INTERNATIONAL

Journal of Wilderness

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DECEMBER 2010 VOLUME 16, NUMBER 3

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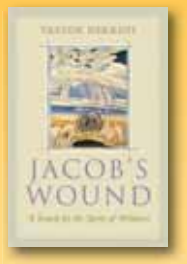

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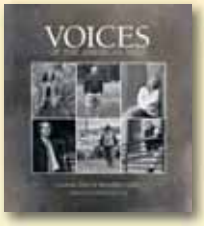

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On the Cover

African bio-diversity is well illustrated in the "antelopes" of which there are approximately 72 species on the continent. Here, (**main image**) in Botswana's Okavango Delta, we have a handsome young male Greater Kudu (*Tragelaphus strepsiceros*) on top of a termite mound, status "threatened" but often locally plentiful, most often found in woodlands and riparian forests, and (**inset**) a magnificent male Sable (*Hippotragus niger*), status "vulnerable"—found primarily in grasslands and miombo woodlands. © Photos courtesy of Vance G. Martin

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The *Soul of the Wilderness* column and all invited and featured articles in *IJW*, are a forum for controversial, inspiring, or especially informative articles to renew thinking and dialogue among our readers. The views expressed in these articles are those of the authors. *IJW* neither endorses nor rejects them, but invites comments from our readers.

—John C. Hendee, *IJW* Editor-in-Chief

International Journal of Wilderness

The *International Journal of Wilderness* links wilderness professionals, scientists, educators, environmentalists, and interested citizens worldwide with a forum for reporting and discussing wilderness ideas and events; inspirational ideas; planning, management, and allocation strategies; education; and research and policy aspects of wilderness stewardship.

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EDITORIAL PERSPECTIVES

Making *IJW* More Accessible Online

BY CHAD P. DAWSON

With this issue of the *International Journal of Wilderness* (*IJW*), we have successfully completed our 16th year in press. *IJW* was initiated in 1995 by the University of Idaho–Wilderness Research Center, The WILD Foundation, and Fulcrum Publishing under the leadership of editor in chief Dr. John Hendee. To date, we have produced *IJW* as three printed issues per year (April, August, and December), and we plan to continue that production by bringing you the same quality presentations, but in electronic format available online.

The revised *IJW* website (www.ijw.org) provides free, downloadable past issues (1995 through last year's volume). Each issue is searchable by looking at the table of contents or using the search engine on the web page. The pages you see are designed to look just like the printed pages in the original document. We will continue with that same high quality issue layout and page format so there will be no apparent change to readers as we transition to a completely electronic system.

The current volume is available for subscribers only, and you can receive the current volume through an online subscription and payment process. Additionally, for a slightly higher subscription fee you can subscribe and receive a digitally printed version of the online issues, if you are unable to download the Adobe Acrobat files or read them online. You can access full copies of every past issue of the *IJW* in an easy-to-read online format and it is free; it is also available for download (PDF).

The three main reasons for this change to electronic files and online distribution are that it: (1) allows *IJW* to be more widely distributed and used for the stewardship of wilderness and protected areas worldwide, (2) maintains the subscription rate at an affordable level by keeping production and distribution costs down, and (3) is an environmentally responsible approach to sharing information.

IJW is the information tool of choice for wilderness managers and advocates, produced through a unique collaboration between The WILD Foundation and its many partners and sponsors, whom we will continue to rely on for support. Our decision to go to an electronic journal for *IJW* fits with changes in publishing and sharing information worldwide. The expanded access to *IJW* will allow for more information links between wilderness professionals, scientists, educators, environmentalists, and interested citizens worldwide.

Every issue will continue to contain peer-reviewed research articles and feature presentations from numerous countries, as well as the Wilderness Digest announcements and book reviews. *IJW* presents the latest in wilderness management, research, and stewardship, while covering related issues on the sustainability of wildlands around the world, community involvement in protected areas, and policy issues.

We look forward to your continued involvement in *IJW* as a reader, subscriber, sponsor, or author.

CHAD P. DAWSON is a professor at SUNY College of Environmental Science and Forestry, Syracuse, NY, and managing editor of *IJW*; email: cpdawson@esf.edu.

SOUL OF THE WILDERNESS

What Is a Good Bear?

BY MATTHIAS BREITER

"In the end we will conserve only what we love. We will love only what we understand. We will understand only what we are taught."

—Baba Dioum, Senegal

Matthias Breiter.

"What good is a bear?" The question took me by surprise. I had been thumbing a ride out of Glacier National Park in Montana. After a few weeks out in the bush working on a study project, I was running low on supplies and was heading into town to restock. Traffic on the road was light, but already the second car stopped. Within minutes of getting into the vehicle, I found myself in a heated debate over wildlife conservation.

As a wildlife biologist, I was no stranger to discussions evolving around similar topics. Thus, I felt prepared and comfortable in presenting a conclusive argument in favor of environmental protection. Yet this simple query stopped me cold. Trained in the subject matter, I surmised that I should be able to provide a concise, persuasive answer. Yet all I came up with was a vague, drawn-out response lacking conviction. The driver of the vehicle wanted to attach a monetary value to the existence of a bear.

My decision to commit to the study of the world's flora and fauna was based on a deep-felt love for wilderness and the environment. I was enamored of the mysteries of the natural world (see figure 1). The desire to understand the intricacies of nature compelled me to devour any book covering the subject. My curiosity was directed toward answering questions such as how an animal or a plant lives and survives, how its body is structured, and how on a molecular level complex chemical processes result in the procreation, growth, continuance, and ultimately death of an organism.

Ecological and Economic Perspectives

It didn't occur to me to question the purpose of life-forms from an economic perspective. In my opinion, the mere fact that a creature exists provides it with a right to live. This

Figure 1—Black bear cub climbing tree to avoid danger, Alaska. Photo © by Matthias Breiter.

Figure 2—Kermode bears threatened by new oil terminal in Kitimat, British Columbia, Canada. Photo © by Matthias Breiter.

belief is not shared by everyone. Regularly, business interests, political agendas, and conservation issues stand in conflict as a deep gulf separates the objectives and values of the people representing either side (see figure 2). With common ground often a preciously small commodity, arguments are frequently rich in polemic while communication between the parties remains poor. Symptomatic of this phenomenon is the statement by the former governor of Alaska Wally Hickel, who noted on the issue of predator control that "you can't just let nature run wild."

Ever since that car ride the question about the value of a bear has haunted me. In the search for an answer, I discovered that, in fact, there are many reasons for their preservation. As our understanding of interdependencies between species has grown, the economic significance of intact ecosystems has become quantifiable. Recent research has revealed that as much as 70% of the nitrogen in Pacific Coast temperate rain forest trees has its origin in the oceans. It is the salmon that brings the richness of the sea to the land, and it is the bear and the eagle that spread the wealth of nutrients for miles on both sides of the streams (see figure 3). The forest industry benefits from this fertilization. Healthy trees stabilize mountainsides and provide the conditions for the clear, oxygen-rich waters that form the nurseries for the salmon, which in turn create one of the pillars of commercial fishing along the West Coast.

Bears are carnivores. Although in many ways they may not represent our image of a typical carnivore (assuming there is such a thing), the three North American bear species display predatory behavior. Predators, while competing with humans for a resource, fulfill a very important function in ecosystems by keeping prey populations healthy. In the short term, the removal of predators has frequently resulted in a dramatic increase in prey populations with subsequent economic damage in agriculture and forestry. The peak in animal numbers was then followed by a population crash unless costly management programs were put in place.

Figure 3—Brown bear hunting fish, Alaska. Photo © by Matthias Breiter.

Tourism in national parks and other protected areas has developed into a major industry, creating billions of dollars in revenue in North America each year. The images of bears have been used widely in the promotion of countless ecotourism venues (see figure 4). Today, bear viewing is creating more revenue then bear hunting, meaning that from a dollar perspective, a live bear is worth more than a dead bear. As sad as it may be, the dollar value is a powerful argument in conservation.

Other aspects are more difficult to quantify in monetary terms. Bears unknowingly have saved many lives and have improved the quality of life of the terminally ill. Research into bear physiology has had a major impact in the field of medicine, specifically pertaining to organ transplants, kidney disease, and osteoporosis. Recently, there has been much concern by biologists over the dramatic loss of biodiversity. Bears are a prime example of how answers to questions that affect all of humanity can be found in nature. If all bears were gone, vital information would have been lost without us knowing.

Conservation and Peaceful Coexistence

As individual beings and a society, we are the product of our surroundings and our past. This includes, whether we realize it or not, bears. Bears, like no other animal, penetrate human culture from language to science and art (see figure 5). Burial, going berserk, to bear young—to name but a few—are all terms with etymological roots in the Indo-Germanic word bher, the bear. Bears are a prominent figure in myths, fairy tales, and literature from

Figure 4—Polar bear swimming in Arctic Ocean, Canada. Photo © by Matthias Breiter.

North American First Nation oral traditions to the Grimm Brothers and J.R.R. Tolkien. Star constellations are named after the animal. The threads of history interweave into the fabric onto which we embroider the patterns of culture. Societies unravel as individual links with the past are severed. Ignoring our own traditions destabilizes the foundation on which we build the present. Without the bear we lose more than simply a magnificent animal, we irreversibly and irretrievably lose a part of who we are.

"Wilderness is the raw material out of which man has hammered the artifact called civilization" (Leopold 1966, p. 264).

