. Coordinated training, education and research means all four agencies that manage wilderness—now including the Bureau of Land Management—do so in a coordinated manner to protect a single Wilderness System.

As he so often did, Howard Zahniser summed up the strength of a single National Wilderness Preservation System: “Working to preserve in perpetuity is a great inspiration. We are not fighting a rear-guard action, we are facing a frontier. We are not slowing down a force that inevitably will destroy all the wilderness there is. We are generating another force, never to be wholly spent, that, renewed generation after generation, will be always effective in preserving wilderness. We are not fighting progress. We are making it. We are not dealing with a vanishing wilderness. We are working for a wilderness forever.”



USFWS

My passion for wilderness began at an early age. I grew up exploring nearby fields, woods and swamps without my parents worrying about my safety. Growing up on Long Island, I found these relatively small areas constituted my own personal wilderness. I knew the best hiding places, trees to climb, blackberry patches and spots to catch pollywogs. From that beginning, I just scaled up to feel connected to truly undeveloped and wild areas as I camped and backpacked during graduate school. But it wasn't until I began my current position and my book learning about wilderness that I realized that some of my trips had been to areas that were Designated Wilderness. I now know that the exhilaration I felt in these places resulted not only from the

incredible scenery, unexpected wildlife encounters and the exertion of transporting oneself with necessary food and shelter, but also from the feeling that I had escaped the confines of civilization; I could be wild! Even if only temporarily. I want future generations to experience that feeling.

During this 50th anniversary year, I look forward to the Service continuing and expanding upon its proud heritage of wilderness stewardship to preserve the special lands and waters that the American people have entrusted to it. □

NANCY ROEPER, National Wilderness Coordinator,
National Wildlife Refuge System, Headquarters

Left: Andreafsky Wilderness, at Yukon Delta National Wildlife Refuge in Alaska. **Above:** President Johnson Signs the Wilderness Act.

ADVENTURE

Many heed call to enjoy areas ‘untrammelled by man’

BY DEBORAH JEROME

Not long after we began our canoe trip in Okefenokee National Wildlife Refuge Wilderness in Georgia, I spotted my first alligator—its enormous head visible above the water’s surface, its body hidden under the tea-colored bog. You usually gauge a gator’s length by estimating in inches the distance between its eyes and snout and converting that to feet. In this case: a gator about 10 feet long.

My companions and I paddled (quickly) past the big gator and headed south into the Grand Prairie. Our canoe was suddenly bombarded with a brown geyser of water, peat and mud. Peat blowouts, caused by the release of methane gases from below, had blocked our route with an impassable island, filling in the once recognizable, open trail. We lost all sense of direction. Not knowing whether we were on solid footing or a floating island, we stayed in our boat and wedged our way free. Thankfully, we maneuvered our way back to the trail.

The Wilderness Act of 1964 made my experience possible. This definition in the act explains why: “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 its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area... of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions...”

Wilderness areas are ideal for hiking, canoeing/kayaking, camping, photography, environmental education, interpretation, hunting, fishing and more—as long as those activities are compatible and appropriate with preserving wilderness character. But wilderness can be “loved to death” only too easily. As a result, wilderness administrators face many challenges.

The Wilderness Act specifies that as managers we maintain the natural setting and provide outstanding opportunities for solitude or primitive and unconfined recreation without diminishing the wilderness character. So, those who manage wilderness may adjust the number and distribution of visitors at any given time to maintain the experience and achieve wilderness objectives.

Wilderness administrators also manage each unit in the National Wilderness Preservation System as the most wild and undeveloped extreme within the spectrum of a wildlife refuge—applying the “minimum necessary” standard before taking administrative action in wilderness.

Commercial outfitting and guiding are two of the few commercial services permitted by the Wilderness Act to enhance the recreational experience in some areas “to the extent necessary,” as the act says, and if found compatible under the National Wildlife Refuge System Improvement Act of 1997. Commercial guided boat tours led by experienced naturalists are offered at Okefenokee, as well as boat and camping equipment rentals, food and supplies.