In general, our society is orphaned from nature. Yet, our most creative minds draw inspiration from the natural environment. Cultural diversity is humankind's greatest treasure and asset. Plurality is the spice of life, fostering inspiration and encouraging us to reevaluate old paths and explore new ones. To what degree do we stifle ourselves and our development as people by allowing wilderness to be paved over, tilled into pastures, and

Figure 5—Brown bear fishing for salmon, grizzly, *Ursus arctos horribilis*, Alaska. Photo © by Matthias Breiter.

buried underneath housing developments and malls? And by doing so, we rob the great bears of a place to live. To most of us mountains appear loftier, valleys deeper, and forests more mystical in the presence of these majestic creatures. Bears have been called the miner's canary of wilderness. Due to their large size, they require vast tracts of land to live, and are among the first species to disappear if conditions are degraded (see figure 6).

Bears have fascinated humankind for millennia. They captivate us today as they did our ancestors. The good of a bear can be measured in many ways. A dollar value can be attached to its existence. Although the spiritual and cultural value is much less tangible, it is by no means less significant. In North America, we are fortunate to still share our country with these awe-inspiring creatures.

Figure 6—Polar bear female resting with newborn cubs on their way from the denning area to their hunting grounds on the sea ice, Canada. Photo © by Matthias Breiter.

Figure 7—Brown Bear in late fall, Alaska. Photo © by Matthias Breiter.

Grizzlies, black bears, and polar bears have all lost part of their former range. Where bears still roam, a fragile truce between human and beast often prevails. Usually, it is the people rather than the bear that lack the ability to adapt. Humankind's fears and uneasiness, which find expression in intolerance, are rooted not so much in what the animals do but in the perception of what they might do. Understanding is the first step to conservation and peaceful coexistence. Only through knowledge can we avoid conflict, recognize their needs, and learn to fully appreciate these monarchs of the wilderness! Their future is in our hands (see figure 7).

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Leopold, Aldo. 1966. *A Sand County Almanac*. New York, NY: Random House Publishing Group and Oxford University Press.

MATTHIAS BREITER is a biologist and award-winning publisher, author, photographer and cinematographer, and biologist. He lives and works mostly in the Arctic and Subarctic regions of North America, focusing much of his work on bears; 11 Snow Place, Kenora, Ontario P9N 0E6, Canada; website: www.breiter-photo.com; email: matthias.breiter@breiterphoto.com.

Only through knowledge can we avoid conflict, recognize their needs, and learn to fully appreciate these monarchs of the wilderness!

Rewilding Germany

BY TILL MEYER

Introduction

When thinking of Germany, all kinds of images can spring to mind; it may be the many relic examples of "quaint" architecture in medieval towns such as Nuremberg; others readily see the skyscrapers of the bustling Frankfurt stock market; to yet others, this country conjures up a picturesque, largely agrarian landscape crisscrossed by the notorious autobahns (highways), which at times allow daredevil drivers to go as fast as they please in their Porsches and Mercedes-Benzes. But who would suspect this country (which is seven times as densely populated as the United States) to contain wilderness areas "undisturbed by significant human activity," "where natural forces and processes predominate," as the International Union for Conservation of Nature (IUCN) would describe wilderness? Yet, Germany is aspiring to open more of its lands to wilderness and to wildness.

Wilderness in Germany is mostly synonymous with national parks. It is not a conservation category in its own right. A recent study (Job et al. 2009) revealed that 26 million Germans (of a population 81.1 million) enjoy spending a part of their year's vacation in or near one of the country's 14 national parks. The year 2010 marks the 40th anniversary of the Bavarian Forest National Park, Germany's first protected area of this kind. The country's remnants of wilderness received plenty of oratory and also some scrutiny: 2010 saw the announcement of a nationwide survey aimed at evaluating the effectiveness of all 14 German national parks. According to EUROPARC Germany, the umbrella organization of the national parks, biosphere reserves, and nature parks in Germany, this initiative is the first of its kind internationally. This voluntary survey measures a wealth of quality criteria, such as available yearly budget, communication with stakeholders, and quality of the ranger force.

The wilderness qualities of the national parks were addressed in a set of questions that dealt with the protection of natural biological diversity and dynamics. According to the recently renewed federal law of conservation in Germany (Deutscher Bundestag 2009), the purpose of the national parks is to ensure undisturbed processes and their natural dynamics on the majority of the park premises. This corresponds to the IUCN's (Dudley 2008) terminology of natural forces and processes described in the primary objectives of category IB (wilderness) and of category II (national park). Category II mandates the protection of "natural biodiversity along with its underlying ecological structure and supporting environmental processes."

Till Meyer. Photo by Berny Meyer.

Although results of the national parks survey will remain capped until official release in 2012, preliminary existing data and statements (Meyer 2010) show that the number of visitors at the majority of national parks in Germany is going up, while at same time many parks lack support of stakeholders in surrounding communities and consider themselves substantially understaffed and underfunded. As for the wilderness criteria, which measures the actual percentage of extent to which natural processes are allowed to dominate, none of the 14 national parks in Germany could live up to the 75% standard required by the IUCN. An estimate by the Federal Agency for Nature Conservation (Bundesamt für Naturschutz, or BfN) assessed six selected national parks in Germany, which reported a range of 41% for National Park Harz, down to National Park Unteres Odertal, in which 15% of the area allowed natural processes to dominate (Riecken 2010).

In addition to the 14 national parks (0.5% of Germany's land area), there are also 16 biosphere reserves in Germany (3.4% of land area) and 101 nature parks (25.5% of land area) organized under EUROPARC Germany. In 2005, this organization developed a recognizable corporate design for Germany's protected areas as National Naturescapes

(Nationale Naturlandschaften). Taking into account that some of the national parks are overlapping with either nature parks or biosphere reserves, one can generalize that in one-third of Germany, nature is protected in ways which require hands-on management, but still allows extractive land uses such as farming, grazing, lumber cutting, or hunting. Only about 0.4% of Germany (corresponding to a little less then 1,800 square kilometers [695 sq. mi.]) could then be considered something resembling wilderness.

Wilderness in Germany?

The statement that approximately 0.4% of the land area of Germany is wilderness in character "is not enough" best sums up the results of a wilderness conference held May 17 to 18, 2010, in Potsdam near Berlin. A resolution signed by the majority of German NGOs demanded that "wilderness be integrated as a leitmotiv [theme] into the federal and state conservation laws…wilderness be part of the strategy to aid the migration of plant and animal species due to climate change… wilderness receives special recognition in the federal mandated net of ecological corridors…wilderness be subject to scientific research in regards to ecological, economic, ethical and social contexts…wilderness be declared on 2% of terrestrial Germany."

The 2% request actually is a reminder of the same amount of wilderness (to be achieved by the year 2020) that first appeared in 2007 in Germany's "National Strategy on Biological Diversity" (Küchler-Krischun et al. 2007). The expansion of wilderness is only one of about 300 goals within this strategy, which was developed by the German government to fulfill the country's obligations to the Convention of Biological Diversity.

The scientific authority behind the German government's conservation decisions is the Federal Agency for Nature Conservation. Its president, Professor Dr. Beate Jessel, explains (pers. comm., 2010): "The goal of 2% wilderness in Germany should be seen as compromise reached in the political realm. From the viewpoint of conservation, a more ambitious target would have been thinkable. But we also have to take into consideration that we live in a country that has been traditionally coined by man-made landscapes and there still remains quite a lot to do to achieve the 2% wilderness by 2020." She acknowledged, however, that "we can be content with this result, as this goal is sustained by the entire government and not only the Department for Environment and Nature Conservation."

Asked if the German government will eventually directly designate wilderness areas, Dr. Jessel said that this was "not absolutely necessary. In regards to the required expansion of wilderness, we first will have to look at the core zones of our national parks, where much needs to be done in regards to IUCN's 75% provision" (pers. comm. 2010). She added that "other protected area categories in Germany such as nature conservation areas would legally allow for the prohibition of human induced changes on many thousands of hectares" and that it "would be desirable to survey the entire system for possible gaps of wilderness." National parks or large areas of free natural processes should be representative of the natural landscapes. However, according to Professor Dr. Jessel, gaps do still exist within certain types of forests and the foothills of the Bavarian Alps.

One particularly difficult issue in Germany is the question of wilderness tourism, and whether the visitor-friendly IUCN wilderness definition could be applied in Germany. Dr. Jessel pointed out that the IUCN definition of wilderness "has for the most part been derived from the wilderness system in the USA, where the dimensions are much larger than in Europe and where special traditions of wilderness use prevail, which are entirely different than [those] in Germany" (pers. comm. 2010). She then defends "our system, where, by and large, it is not allowed to set foot into the core zones of national parks, while the other zones allow for different types of sustainable tourism, containing the corresponding infrastructure with a more or less well developed trail system." As the national parks in Germany are administered by the state and not at the federal level, visitor management is mostly conducted according to a management plan, which caters to the specific needs of conservation and tourism. More often than not, some type of sustainable tourism is permitted on selected trails, even within the more sensitive core zones of the national parks in Germany.

The statement that approximately 0.4% of the land area of Germany is wilderness in character "is not enough" best sums up the results of a wilderness conference.