The boat tours take advantage of the 120 miles of boat trails Congress requires be maintained. The boat trails are the only access into the wilderness and would quickly become overgrown and impassable unless maintained year-round by staff and volunteers. Depending on the location of a trail, water level and other factors, the “minimum necessary” requirement for clearing a trail may be hand tools and canoes or it may involve motorized boats and equipment.

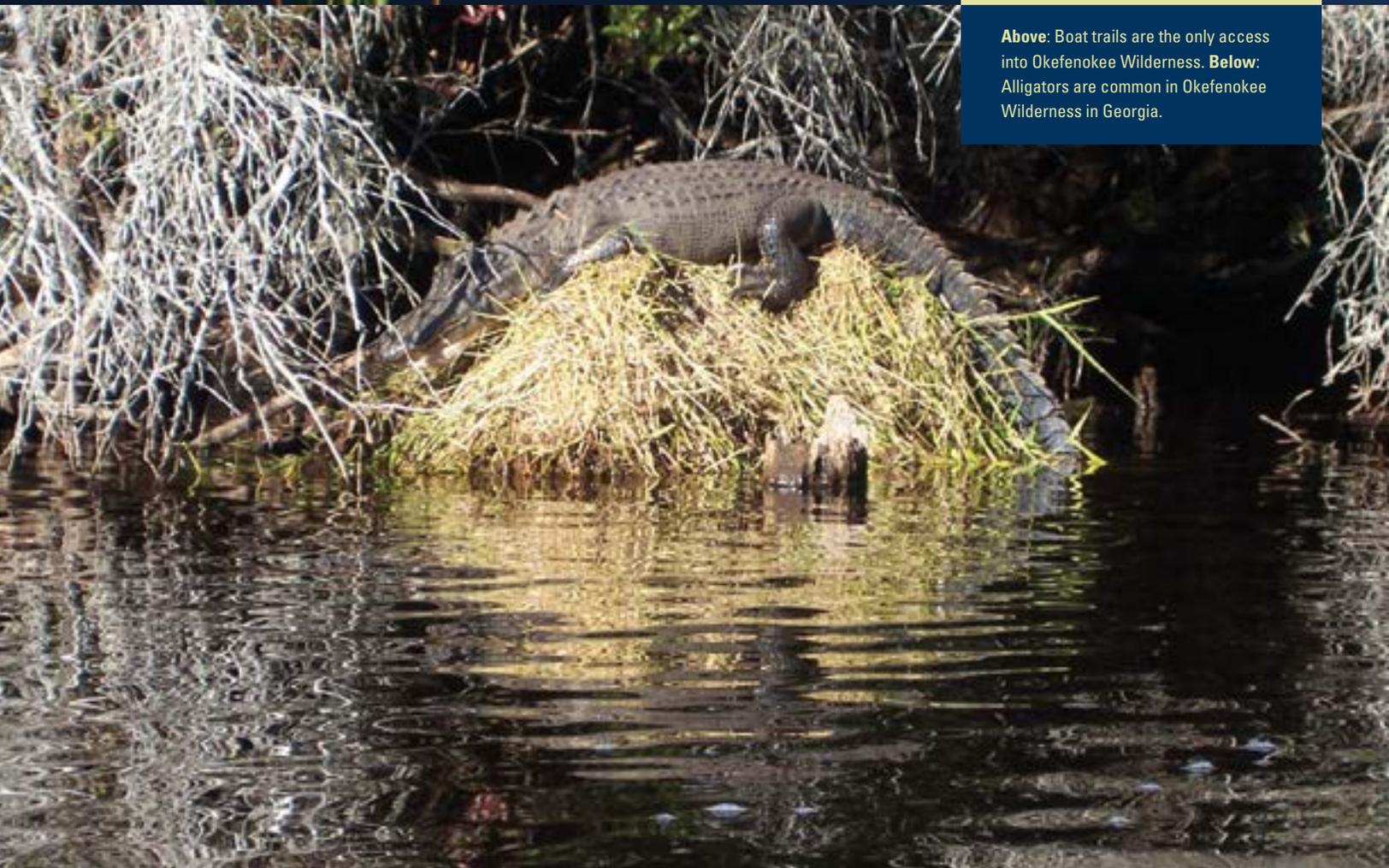
Every dip of my paddle through the Okefenokee Wilderness brought a new experience that trumped the last: the sweet smell of flowering water plants, the amazing starlit night undiminished by city lights, the quiet swooshing sound of sandhill cranes overhead. Like most wilderness experiences, the trip was unforgettable. □