The perception of wilderness in Germany is obscured further by another issue, independent of the conservation areas mentioned earlier, as there is also the European Natura 2000 Network in place, a sophisticated system of conservation by the European Community (EC), which consists of protected sites under both the European Bird Directive (European Union 1979) and the European Habitats Directive (European Union 1992). Natura 2000 requires that governments "monitor, maintain and restore wildlife and natural habitats at a favourable conservation status." Although in many cases these Natura 2000 zones are situated within regular categories of conservation, in some they're not. And this is good. As many habitats and rare species have persisted outside the official conservation zone, they too needed attention and protection. Thanks to Natura 2000, they receive some protection, and some even have made a remarkable comeback. Among others, these include some of the larger, charismatic flagship species: beaver (*Castor fiber*), lynx (*Lynx lynx*), otter (*Lutra lutra*), wildcat (*Felis silvestris*), and wolf (*Canis lupus*). These animals are tracked inside and outside of protected areas in Germany. All in all, of 223 vertebrate species in Germany previously considered to be on the decline, 143 have recently shown stabilizing trends (Pauly et al. 2009). Looking at the 519 endangered habitat types in Germany, 233 are considered to have stabilized, and 28 show a positive trend.

But there is quite a catch to all this: the EC terminology, "to maintain…natural habitats at a favorable conservation status," seems to exclude the very backbone of wilderness policy in which natural forces and processes predominate. The catch is that, sooner or later, most plant communities (and the associated wildlife) will give way to the natural process of succession (see figure 1). In some places in Germany, this paradoxically turns conservation policy into a force against wilderness. The issue remains quite unresolved but did get some attention in the conference Europe's Wild Heart (Kiener et al. 2009), which was suitably subtitled *The Appropriateness of Non-intervention Management for Protected Areas and Natura 2000 Sites.* The possible solution to the predicament lies in the question of scale. Natural succession can indeed degrade the biodiversity of isolated habitats, for instance, as rare heath and grasslands turn into forests. If a wider landscape approach is applied to the same region and a minimum permeability of the landscape can be provided, populations of vertebrates and invertebrates will be able to move to a more suitable habitat type.

Figure 1—Hardy birches and pines have survived decades of abuse with soil subjected to degradation and compaction by heavy vehicles. Courtesy of the Foundation of Natural Landscapes in Brandenburg.

What does it look like when a country goes wild? On the second day of the Potsdam conference, two busloads full of delegates had the chance to set foot in an area that one day could be developed into the nation's first true wilderness area by IUCN standards (Schumacher 2010). The name of the place is Jüterbog (see figure 2). The first impression was a somewhat dismal one, as the obvious vegetation contained mostly inconspicuous shrubbery, grasses, and small mosses that have started to invade the bare, sandy soil. Curiously, the place was crossed by a maze of what seemed to have been large old tire tracks. Every now and then metal scraps of old rusty piping could be seen alongside these tracks. As the morning's excursion advanced, a more complete picture began to emerge; the groups encountered a very expressive mosaic of grassland interspersed with aspen and birch. The shrubbery turned out to be mostly heather and broom, which in the weeks and months to come would turn into arresting yellows and purples. For birders, the area offered observation of the hoopoe (*Upupa epops*), a colorful bird with a distinctive feather crown, and the nightjar (*Caprimulgus europaeus*), which could be encountered in the early evening hours

displaying their characteristic moth-like flight and emitting strange churring trills.

At one point, Andreas Hauffe, one of the guides at the morning's postconference field trip, suddenly froze to a complete stop, urging his fellow hikers to do the same and take a look to the sandy ground at some paw prints: "Wolf tracks!" he exclaimed. Out of his backpack Hauffe then produced a large, plastic-coated photograph of a wolf crossing a mud puddle. The photo had been snapped by one of the camera traps, which monitor the latest chapter of an exciting invasion (see figure 3). As Hauffe explained, back in 1990 a few wolves crossed the border from Poland into Germany and started to proliferate into a population of an estimated 60 animals in four to five stable packs, which mostly took residence in Saxonia, a state neighboring Brandenburg. In 2007, the first paw prints had been verified in this state as well.

Figure 2—Bare birch and pine trunks near wetland in Jüterbog, with a small group of visitors on a guided tour. Courtesy of the Foundation of Natural Landscapes in Brandenburg.

Figure 3—Wolf in the Lieberose area in the state Brandenburg; photograph taken by an automatic picture trap in 2009. Courtesy of the Foundation of Natural Landscapes in Brandenburg.

His job as a ranger sometimes requires Hauffe to answer questions, some of which have nothing to do with natural history. Long before the area drew the interests of nature lovers, it was famous for its military history. It has served as army quarters and training ground since 1871.

During the course of the excursion another puzzle was solved: The maze of tracks came from army trucks and tanks. And most of the metal debris alongside the trails was the remains of ammunition, rendering the place hazardous to hikers, hunters, and mushroom pickers who venture into the area. Naturally occurring bush fires have been known to occasionally ignite the wartime remnants, adding other hazards to the place in the summer. The brush fires are tolerated in the core area because fire trenches prevent fire from leaping over to the surrounding private forests and agrarian areas. Some trails have already been cleared of ammunition and prepared as hiking trails. Other areas are accessible

Figure 4—Wetlands on the former Lieberose military training ground that were degraded by heavy army vehicles, but when left alone quickly become a haven for biodiversity. Courtesy of the Foundation of Natural Landscapes in Brandenburg.

by guided tours only. Both the acceptance of fire and the limitation (but not exclusion) of visitors are the first steps to an exciting version of wilderness management in Germany (see figure 4).

The Stiftung Naturlandschaften Brandenburg (Foundation for Natural Landscapes in Brandenburg) took advantage of the historical chance and acquired three large tracts of land (see figure 5) within former military training areas that encompassed 12,100 hectares (29,887 acres). The Foundation for Natural Landscapes in Brandenburg is a public-private partnership and is supported by the state of Brandenburg, the Frankfurt Zoological Society, the German Society for Nature Conservation, the Worldwide Fund for Nature Germany, the Gregor Louisoder Environmental Foundation, and also one regionally active landscape preservation association and one private sponsor. Incidentally, this foundation also initiated and managed the Potsdam wilderness congress, fully realizing that new approaches to land management require public debate and, ultimately, public acceptance. It seems to be a curious twist of history that a place, which exemplified the nation's bellicose past, is aspiring to become the kickoff for the country's first official wilderness area.

Ecological Corridors

No national park in Germany is big enough to accommodate large carnivores. Since the purchased military areas were spread apart, the Foundation for Natural Landscapes in Brandenburg came up with a plan to create ecological corridors in South Brandenburg, which would include not only the three former military areas, but also four large nature parks, one biosphere reserve, and several smaller stepping-stone biotopes. The plan identified the barrier effects to wildlife in a corridor 60 kilometers (37 miles) wide and 160 kilometers (99 miles) long, and then it devised measures to counteract fragmentation, such as restoring habitat and building wildlife crossings.

The concept of wildlife crossings could serve as a model for all of Germany, which is crisscrossed by 600,000 kilometers (372,000 miles) of roads, of which 13,000 kilometers (8,060 miles) are multiple-lane highways (autobahns). A recent federal program, which was designed to bolster economic activity, has set aside 17 construction projects (Reichelt 2010) that cost about 69 million euros ($US91 million) and will eventually include wildlife crossings. On the whole, conservationists have identified 125 priority sites where wildlife-crossing projects were needed most urgently (Tschimpke 2010) if Germany is to fulfill its international obligation to halt the loss of biodiversity by 2020.

Continued on page 20

Figure 5—Potential wilderness in the vicinity of Berlin: Three large tract of lands on former military training areas in Jüterbog, Heidehof, and Lieberose, totaling 12,100 hectares (29,887 acres) have been acquired by the Foundation of Natural Landscapes in Brandenburg. Courtesy of the Foundation of Natural Landscapes in Brandenburg.

The National Public's Values and Interests Related to the Arctic National Wildlife Refuge

A Computer Content Analysis

BY DAVID N. BENGSTON, DAVID P. FAN, and ROGER KAYE

Abstract: This study examined the national public's values and interests related to the Arctic National Wildlife Refuge. Computer content analysis was used to analyze more than 23,000 media stories about the refuge from 1995 through 2007. Ten main categories of Arctic National Wildlife Refuge values and interests emerged from the analysis, reflecting a diversity of values, tangible and intangible, for the national public. The findings suggest that the national public's interest in the Arctic Refuge focuses on protecting the area's wildlife and perpetuating their encompassing natural, ecological processes.

David Bengston in Urho Kekkonen National Park, Finland. Photo by Zuomin Wen.

David Fan.

Roger Kaye.

Introduction

The Arctic National Wildlife Refuge was first established as a wildlife range in 1960 because of nationwide interest in preserving, as the area's establishing order states, its "unique wildlife, wilderness, and recreational values" (Seaton 1960). The area's preservation was first proposed in a 1953 magazine article titled "Northeast Alaska: The Last Great Wilderness" (Collins and Sumner 1953), and numerous subsequent media accounts generated the widespread public interest in the area that led to its establishment. Previous refuge system units had been established for the more pragmatic purpose of conserving specific resources; the Arctic Refuge was distinctive in its purpose: "to preserve…values."

In 1980, the Alaska *National Interest* Lands Conservation Act (ANILCA) doubled in size and redesignated the area, affirming the strong national interest in this area and its unique values (emphasis added). ANILCA also contained a provision, Section 1002, mandating study of the refuge's coastal plain for potential oil and gas development, making the Arctic Refuge the subject of one of the nation's longest and most contentious environmental debates. The controversy has generated thousands of media accounts, including numerous books, TV documentaries, magazine features, newspaper articles, opinion pieces, and letters to the editor.

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This outpouring of public interest in the area and its future is unusually voluminous for such a remote and lightly visited place.

But what specifically is the *national interest* in the Arctic Refuge? What values does the refuge possess for its largest constituency—those who don't live nearby and will never visit, but nonetheless care about its management and future? The refuge's administrators and planners need reliable information about the values and interests of this hard-to-reach constituency if stewardship is to include the national interest. This is of particular importance now, as the Arctic Refuge is involved in a major planning process, including revision of its Comprehensive Conservation Plan (CCP). As mandated by ANILCA, the CCP will "identify and describe…the special values of the refuge" (ANILCA Section 304[g][2][B]) and will specify the programs for maintaining these values. But identifying the values of the nonvisiting but interested national public is a methodological challenge.

The main objective of this study was to describe the values that the national public holds for the Arctic National Wildlife Refuge, specifically those values related to the refuge's legal purposes, as expressed in media accounts of the area from 1995 through 2007. We define environmental values as relatively enduring conceptions of what is good or desirable about the natural world (Bengston 1994). It should be noted that identifying support for or opposition to oil development on the coastal plain of the refuge was not a study objective. Oil development is not related to the refuge's purposes, and the Fish and Wildlife Service planning process will not address it—only Congress can decide this issue. Therefore, this study focuses on values related to the refuge's purposes, responsibilities, and mandates.

We examined the national public's values and interests in the Arctic Refuge using an innovative but proven research tool, the InfoTrend computer method (Fan 1988), to analyze a large volume of media articles discussing the refuge. Media articles about a subject reveal the attitudes and underlying values of a wide range of stakeholders. They are expressed in straight news stories in which reporters summarize diverse perspectives and quote many stakeholders, in feature articles that explore the subject in depth, in travel articles that present firsthand accounts of visitors, in letters to the editor in which citizens express their deeply held concerns, and in opinion pieces that represent a wide range of viewpoints. Communications and public opinion research has repeatedly confirmed that media both reflect and help shape public attitudes and beliefs about a wide range of issues and serve as a valid indicator of public attitudes toward these issues (e.g., Burgess 1990; Cockerill 2003; Elliott et al. 1995; Fan 1988; McCombs 2004).

Data and Methodology

The data consisted of media stories about the Arctic National Wildlife Refuge found in the LexisNexis (LN) online commercial database. The stories were retrieved from the LN "US Newspapers" and "Magazine Stories, Combined" online libraries, which together include almost 2,000 magazines and newspapers from across the United States. After removing stories related to but not specifically about the refuge, a total of 23,525 stories were retrieved between January 1, 1995, and December 31, 2007, as relevant to the refuge. Among the remaining stories, paragraphs were eliminated if they were irrelevant. For example, stories about presidential candidates' views on a variety of issues sometimes included just one or two paragraphs about the refuge, and the other paragraphs were irrelevant to this analysis and were deleted.

Identifying and coding expressions of Arctic Refuge values in these stories was also performed using the InfoTrend method, which has been used to successfully predict public opinion, attitudes, beliefs, and values based on analysis of news media accounts on diverse issues (e.g., Fan 1997; Fan and Cook 2003; Bengston et al. 2001; Shah et al. 2002). This method involves the creation of customized "lexicons" or sets of words and phrases related to concepts of interest (in this study, a wide range of topics associated with the Arctic Refuge). A detailed set of computer instructions called "idea transition rules" are then developed that specify how various concepts represented by the lexicons are combined to score for new concepts (in this study, the specific refuge values and interests to be coded are shown in figure 1).

An example of the coding process may be helpful. One of the categories we coded for was Wildlife Conditions of Concern, which captures expressions of an ecologically informed value of wildlife in the context of the Arctic Refuge. Wildlife Conditions of Concern includes wildlife-related behaviors (e.g., hibernate, mating, migration), conditions (e.g., diversity, endangered, populations), life cycle (e.g., survival, mortality, recruitment), and habitat (e.g., calving grounds, feeding ground, winter range). These expressions relate to the ecological context and patterns of life of wildlife. Consider the following paragraph, which expresses Wildlife Conditions of Concern:

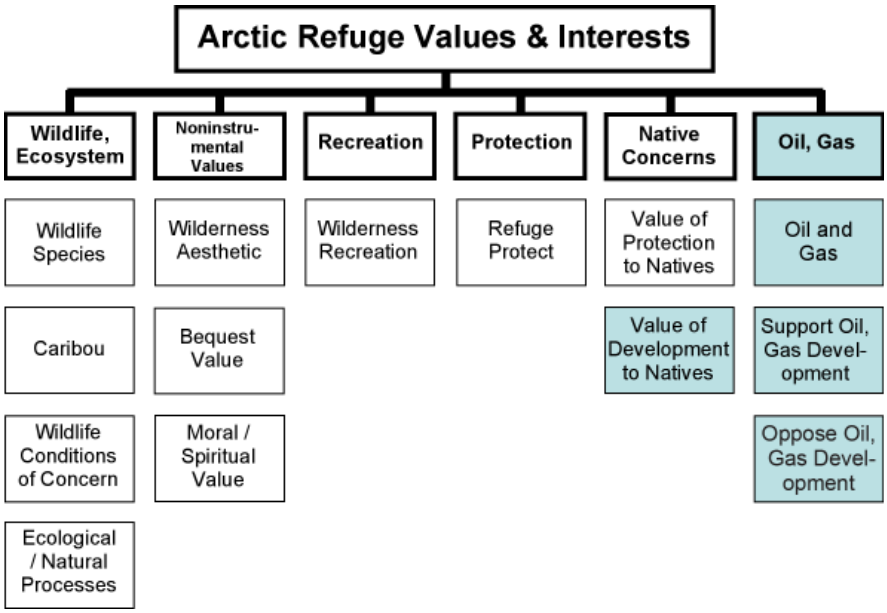

Figure 1—Categories of Arctic Refuge values that were identified and coded in this analysis. Shaded categories are not related to the refuge's purposes as identified in the refuge's 1960 establishing order, PLO 2214, and the Alaska National Interest Lands Conservation Act (ANILCA) of 1980.

> The protections are abundantly justified. The Arctic National Wildlife Refuge, a land of mountains, marshes, rivers and plains, is home to an enormous herd of caribou that travels hundreds of miles from the Porcupine River area of Canada to the coastal plain to *give birth* each spring. The 150,000-member porcupine herd *migrates* to the Refuge because it provides just the right mix of food and open *habitat* where the animals can be on the lookout for *predators*. (emphasis added) (*Tampa Tribune* 1997, p. 18)

In this paragraph, the terms *caribou* and *porcupine herd* were included in a large lexicon of Arctic Refuge "Wildlife" terms that included both general references to wildlife and specific species found in the refuge. The terms *give birth*, *migrate*, *habitat*, and *predator* were all included in a lexicon of wildlife-related terms labeled "Affects Wildlife." An idea transition rule specified that if an "Affects Wildlife" term appeared in the same paragraph as a "Wildlife" term, and in a paragraph that mentioned the Arctic Refuge, this was counted as an expression of "Wildlife Conditions of Concern."

The accuracy of coding was significantly increased by use of a lexicon of "irrelevant terms" to disambiguate words and phrases that would otherwise code inaccurately. For example, phrases such as *bear the burden*, *brought to bear*, and *Moose, Wyoming* (a town where refuge founders Olaus and Mardy Murie lived) were included in a large set of irrelevant terms and deleted from the analysis so that the words *bear* and *moose* in these phrases don't code inaccurately as expressions of wildlife species.

Development of the coding system was an iterative process involving continuous testing and modification of lexicons and idea transition rules by applying them to random samples of text. Throughout this process, the coding was assessed for accuracy and comprehensiveness and modified as required. Once the coding system was comprehensive, a formal validity checking process was conducted through careful examination of a random sample of coded stories to determine the accuracy of the computer coding. Final accuracy rates were in excess of 80% for all coded concepts, a common standard in content analysis (Krippendorff 2003).

RESULTS

Arctic Refuge Values and Interests

Ten categories of Arctic Refuge values and interests related to refuge purposes emerged from analysis of the media articles (see figure 1). The categories shown in figure 1 were not predetermined, but emerged from the analysis of news stories. Virtually all discussion of the values related to refuge purposes was positive, i.e., almost no one is opposed to wildlife, natural beauty, or the other values. Even those who argue in favor of oil drilling often implicitly or explicitly acknowledge the value of caribou or other wildlife as they make the case that drilling for oil *will not harm wildlife*. The following paragraphs describe each of the 10 categories and provide an example of a quote from our stories for each category.

1. **Wildlife Species** captures all discussion of specific wildlife species (including caribou), as well as general references to wildlife in the refuge. The importance and value of wildlife is often stated or implied in paragraphs expressing this value: "The Refuge is home to some of the most diverse and spectacular wildlife in the arctic" (Current Events 2001, p. 1).
2. **Caribou** is the iconic species of the Arctic Refuge. We therefore coded separately for caribou in order to gauge how much of the overall wildlife-related discussion about the refuge revolves around this one species: "This wildlife refuge is very important to many animals that live there, such as the Porcupine Caribou Herd" (Biaggio 2001, p. 5).