DEBORAH JEROME, Regional Wilderness Coordinator, National Wildlife Refuge System, Southeast Region

AWAITS

VISIT It takes careful planning to visit wilderness. The Service has 75 wilderness areas on 63 refuges in 26 states. Find the perfect adventure by going online to find wilderness in the Service: <www.fws.gov/refuges/whm/wilderness.html>

Above: Boat trails are the only access into Okefenokee Wilderness. **Below:** Alligators are common in Okefenokee Wilderness in Georgia.



WILD LANDS IN T



The walls of the conference room at Arctic National Wildlife Refuge, headquartered in Fairbanks, Alaska, are hung with wood-framed photos of “the Founders,” conservation giants whose vision and tireless struggle led to the refuge’s establishment in 1960. More than an effort to protect a specific place, the Founders’ campaign to establish Arctic Refuge was also about recognizing and preserving a set of values—unrestricted natural processes (wildness) and opportunities for exploration and discovery, solitude and challenge—that was later codified in the 1964 Wilderness Act.

Left to right: 1. A mom and three children fetch water at Arctic Refuge. The wilderness provides subsistence opportunities for some native Alaskans. 2. You’ll find no roads or constructed trails within Arctic Refuge. 3. A visitor crosses a river in Arctic Refuge. 4. The Mollie Beattie Wilderness encompasses more than one-third of the total wilderness acreage in the National Wildlife Refuge System.

In the decades since Arctic Refuge was established, issues never imagined by the Founders have emerged. As a kid growing up near Anchorage, Alaska, Arctic Refuge featured prominently in my classroom lessons and family discussions around the dinner table. For me, like millions of others from Alaska to Florida, the persistent national debate about potential oil and gas resources in one small portion of the refuge provided an introduction to the vast world of wilderness, wildlife and cultural resources found in northeast Alaska.

Now, climate change and other large-scale human influences challenge the very notion of “natural,” not only in the Arctic but across the world. And information technology allows for armchair exploration

and virtual experiences that reveal the mountains’ mysteries with a few quick keystrokes.

However, the role of the refuge as a symbol and exemplar of wilderness values has only grown.

At nearly 8 million acres, Mollie Beattie Wilderness, as the Arctic Refuge wilderness is called, encompasses more than one-third of the total wilderness acreage in the National Wildlife Refuge System. It supports such animals as polar bear, wolf, wolverine, Dall sheep and caribou, as well as more than 200 other species of birds, mammals and fish. In addition, the wilderness provides subsistence opportunities for Inupiat and Gwich’in native peoples, who mix

THE ARCTIC

People are enriched by the knowledge that it exists

By BRIAN GLASPELL



traditional and modern lifestyles in villages on the periphery of the refuge.

There are no roads or constructed trails within the wilderness, or anywhere within the larger 19.6 million-acre refuge, an area about the size of South Carolina. Most visitors as well as refuge staff travel by bush airplanes equipped with oversized “tundra tires” for landing on unimproved airstrips. Just getting to the refuge is a multi-day affair; and a typical wilderness visit lasts for a week or more. This challenging travel and access situation limits both recreational visitors as well as scientists and wildlife managers. Despite its attractions as a unique natural laboratory and wilderness recreation paradise, Arctic Refuge receives fewer than 2,000 visitors a year.