3. **Wildlife Conditions of Concern** captures expressions of a more ecologically informed concern for wildlife related to the importance of ecological context, life cycle, and requirements of wildlife: "The coastal plain of the Arctic Refuge represents roughly 5 percent of the North Slope, yet this area is a critical calving ground for the Porcupine River Caribou Herd" (Wright 1999, p. 7B).
4. **Ecological/Natural Processes** includes expressions of a wide range of ecological values and interests related to ecological conditions, components, systems, natural processes, and ecosystem services. For example, "The coastal plain and arctic foothills of the disputed area contain a number of arctic and subarctic ecological zones that provide a vast richness of plant and animal diversity not found in most other areas of Alaska's North Slope" (Levendosky 2001, p. 6B).
5. **Wilderness Aesthetic** value captures expressions of the scenic beauty, wildness, and naturalness of the refuge, i.e., a valued condition of the landscape as essentially free of the human intent to alter, control, or manipulate so that natural processes continue with little or no anthropogenic influence: "But for much of the public this 'American Serengeti,' as environmentalists call it, represents an ideal of natural wildness that must remain pristine" (Knickerbocker 2005, p. 2).
6. **Bequest Value** is the importance of leaving wildlands as a natural legacy to pass on to future generations, as illustrated in the following quotation: "Failing to protect our remaining natural heritage is a gravely unpatriotic act…and I urge Sen. Ensign to act patriotically by protecting the Arctic National Wildlife Refuge for America's future generations" (Whitehorse 2005, p. 10B).
7. **Moral/Spiritual Values** are deeply held connections with or obligations to nature. Environmental philosopher Mark Sagoff notes that we value nature morally when we regard it with love, affection, reverence, and respect (Sagoff 1991), e.g., "That place is a sacred, spiritual place.… It shows me a divine oneness, a unity and power to the universe" (Dial 2001b, p. 1K).
8. **Wilderness Recreation** includes three related dimensions of recreational value related to the refuge. First is the wide range of recreational activities that visitors engage in. Second, Wilderness Recreation captures expressions of the "experience dimensions" or psychological, experiential elements that wilderness recreationists value (e.g., solitude, adventure, challenge, discovery, self-reliance, freedom, and a frontier experience). Finally, this value category also captures the often profound impacts that wilderness experiences have on visitors (e.g., a "once-in-a lifetime" or "soul-stirring" experience), e.g.: "Because the Refuge offers such great hiking and floating, Dittrick leads his birding trips using rafts, kayaks and backpacks… says Dittrick, 'the fact that we're totally dependent on ourselves up there can make for a life-changing experience'" (Dial 2001a, p. E10).
9. **Refuge Protect** captures general expressions of the perceived need to protect, preserve, or conserve the Arctic Refuge. Such statements are most often made in the context of proposals for oil drilling on the coastal plain: "The Arctic Refuge coastal plain is ripe for decisive executive action. Like many conservation issues, this one has been kicking around for decades, and polls show that most Americans want it resolved in favor of preservation" (Drabelle 2000, p. B2).
10. **Value of Protection to Natives** captures discussion of protecting the traditional cultures, lifeways, and subsistence uses of indigenous peoples who use the Arctic Refuge: "Fourteen Gwich'in communities jointly passed a resolution in 1988 to prohibit development and protect the 123,000-member Porcupine Herd. Caribou play a central role in their cultural and spiritual practices, and they rely on the caribou for the bulk of their diet" (Taliman 2002, p. A1).

Four additional categories are shown in shaded boxes in figure 1, which express the potential benefits of extracting petroleum resources on the refuge's coastal plain. These categories were coded but are not examined in this article because they are unrelated to refuge purposes as identified in the refuge's 1960 establishing order and the ANILCA of 1980. It is interesting to note, however, that the ratio of expressions related to support or opposition to oil and gas development in the media slightly favored opposition (52 to 48%), which is similar to most opinion polls on this issue.

Additional Values

In addition to the 10 main categories of refuge values and interests that were coded in this analysis, we observed but did not code several other, less frequently expressed values. First, the importance of migratory bird populations originating in the

Arctic Refuge to people in other regions across the United States was expressed, as in the following example: "Why does this matter to people in the Midwest? The wilderness belongs to all Americans.... We Midwesterners are active birdwatchers and are interested in the welfare of the 180 species that nest on the coastal plain, including snow geese, peregrine falcons, sandhill cranes and golden plovers" (Swan 1999, p. 14).

Second, the "existence value" of the Arctic Refuge was also observed but not formally coded. Existence value refers to the benefit people receive from simply knowing that a particular environmental resource exists, even though they may never visit or use the resource: "Reese, 86, has never been to the Arctic National Wildlife Refuge and has no plans to go, but she cherishes it anyway" (Foster 2001, p. 6D).

Finally, we observed expressions of the "symbolic value" of the Arctic Refuge. To some, the Arctic Refuge is a symbol of freedom like the Statue of Liberty or the American flag, a symbol of our nation's frontier history and cultural heritage, or a symbol of human humility and restraint toward wildlands: "ANWR, he said, was also a symbol of freedom, the 'freedom to continue, unhindered and forever if we are willing, the particular story of planet earth unfolding here'" (Goodman 2001, p. A14).

Frequency of Expression of Values and Interests

Figure 2 presents the frequency of expression of the 10 Arctic Refuge values and interests related to the refuge's purposes (the nonshaded boxes shown in figure 1). Refuge Protect—expressions of the importance of protecting and preserving the Arctic Refuge—was the most frequently expressed value. Expressions of Refuge Protect were sometimes general, without specifying what should be protected or why, but more often they were linked with other specific refuge values such as wildlife or natural beauty, as in the following example: "There are millions of Americans who want to protect the Refuge's beauty, solitude and spectacular wildlife" (Feathers 2005, p. F3).

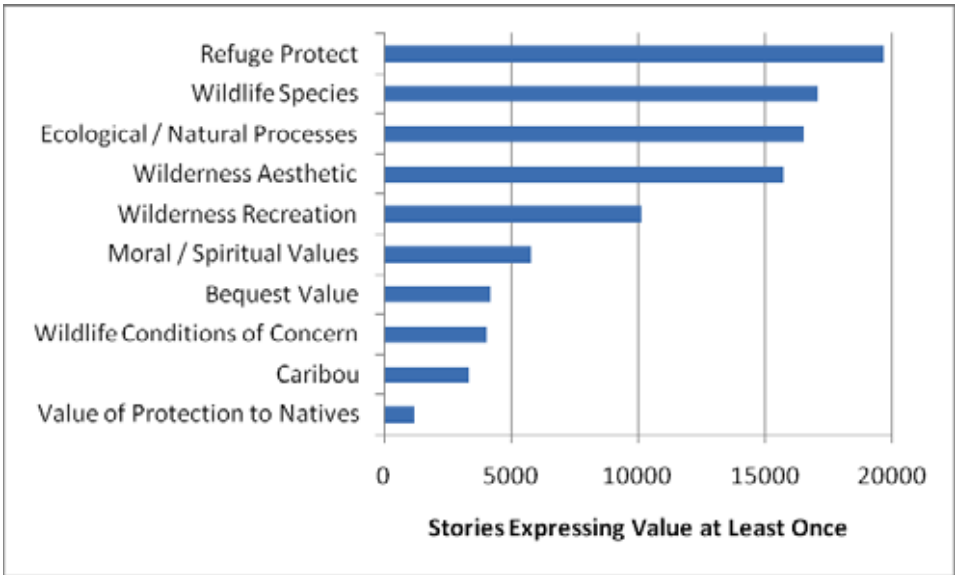

Figure 2—Number of stories expressing Arctic Refuge values related to refuge purposes at least once.

Wildlife Species was the second most frequently expressed value related to refuge purposes (figure 2), closely followed by Ecological/Natural Processes. The diversity of wildlife and large number of species are widely discussed in articles that go into any depth about the refuge, as are descriptions of the Arctic and Subarctic ecosystems and their ecological importance.

Next in frequency was Wilderness Aesthetic value. The natural beauty and dramatic features of the refuge (i.e., valuing the condition of the landscape as wildland undisturbed by anthropogenic influences) are extensively expressed in media accounts. This indicates the prominence of the beauty of the refuge in the public's appreciation of it, including the aesthetic effect of naturalness and wildness inherent in this category.

Wilderness Recreation was discussed as an important use of the Arctic Refuge, although this category was not as frequently expressed as the most commonly expressed values, likely due to the small number of visitors. Moral/Spiritual Values and Bequest Value were also not expressed relatively often, but they are often deeply personal and strongly held values. Research in decision making has shown that people are often reluctant to express values involving moral and ethical considerations (such as Moral/Spiritual and Bequest Value) in discussions of tradeoffs with other values (Hanselmann and Tanner 2008).

Wildlife Conditions of Concern consisted of expressions of a more ecologically informed discussion of wildlife, such as wildlife-related behaviors, conditions, and habitat. This value was expressed relatively infrequently, perhaps due to some overlap with the more general and much more frequently expressed value Ecological/Natural Processes. Caribou were the most frequently mentioned individual species but were discussed infrequently

relative to the comprehensive category Wildlife Species. This may indicate that many people value and are concerned about all species in the refuge. Finally, the Value of Protection to Natives was prominent enough to merit categorization, but was the least frequently expressed value related to refuge purposes.

We also analyzed the co-occurrences of values in order to better understand the context for and interrelationships among refuge values and interests. A co-occurrence of two values meant that a story had at least one paragraph scored as expressing both values. Three pairs of co-occurrences stood out as the most prominent. Among the 23,525 stories scored as unambiguously discussing the refuge, these co-occurrences were:

1. 7,687 for Refuge Protect and Wildlife Species (32.7% of all 23,525 stories),
2. 7,634 for Refuge Protect and Ecological/Natural Processes (32.5%), and
3. 7,093 for Wildlife Species and Ecological/Natural Processes (30.2%).

Therefore, Refuge Protect, Wildlife Species, and Ecological/Natural Processes were the most prevalent values found together. Then there was a drop to 6,606 for the co-occurrence of Refuge Protect and Wilderness Aesthetic value (20.3%), after which there was a gradual decline in co-occurrences for other pairs of value categories. These data suggest that for the public, wildlife, ecological, and aesthetic values are the most prevalent reasons for protecting the refuge. (See Bengston and Fan [2009] for details of the co-occurrence analysis, including a more finely grained examination of value co-occurrence.)

Conclusions and Implications

Prior to the 1953 publication of "Northeast Alaska: The Last Great Wilderness," (Collins and Sumner) the area now encompassed by the Arctic National Wildlife Refuge was of concern to few people outside of the Gwitch'in and Inupiat Natives who inhabited the region. Media accounts of the area during the seven-year campaign to establish the refuge, subsequent accounts focused on expanding it through ANILCA legislation, and more recent media stories discussing the issue of whether the refuge's coastal plain should be made available for or protected from oil development have brought the area to national attention.

Textual accounts such as those analyzed here, often accompanied by photographic and artistic representations, as well as television coverage, films, and other media, have led a large number of Americans to value the refuge in a variety of ways and to become interested in its future.

The Arctic Refuge has a large, broadly based, mostly nonvisiting constituency who value the area in many ways, both tangible and intangible.

This study enables Fish and Wildlife Service administrators and others concerned with the refuge's stewardship to better understand this national interest in the area as specified in ANILCA, and to meet the act's mandate to "identify and describe the special values of the refuge." It provides understanding of the public's perception of the refuge's founding purpose: "To preserve unique wildlife, wilderness, and recreational values." Although the majority of media accounts analyzed were written in response to the oil development issue, our concern was not which position, if any, the author took. Rather, our focus was the underlying refuge values or conditions perceived to be available or at risk.

The study reveals that the national public holds a diversity of values for the Arctic Refuge. Many values are tangible (e.g., wildlife and ecological) and instrumental (e.g., related to recreational or subsistence use); others are intangible and noninstrumental (e.g., aesthetic, bequest, and moral/spiritual). Although the research placed recurring values and objects of interest related to the refuge into discrete categories, examination of the coded text and the co-occurrence analysis reveal how interrelated many are. Valuation of caribou, for example, is closely linked to the maintenance of natural ecological processes and a wilderness aesthetic, and significantly associated with recreational and Native use.

Not surprisingly, the attribute of this wildlife refuge that showed the highest level of expression was Wildlife Species. Somewhat surprising, however, was the fact that expressions of the Ecological/Natural Processes value were nearly as great. Also, nearly as high as Wildlife Species was expression of Wilderness Aesthetic, which captured the often poetic descriptions of the naturalness and wildness qualities represented by the more scientific Ecological/Natural Processes values. This indicates that public valuation of the refuge's wildlife extends beyond the welfare of individual animals and their population numbers. Of central importance is the natural context in which wildlife occurs.

The most frequent expression among all categories was Refuge Protect. The values Wildlife Species and

Ecological/Natural Processes showed the strongest and nearly identical level of co-occurrence with Refuge Protect, followed by Wilderness Aesthetic. These data suggest that the most prevalent motivation for supporting protection of the Refuge is protection of wildlife and perpetuation of the natural processes in which they occur, whether expressed in ecological/scientific terms or more generally as naturalness and wildness. Supporting this conclusion are the values most associated with Bequest Value, the belief that the Refuge should be a legacy passed on to future generations. Articles expressing Bequest Value most often referenced Wilderness Aesthetic and Ecological/Natural Processes, followed by Wildlife Species value.

One of the most apparent implications of these data for management is that the national public's interest in the refuge's wildlife would be best served by maintaining the natural roles, interactions, and population dynamics of all species. It suggests that establishing target population levels or altering species' numbers through habitat manipulation, predator control, or other techniques may be at variance with the reasons the national public values the refuge's wildlife.

Although 43% of the articles expressed the value of Wilderness Recreation, its frequency of expression was significantly lower than Wildlife Species (72%), Ecological/Natural Processes (70%), and the Wilderness Aesthetic (67%). Similarly, Wilderness Recreation value co-occurred with Refuge Protect considerably less than half as often as these values. Although experience dimensions such as adventure, challenge, and exploration were often mentioned, more associated with Wilderness Recreation was the value Ecological/Natural Processes, closely followed by Wildlife and the Wilderness Aesthetic.

Figure 3—Sheenjek River Valley. Photo by Jeff Jones.

The refuge's Existence Value was more often expressed implicitly than explicitly, its nature precluding development of a lexicon and computer rules for accurate coding. If it were more amenable to computer content analysis, perhaps Wilderness Recreation could be characterized as largely a vicarious value. That is, most often enjoyed by those who imagine themselves visiting, or finding satisfaction in just knowing a place providing opportunities for immersion in the natural world exists.

In summary, the Arctic Refuge has a large, broadly based, mostly nonvisiting constituency who value the area in many ways, both tangible and intangible. Wildlife—all species, in their natural context—are most highly valued. Nearly as highly valued are the refuge's uninterrupted natural processes, whether conceived through the scientific concept of ecology or more generally as the wilderness aesthetic. Recreation, Bequest, Moral/Spiritual Values, Existence, and Symbolic values associated with the Refuge are closely linked to these predominate values.

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Backcountry Visitors' Leave No Trace Attitudes

BY WADE M. VAGIAS and ROBERT B. POWELL

Abstract: This study examined overnight backcountry visitors' attitudes regarding 22 common backcountry behaviors. Each behavior corresponded with a specific Leave No Trace Principle for Responsible Recreation. Insight and further understanding of backcountry visitors' attitudes regarding common backcountry behaviors can assist in the development of more effective visitor education strategies, potentially resulting in the reduction of visitor-induced recreation impacts. Data were collected via a mail-back questionnaire from visitors to Cumberland Island National Seashore, Georgia, Glacier National Park, Montana, and Olympic National Park, Washington. Results indicate widespread variability in the perceived appropriateness of several common backcountry activities, indicating that backcountry behaviors may also vary.

Introduction

Wade and Brooke Vagias kayaking in western Maryland. Photo courtesy of Wade Vagias.

Robert Powell in the Everglades.

Park and protected area managers face many difficult and diverse management challenges. As an example, the U.S. National Park Service (NPS) is mandated to balance resource protection and visitor enjoyment while addressing challenges including incompatible adjacent land use, invasive species, climate change, and improper human behavior, among others. Managing visitor behaviors is further compounded, as sensitive environments found in many protected areas may be vulnerable to significant degradation from nominal recreational use (Leung and Marion 2000) and cumulative impacts can be substantial (Hammitt and Cole 1998).

To help mitigate negative impacts, natural resource managers typically employ a multipronged strategy of education and/or enforcement to help meet management objectives (Hendee and Dawson 2002; Lucas 1983; Manning 2003). Education is usually preferred over enforcement, as it provides managers "light-handed" options for lessening visitor-induced impacts and is considered to be more in line with the spirit of the Wilderness Act (Hendee and Dawson 2002). Further, research has shown that education-based programs are preferred by both managers (Washburne and Cole 1983) and visitors (Hendee, Stankey, and Lucas 1990) for protecting resources and reinforcing appropriate visitor behavior over enforcement. Yet the task of effectively educating the public regarding appropriate behaviors can be a complex assignment, with challenges including noncaptive nature of audiences, limited contact time between park personnel and the public, and others (Orams 1997). To assist in overcoming these impediments, agencies have employed social marketing and educational campaigns such as Woodsy Owl's "Give a Hoot, Don't Pollute," Smokey Bear's "Only You Can Prevent Forest Fires," and Leave No Trace.

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Leave No Trace

The most pervasive minimum-impact visitor education program used in protected area contexts today is Leave No Trace (LNT), a program designed to educate recreationists about minimum-impact practices with the end goal of protecting resources (Harmon1997; Marion and Reid 2001). Currently, the LNT message consists of the seven LNT principles:

1. Plan ahead and prepare.
2. Travel and camp on durable surfaces.
3. Dispose of waste properly.
4. Minimize campfire impacts.
5. Leave what you find.
6. Be considerate of other visitors.
7. Respect wildlife.

The LNT program can be traced back to the 1960s when the U.S. Forest Service (USFS) began to encourage "pack it in—pack it out" messages to users (Marion and Reid 2001). Through partnership with the National Outdoor Leadership School, the LNT message continued to develop throughout the 1990s. Leave No Trace (now called the Leave No Trace Center for Outdoor Ethics, or just The Center) was incorporated as a 501©(3) nonprofit organization in 1994. The mission statement of The Center states that it is "dedicated to the responsible enjoyment and active stewardship of the outdoors by all people, worldwide" (www.lnt.org). Also in 1994, a memorandum of understanding was signed with the USFS, Bureau of Land Management, Fish and Wildlife Service, and NPS to formally adopt LNT as the primary minimum-impact visitor education message promoted on federal lands. Other adopters of the LNT program have included various state-level land management agencies, including the recent adoption by all 50 state park managers representing some 5,000-plus state parks, as well as several foreign countries, including Ireland, New Zealand, Canada, Australia, Montenegro, Hong Kong, South Korea, Greece, Scotland, Argentina, Mexico, and Taiwan (www.lnt.org). For a review of the history and evolution of LNT, see Marion and Reid (2001), and see Manning (2003) for a review of studies investigating the role of education as a visitor management tool in protected areas.

Knowledge—Attitude—Behavior Association

When using education to protect resources, protected area managers usually desire to influence or reinforce visitors' knowledge, attitudes, and/or behaviors (KAB). Knowledge refers to information we possess, or "what we know." Attitudes are defined as the "psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly and Chaiken 1993, p. 1). *Behavior*, which is a broad umbrella term, refers to any number of actions a person may undertake.