The truth is, most Americans will never set foot in Mollie Beattie Wilderness, but many are enriched by the knowledge that it exists. The refuge is a real, tangible place that serves as both habitat and homeland. It is also an intangible and powerful symbol of wildness and wilderness values for people across the country.

The value of symbols lies in their ability to evoke meanings and emotions, and therein lies a principle wilderness stewardship challenge at Arctic Refuge.

As a refuge manager, most of my management tools are designed to evaluate and address the effects of people on wildlife and habitats—but what about the effects of wild places on people? How do we share the refuge with millions who will never visit but also preserve opportunities for personal discovery and exploration? How does one meet legal and policy mandates for managing resources while stewarding the *idea* of a place? These are messy questions that defy easy answers.

Perhaps the best we can do is to frame each question in the context of a larger purpose. Olaus Murie, one of the principal refuge Founders, wrote that preservation of what is now Mollie Beattie Wilderness is about “the real problem of what the human species is to do with this earth.”

I’ll be the first to agree that framing every wilderness choice in such grandiose terms may be a little over-the-top. However,

I do believe that wilderness stewardship demands a thoughtful, humble approach, and our response to the “real problem” identified by Murie is ultimately demonstrated in the cumulative effect of myriad daily decisions.

Many of those decisions involve choices between “could” and “should.” In the Arctic Refuge wilderness, unlike many other refuge settings, we have managed to preserve a functional, wild, natural setting. What we could do in that setting changes as fast as technology; what we should do is governed by a more stable set of rules. The Service’s National Wilderness Stewardship Policy directs us to “set a high standard and provide an example for the public to follow.” That sounds to me like good advice for stewarding a symbolic resource. As a symbol and example for the public to follow, Arctic Refuge, and its wilderness, may be more important to us than we are to it. □

BRIAN GLASPELL, Arctic National Wildlife Refuge, Alaska Region

THINK

MINIMALLY

Traditional skills help preserve wilderness character

Dorothy Fecske, wildlife biologist at Great Swamp National Wildlife Refuge, stands with Steve Henry, deputy refuge manager, in front of the beech tree taken down with a crosscut saw and moved off the trail.

by STEVE HENRY

Steely gray skies and gusty moans like those of a great wounded beast brought on the ominous dark. Throughout the night of October 29, 2012, the forest exploded as trees were ripped from the ground and shattered against one another like giant jackstraws. When the sun finally rose the next morning, it was clear Hurricane Sandy deserved the title “superstorm.”

Hurricane Sandy was the largest Atlantic storm ever recorded and the second most costly after Katrina. The mid-Atlantic Coast was particularly hard hit, with New Jersey suffering a heavy blow. Although coastal by nature, the size and strength of Sandy caused massive damage far inland, including at Great Swamp National Wildlife Refuge in New Jersey.

The days after the storm brought unprecedented challenges for refuge staff and volunteers. In the immediate aftermath, massive trees blown down by the wind blocked roads and brought down wires. The refuge was closed to the public for a week; power was not fully restored for nearly two. Emergency repairs were made to prevent further damage, but it would be weeks before service roads and boardwalks could be cleared to reopen.

The eastern half of Great Swamp Refuge has the distinction of being the first wilderness area designated within the Department of the Interior (DOI) (See “Great Swamp: Interior’s First Wilderness” p. 19). In 1968, President Lyndon Johnson signed the act adding part of Great Swamp to the National Wilderness Preservation System, recognizing the “attractiveness of undisturbed solitude” that was “so sorely needed in the middle Atlantic



“*Miniature wildernesses a stone’s throw from megalopolis — a Fire Island seashore, a Great Swamp of New Jersey — may be as important to the future as the preservation of Yellowstone Park.*”

—Stewart L. Udall, Secretary of the Interior (1961–69)

region.” Such solitude and its many related benefits would be “perpetually protected and enhanced” by Great Swamp National Wildlife Refuge Wilderness. This wilderness designation is astounding given how radically different Great Swamp was from previously designated areas. At less than the 5,000 acres generally required by the Wilderness Act and lying in the heart of the most heavily developed and densely populated area in the nation, the area’s designation as wilderness speaks volumes about the commitment and vision of those who fought for its preservation.