Focused context-specific educational messages designed to inform NPS visitors regarding specific practices may need to be used to complement the more prevalent general LNT educational effort

To influence KAB, early learning theorists operated under the assumption that the link between learning and behavior was simplistic or directly related, a link occasionally referred to as the "learning leads to loving hypothesis" (Ham 2009, pers. comm.). Under this model, information traveled one way, from the sender (provider of information) to the receiver (recipient of information). According to Ham, the assumption educators make can be described as: "If they know what we know, they'll care as we care" (in press, p. 4,). However, this assumption has proven incorrect (Hungerford and Volk 1990), and advances in psychology and social psychology have provided alternative models for understanding the relationship between education and human behavior (Heimlich and Ardoin 2008; Ham 2009). And although understanding, predicting, and influencing human behavior is particularly complex and context specific, social-psychological theory suggests that one important driver of behavior is a person's attitude regarding the behavior of interest (Ajzen 1991; Ajzen and Fishbein 1980; Kraus 1995). Thus to effectively change behavior, particularly environmental behaviors, researchers have shown that education should target individuals' attitudes or the salient belief structures that underpin those attitudes (Ajzen 1991; Pooley and O'Connor 2000; Ajzen and Fishbein 2005).

This study examined NPS overnight backcountry visitors' attitudes regarding the "appropriateness" of 22 common backcountry behaviors. Each behavior corresponded with a specific LNT Principle for Responsible Recreation. If attitudes are an important determinant of behavior, as social-psychological research contends (e.g., Ajzen 1991; Ajzen and Fishbein 1973, 2005), insight and further understanding of backcountry visitors' attitudes regarding common backcountry behaviors can assist in the development of more effective visitor education strategies, potentially

resulting in the reduction of visitor-induced recreation impacts (Ham et al. 2007).

Methods

Three NPS units were selected for inclusion in this research: Cumberland Island National Seashore (CINS), Georgia; Glacier National Park (GNP), Montana; and Olympic National Park (ONP), Washington. The three study locations were selected because all contain wilderness/de facto wilderness areas, are popular NPS backpacking destinations that attract a significant volume of overnight backcountry visitors annually, require permits for all overnight backcountry visitors, and mandate pretrip check-ins with ranger staff.

A systematic sampling strategy was employed to ensure both representativeness and a more accurate estimate of the error (Babbie 2005). Individuals and groups were intercepted as they registered/picked up their backcountry permits at the backcountry offices/ranger stations within the three respective NPS units. All adult group members present were asked to provide their contact information. This strategy allowed for the sampling of all party members, not just the registered trip leader, as past studies have shown that less experienced backcountry travelers rely on more experienced individuals as sources of information (Ramthun 1998). Questionnaires were subsequently mailed approximately one month after contact and followed a modified Tailored Design Method (Dillman 2007). An adjusted response rate of 65% (N = 162) for CINS, 68% for GNP (N = 279), and 73% (N = 312) for ONP was achieved.

Our principle interest in conducting this study was to explore the mean scores of respondents' attitudes regarding the behaviors of interest as well as the variability (spread in scores) as evidenced by standard deviations (SD). Global perceptions of LNT as a program were measured via two Likert-type statements anchored from 1 = strongly disagree to 7 = strongly agree. The appropriateness of specific LNT practices were measured using 22 Likert-type statements anchored from 1 = very inappropriate to 7 = very appropriate. Only attitudes pertaining to LNT Principles 2–7 were investigated, because LNT Principle #1 addresses behaviors that occur prior to the wilderness recreational experience. Each item was written to solicit maximum variation in responses. For example, one item reads "having a campfire." Having a campfire in the backcountry has been, and will likely continue to be, common practice among many backcountry campers, yet LNT principles recommend foregoing a fire to lessen environmental impact (www.lnt.org). In fact, all 22 of the specific items are considered inappropriate backcountry behaviors under strict interpretation of LNT.

Results

Greater than 63% of the GNP sample was male, with a mean age of 36.2 years; approximately 60% of ONP respondents were male, with an average age of 41.4; and 62% of CINS respondents were male, with an average age of 40.3 years. More than 95% of the total sample was white, and more than 90% of the respondents in each unit reported having a college degree or higher. Slightly more than half of respondents were registered as the trip leader. For 76% of GNP respondents and 63% of CINS respondents, this was their first trip to the respective NPS unit. This contrasts sharply with ONP, where 66% of respondents indicated visiting ONP at least once prior to being contacted for participation in this study.

Awareness and Global Perceptions of Leave No Trace

The majority of GNP, ONP, and CINS respondents reported they had heard of LNT (94%, 97%, and 89%, respectively). As a follow-up, respondents who answered yes were asked to indicate the year they first heard of LNT. ONP respondents indicated having heard of the LNT in 1992.5 (mean year), and GNP and CINS respondents both indicated 1995.

Overall, support for the LNT program appears high, with a majority of GNP, ONP, and CINS respondents answering either "6" or "7" to the item "it is important to use minimum-impact/LNT techniques when in the backcountry" (91%, 93%, and 89%, respectively). Likewise, a predominance of respondents indicated that they believe the LNT practices help reduce environmental harm. Approximately 68% of GNP respondents (M = 1.65), 69% of ONP respondents (M = 1.56), and 62% of CINS respondents (M = 1.74) "strongly disagreed" with the statement: "Minimum-impact/LNT techniques do not reduce the environmental harm caused by backcountry travel."

Attitudes Regarding Specific LNT Principles

Attitudes toward LNT Principle #2, Travel and Camp on Durable Surfaces, were evaluated by eight statements (see table 1). Mean scores as well as standard deviations varied widely. For example, "moving rocks and/or logs to make a campsite more comfortable" is viewed by GNP respondents as slightly inappropriate (M = 3.59), but slightly appropriate by both ONP and CINS

Table 1—Means and standard deviations of attitudes under LNT Principle #2: Travel and Camp on Durable Surfaces.

Item	Unit	N	Mean[1, 2]	SD
Walking around muddy spots on the trail	GNP	273	4.31	1.7
	ONP	308	4.02	1.6
	CINS	157	4.67	1.5
Hiking side by side with my friends on existing backcountry trails	GNP	275	2.88	1.7
	ONP	308	2.93	1.6
	CINS	159	3.55	1.6
Camping along the edge of a stream or lake	GNP	271	4.22	1.9
	ONP	309	3.78	1.9
	CINS	159	4.22	1.9
Moving rocks from where I plan to place my tent	GNP	275	4.37	1.6
	ONP	308	4.74	1.7
	CINS	159	4.94	1.5
Moving rocks and/or logs to make a campsite more comfortable	GNP	273	3.59	1.7
	ONP	308	4.25	1.7
	CINS	158	4.35	1.6
When camping in heavily used areas, placing the tent in an undisturbed spot	GNP	271	2.14	1.6
	ONP	306	2.07	1.4
	CINS	158	2.81	1.7
In popular backcountry areas, camping where no one has camped before	GNP	273	1.77	1.2
	ONP	309	1.77	1.2
	CINS	159	2.31	1.4
Camping two nights in a pristine camp	GNP	269	4.90	1.7
	ONP	301	4.67	1.8
	CINS	153	5.07	1.4

[1]Mean score based on a 7-point Likert scale (1 = very inappropriate, 4 = neutral, 7 = very appropriate).
[2]Lower mean score reflects attitude more congruent with behavior/LNT principle.

respondents (M = 4.25 and 4.35, respectively). The standard deviation (SD) was ≥ 1.6 points for each of the units investigated, indicative of widespread divergence in attitudes regarding the appropriateness of this behavior. Similar items that had mean scores close to neutral with relatively large SD included "camping along the edge of a stream or lake" and "walking around muddy spots on the trail (figure 1)." However, respondents from all three units reported attitudes more closely aligned with recommended LNT practices regarding the behaviors "Hiking side by side with my friends on existing backcountry trails" and "In popular backcountry areas, camping where no one has camped before."

Respondents were fairly consistent across the study sites in their attitudes regarding waste management practices (Principle #3, table 2). Of particular interest for managers is the finding that "burying used toilet paper" is viewed as slightly appropriate in all units (CINS M = 4.75, GNP M = 4.17, ONP M = 4.46). Further, the SD for this item was at least 2, indicating widespread variability among respondents about the appropriateness of this behavior. For example, approximately 18% of GNP respondents, 14% of ONP respondents, and 10% of CINS respondents indicated this as "very inappropriate" (scoring this item a "1"), whereas 24% of GNP respondents, 25% of ONP respondents, and 27% of CINS respondents indicated this as a "very appropriate" behavior (scoring the same item a "7"). Also of interest are attitudes regarding urinating on vegetation, with means ranging from 3.2 to 3.7. Although on the "inappropriate" side of the scale, the scores are close to neutral and may reflect a level of complacency about this action. Particularly in alpine environments, urinating on vegetation deposits salts that subsequently may be dug up by animals, killing the plant.

Results pertaining to various wilderness backcountry practices related

Table 2—Means and standard deviations of attitudes under LNT Principle #3: Dispose of Waste Properly.