Federal agencies that manage wilderness have a mandate to preserve “wilderness character.” Such character emerges from the unique conditions and resources in each wilderness. To preserve character the Wilderness Act prohibits motorized equipment, motor vehicles, permanent roads and structures, among other things. Some discretion, however, is given to agencies to employ prohibited uses or activities in cases of emergency or “when necessary to meet the minimum requirements for the administration of the area” as wilderness. By policy, agencies are required to conduct a “minimum requirements analysis” to determine if a prohibited use may be allowed. The Wilderness Act’s intent is clear: Such uses



should be the rare exception, only when absolutely necessary and only when non-prohibited uses are unavailable or unworkable. Service policy goes further, eliminating cost or convenience as factors in determining the minimum requirement.

Great Swamp Refuge Wilderness contains more than eight miles of primitive hiking trails, and Hurricane Sandy affected them all. In several places, massive trees fell in huge tangles, completely blocking the trail. After the storm, the refuge staff focused on the emergency stabilization of structures and opening primary roads and visitor facilities. Attention then shifted to clearing wilderness trails.

In light of the extent of the damage, it was tempting to grant an exception to use chainsaws. Refuge staff and volunteers simply did not have the expertise or equipment to tackle the challenge any other way. After much thought and discussion, however, we decided that chainsaws weren’t really the minimum

requirement and that we needed a better option—an option that preserved wilderness character while also building in-house skills to deal with future storms.

Staff from the interagency Arthur Carhart National Wilderness Training Center put us in touch with Forest Service employees, who had years of experience using hand tools to maintain wilderness trails. Four months after Sandy, a team of three experts spent a week at Great Swamp Refuge, training staff and volunteers in the use of such “traditional tools” as axes and crosscut saws. It was both exciting and humbling to learn their woodsman’s skills, skills that are unfortunately being lost in modern society. Beyond the use of tools, they taught us the importance of balance, leverage, angles and careful planning to work smarter with less effort. It was as much about physics as swinging an axe or pulling a saw. With their help, many blockages, including the worst, were cleared and the trails were safely reopened for the public.

Lynn Wolfe from Rachel Carson National Wildlife Refuge in Maine (left) and Dorothy Fecske of Great Swamp use a crosscut saw to cut up a large tree that came down across a wilderness trail during Hurricane Sandy.

Providing training in wilderness stewardship is really no different from other refuge disciplines that require training: Biologists spend years getting college degrees in wildlife conservation fields; maintenance personnel must be trained and licensed to operate heavy equipment; managers must learn supervisory and budgeting skills. It's no surprise that the ability to effectively preserve wilderness character will also necessitate training.

In the time since Hurricane Sandy, refuge staff and volunteers have continued to clear trails monthly. Our new skills and tools have given us the confidence to do the job safely and efficiently. In fact, good hand tools properly used have numerous advantages over motorized equipment. We take pride in using traditional methods in a way that preserves wilderness character. And the public is taking notice. A visitor to our wilderness area recently stopped by refuge headquarters to congratulate us after spotting several large trees that had been cleared using crosscut saws rather than chainsaws.

Great Swamp Refuge, like many refuges in the region, continues to recover from the devastating effects of Hurricane Sandy. If there is a silver lining, it is that our response has better prepared us to handle future events in a wilderness-appropriate way. As we celebrate the 50th anniversary of the Wilderness Act, DOI's first wilderness is better positioned than ever to handle whatever the future may bring. □

STEVE HENRY, Great Swamp National Wildlife Refuge, Northeast Region



In 1968, 3,660 acres of Great Swamp National Wildlife Refuge became a designated wilderness area.

Great Swamp: Interior's First Wilderness

Who would have thought that just 26 miles west of New York's Times Square, you will find a federal wilderness area? Thanks to the hard work of a passionate community and support from Congress, 3,660 acres of Great Swamp National Wildlife Refuge became in 1968 the first wilderness area designated in the Department of the Interior.

In the late 1950s, the Port Authority of New York and New Jersey determined that the area was an ideal location for a major international airport. The proposed 10,000-acre airport was met with grassroots opposition. Helen Fenske, a local homemaker, was among the leaders who rallied the community in favor of conserving Great Swamp as a national wildlife refuge, and she played a key role in seeking out wilderness designation.

The New Jersey refuge has grown to more than 7,700 acres, and just under half of that is designated wilderness, with 8.5 miles of trails that offer visitors a primitive recreation experience.

The refuge wilderness area is also a hotspot for ecological integrity. Each spring biologists monitor vernal pools and wetlands to track breeding trends. The refuge has become an important resting and feeding area for more than 244 species of birds. Fox, deer, muskrat, turtles, fish, frogs and a wide variety of wildflowers and plants can also be found on the refuge. □

DAVE SAGAN, Great Swamp National Wildlife Refuge, Northeast Region

SPIRIT OF WILDERNESS ACT UNITES US

by JAMIE WILLIAMS



From snowy Alaska to the humid tip of Florida, every wild place in America that has been saved owes its enduring character to someone who loved it. Our world-renowned national parks, monuments, forests and refuges embody the heart and exceptionality of the people who strive to protect them. Since 1964, the Wilderness Act has enabled citizens to work locally and advocate in Congress to include treasured wild places in the National Wilderness Preservation System. Beyond the United States, the act's passage set a conservation gold standard for the rest of the industrial world.

The Wilderness Society was founded in 1935 to ensure that wild places had equal voice amidst the onslaught of development happening across America at that time. Visionaries such as Aldo Leopold, Bob Marshall and Benton Mackaye were intimately familiar with wild lands and pushed for a legislative measure that would help balance human needs with those of the natural world. We all benefit today from the more than 109 million acres of federal lands that have been protected by the Wilderness Act. In the National Wildlife Refuge System alone, 63 refuges in 26 states host 75 wilderness areas—about one-fifth of the designated wilderness acres in the United States.

Large protected areas such as designated wilderness are vital for safeguarding the natural systems that produce clean drinking water and protect wildlife. But today's development pressures coupled with a troubling trend in inadequate congressional funding for our public lands puts these wild places at risk. Budget shortages can cause significant delays in mandatory recreational and conservation planning, and hamper field monitoring on wildlife, fire conditions, archaeological sites and trail use.



A visitor enjoys the view from atop Chupadera Peak in the Chupadera Wilderness at Bosque del Apache National Wildlife Refuge in New Mexico.

Last year's government shutdown showed us how much Americans value their public lands legacy. In wilderness, visitors can find solitude and peace and quiet, a chance to explore by foot or boat, traditional forms of recreation such as hunting or backpacking, or an opportunity to teach a child about different cultures that thrived off the land.

Some places, such as Arizona's Kofa National Wildlife Refuge, are predominantly designated wilderness, and astound us with their vast terrain;

other refuges are intimate, offering quiet sanctuary for humans and wildlife near densely populated communities, such as the Parker River National Wildlife Refuge north of Boston, where wilderness designation is proposed. A personal favorite is the Sheldon-Hart Mountain National Wildlife Refuge Complex, which protects two critical habitat areas for migratory pronghorn antelope and other native species—such as bighorn sheep, mule deer, sage-grouse and redband trout—in southeastern Oregon and northern Nevada. There, wilderness designation is proposed for both Hart Mountain National Antelope Refuge and Sheldon National Wildlife Refuge in Oregon.

Wilderness lands remind us that human development doesn't belong everywhere. Late last year, Secretary of the Interior Sally Jewell reaffirmed a key Fish and Wildlife Service decision to forbid the construction of a road through Alaska's Izembek National Wildlife Refuge, protecting this sublime wilderness where sea otters and Steller's sea lions, wolves, caribou, brown bears, salmon and hundreds of thousands of shorebirds and seabirds thrive. A road would have permanently bisected the narrow strip of land that runs between two lagoons teeming with birds, fragmenting this irreplaceable wildlife area beyond repair.

The spirit of the Wilderness Act unites us around an inherently American idea: By securing "an enduring resource of wilderness," it reminds us of our nation's rich heritage, humanity's dependence on healthy natural systems and our ability to ensure a sustainable environment for future generations long after we are gone. □

JAMIE WILLIAMS is president of The Wilderness Society, the leading wild public lands conservation organization working to protect wilderness and inspire Americans to care for our wild places. <www.wilderness.org>

PRESERVING WILDERNESS CHARACTER FOR THE AGES

by NANCY ROEPER



Monica Patel, a 2011 Wilderness Fellow, does shoreline inventory and monitoring work at Edwin B. Forsythe Refuge in New Jersey.

To understand the Wilderness Character Monitoring Initiative, you first need some understanding of wilderness character itself. The term, “wilderness character” comes directly from the Wilderness Act.

In directing wilderness-managing agencies to preserve wilderness character, Congress defined it in somewhat poetic terms, but with key qualities mentioned. The act states that wilderness is:

- untrammeled—where the forces of nature are allowed free play;
- undeveloped—where the land retains its primeval character and permanent improvements are lacking; and
- natural—where the area is managed to preserve natural conditions.

It also must offer outstanding opportunities for solitude or a primitive and unconfined type of recreation.

A complete definition of wilderness character would incorporate many additional aspects such as the natural soundscape, dark skies, cultural values and the capacity to provide a temporary haven from the pressures of modern civilization.

With the encouraged public use and enjoyment of wilderness, as well as the stressors of pollution, nearby development, climate change and more, it has become clear that key qualities of wilderness must be monitored over time to determine whether wilderness character is degrading, remaining stable or improving.

With leadership from Dr. Peter Landres of the Aldo Leopold Wilderness Research Institute, the U.S. Forest Service developed protocols for wilderness character monitoring. Building on this effort, Landres and a team from the wilderness-managing agencies (Fish and Wildlife Service, National Park Service, Bureau of Land Management and Forest

Service) and the U.S. Geological Survey developed an interagency monitoring strategy.

For its part, the Service began an effort to conduct wilderness character baseline assessments for all designated wilderness in the Service by the end of 2014, the 50th anniversary year of the Wilderness Act.

From 2011 to 2014, the Service hired groups of Wilderness Fellows to conduct assessments for the 63 refuges with wilderness areas, one fish hatchery and several proposed wilderness areas. The Service has also worked with the other three agencies to develop an interagency online wilderness character monitoring database.

Hiring Fellows made this initiative possible. The approach was affordable and has been an excellent way to familiarize recent college graduates with the Service and the National Wilderness Preservation System. The Fellows have been energetic and ready to help on non-wilderness projects such as banding birds, surveying amphibians, removing invasive plants, planting experimental plots of a host plant for a rare butterfly, and assisting in education programs for local schools.

Refuge staff learned a great deal about the status of wilderness by working with the Fellows to identify and prioritize the elements of wilderness character that were most important to measure. Although it is too early to draw conclusions about wilderness character, over the next several years, the Service will be better able to see how wilderness character is changing over time and understand how stewardship actions affect wilderness character.

With hard data in hand, better stewardship decisions will help preserve wilderness character for the American people.

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