Item	Unit	N	Mean[1, 2]	SD
Burying used toilet paper	GNP	274	4.17	2.2
	ONP	308	4.46	2.1
	CINS	158	4.75	2.0
Urinating on vegetation	GNP	273	3.15	1.6
	ONP	304	3.46	1.7
	CINS	159	3.70	1.9
Burning paper trash in the campfire	GNP	274	3.16	1.9
	ONP	309	3.84	2.1
	CINS	159	4.08	1.9
Using soap in streams as long as there are currents to help dilute the suds	GNP	275	1.89	1.2
	ONP	310	1.95	1.3
	CINS	158	2.13	1.4
Depositing human waste on top of the ground so it will decompose quickly	GNP	275	1.55	1.1
	ONP	309	1.58	1.1
	CINS	159	1.86	1.3
Disposing of dishwater in streams or lakes	GNP	275	1.52	0.9
	ONP	310	1.53	1.0
	CINS	159	1.45	0.9

[1]Mean score based on a 7-point Likert scale (1 = very inappropriate, 4 = neutral, 7 = very appropriate).
[2]Lower mean score reflects attitude more congruent with behavior/LNT principle.

Figure 1—Braided trail made by users avoiding a muddy trail tread. Photo by Ben Lawhon.

to LNT Principle #4, Minimize Campfire Impacts, suggest widespread variation across individuals and the three units (see table 3). Campfires have long been a part of the backcountry experience, and the results of this study show general acceptance for fires, with more than 50% of individuals from the three units indicating a neutral to very appropriate response for the item "having a campfire" and relatively wide variation on scores within the unit. Results regarding the three other campfire attitudinal items were similar (see figure 2). The item "building a fire ring if one is not present" received the lowest mean scores across all units with scores below 4. However, 33.4% of CINS respondents, 16.9% of GNP respondents, and 22.7% of ONP respondents indicated this behavior was appropriate (5 or higher).

The appropriateness of leaving what is found in the backcountry (Principle #5) was evaluated via the item "keeping a single small item like a rock or feather as a souvenir." A majority of individuals across the three units indicated that the behavior was slightly inappropriate to very inappropriate. However, 19% of GNP respondents, 28% of ONP respondents, and 36% of CINS respondents indicated that this behavior was slightly appropriate to very appropriate (M = 2.91, 3.52, and 3.70, respectively).

Principle #6, Be Considerate of Other Visitors, was evaluated with the statement: "camping with large groups (8 or more people) in the backcountry." The LNT message espouses that groups should be kept small and large groups broken into small groups. Mean scores ranged from 2.98 at ONP to 3.81 at CINS (GNP M = 3.10).

The seventh LNT Principle, Respect Wildlife, was evaluated with two items: "dropping food on the ground to provide wildlife a food source" and "feeding wildlife" (see table 4). Scores between GNP and ONP were quite similar across both items, with CINS visitors indicating slightly higher scores for both items. Overall, respondents indicated that the behaviors were very inappropriate.

Discussion and Management Implications

The purpose of this study was to examine overnight backcountry visitors' attitudes regarding the "appropriateness" of 22 common backcountry behaviors. Each investigated behavior corresponded directly with a specific LNT Principle for Responsible Recreation. A number of important findings emerged that transcended study sites and are worthy of further discussion. At a global level, respondents were very positive and supportive of using LNT techniques. This suggests they are largely supportive of the

Table 3—Means and standard deviations of attitudes under LNT Principle #4: Minimize Campfire Impacts.

Item	Unit	N	Mean[1, 2]	SD
Having a campfire	GNP	269	4.15	1.7
	ONP	305	4.10	1.8
	CINS	158	4.37	1.8
Cooking over a campfire in the backcountry	GNP	274	3.84	1.9
	ONP	308	3.72	1.9
	CINS	159	4.21	1.8
Building a fire ring if one is not present	GNP	273	2.41	1.9
	ONP	308	2.80	2.0
	CINS	159	3.25	2.3
Leaving charred wood contained in the fire ring	GNP	272	3.88	1.9
	ONP	307	4.13	1.9
	CINS	157	4.55	1.7

[1]Mean score based on a 7-point Likert scale (1 = very inappropriate, 4 = neutral, 7 = very appropriate).
[2]Lower mean score reflects attitude more congruent with behavior/LNT principle

Figure 2—Campfire ring and evidence of past use. Photo by Ben Lawhon.

message and the corresponding behaviors in a general sense. However, as can be seen in the discrepancy in mean scores between the two global items and 22 specific items, positive global attitudes do not necessarily equate to attitudes congruent with specific recommended LNT behaviors. For example, attitudes toward LNT Principle #2, Travel and Camp on Durable Surfaces, measured by items such as "moving rocks and logs to make a camp more comfortable," or "walking around muddy spots on the trail" (both inappropriate), received both supportive and unsupportive responses. The first item, "moving rocks and/or logs to make a campsite more comfortable" is viewed by 32.6% of GNP respondents as appropriate, 19% had a neutral response, and 48.3% felt the behavior was inappropriate. Similarly, in CINS, 59% of respondents felt it was appropriate to "walk around muddy spots on the trail," 22% were neutral, and 19% felt it was inappropriate.

The relatively high variability (SD) in scores on certain behaviors suggests that certain recommended practices may not be fully understood and/or supported by backcountry visitors. This incongruity between visitors' positive global support for the LNT message and the more varied attitudes toward specific behaviors suggests that opportunities exist to improve educational efforts. Social psychological theory and communication theory suggests that educational efforts aimed at influencing behaviors must be targeted and specific for the context, audience, and behavior (Ajzen 2005; Ham and Krumpe 1996). In other words, additional specific and targeted education efforts that complement general LNT messaging may need to target a specific "problem" behavior. Although a general message may promote a general philosophy and ethic, it may not necessarily translate into support and adoption of specific behaviors.

Conclusions

Attitudes toward the specific recommended LNT behaviors varied, at times widely. These results suggest that educational efforts need to target not only the seven general LNT principles but, more importantly, the specific behaviors that underpin each principle. In particular, this research suggests that additional or focused context-specific educational messages designed to inform NPS visitors regarding specific practices may need to be used to complement the more prevalent general LNT educational efforts. This appears particularly important in areas where visitors mistakenly undertake behaviors that negatively impact valuable resources due to ignorance or misunderstanding regarding the application of the LNT principles.

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Table 4—Means and standard deviations of attitudes under LNT Principle #7: Respect Wildlife.

Item	Unit	N	Mean[1, 2]	SD
Dropping food on the ground to provide wildlife a food source	GNP	275	1.19	0.7
	ONP	310	1.19	0.7
	CINS	159	1.33	0.8
Feeding wildlife	GNP	273	1.16	0.6
	ONP	310	1.21	0.8
	CINS	159	1.30	0.7

[1]Mean score based on a 7-point Likert scale (1 = very inappropriate, 4 = neutral, 7 = very appropriate).
[2]Lower mean score reflects attitude more congruent with behavior/LNT principle

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On the Edge, Peering In

Defining and Managing the Near-Wilderness Experience on the Denali Park Road

BY JEFFREY C. HALLO and ROBERT E. MANNING

Abstract: Just as the notion of wilderness has evolved over time, so has the concept of a wilderness experience. In this study, we explore the concept of a "near-wilderness" experience at Denali National Park. Using qualitative interviews of visitors on the Denali Park Road, a number of potential indicators of quality for the near-wilderness experience are identified.

Jeffrey C. Hallo.
Photo by Martha Manning.

Robert E. Manning.
Photo by Martha Manning.

Introduction

A recent survey of National Park Service wilderness managers estimates that as many as half of all wilderness visitors are day users and that day users may have quite different motivations and expectations than "conventional" wilderness visitors (Abbe and Manning 2007). It is reasonable to assume that these day visitors confine themselves largely to the road corridors near the boundaries of designated wilderness. In a broader sense, the vast majority of Americans do not even set foot inside wilderness areas, but may appreciate them from outside of their borders. People who use wilderness resources, visually or otherwise, from just outside of the boundary of a wilderness area may be termed "near-wilderness" visitors. These near-wilderness visitors differ in the sites they access and how they access them, but common threads that link these people together are their proximity to wilderness and their dependence on the resources and resource conditions of wilderness.

What experiences are these near-wilderness visitors seeking? Substantive research has enhanced understanding of conventional wilderness experiences, and this has helped guide wilderness management (e.g., Glaspell et al. 2003; Lawson and Manning 2002; Watson et al. 2007). But conventional measures of the wilderness experience, such as trail encounters and campsite conditions, are probably not highly relevant to near-wilderness visitors. A substantial number of near-wilderness visits occur annually, likely even surpassing the number of traditional visits in places such as Alaska, where flightseeing aircraft, cruise ships, and bus tours bring hundreds of thousands of visitors to the edge of wilderness areas. As what may be the largest "client" group for wilderness managers, near-wilderness visitors deserve more research and management attention. This is particularly true given that an understanding of how visitors relate to wilderness can improve stewardship of the wilderness experience (Dvorak and Borrie 2007). The objective of this study is to explore one case of the near-wilderness visitor experience at Denali National Park.

The Study

Nearly 2 million acres (809,717 ha) of Denali National Park are designated wilderness. A 300-foot-wide (91 m) corridor that contains the 90-mile-long (145 km) Denali Park Road is excluded from this designation, and this road provides a vast majority of park visitors with their means of seeing the park and its wilderness (Tranel 2000). All park visitors (with a few minor exceptions) are required to ride on buses along the

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road. Visitors who ride the park's Visitor Transportation System (VTS) buses are allowed to leave the buses and walk off the road corridor, but few do. In this sense, most visitors are "on the edge, peering in" to the vast wilderness that is the heart of the park. Visitation on the Denali National Road is an example of one type of near-wilderness experience.

To help define and manage the experience of visitors on the Denali Park Road, this study adopted the approach of management-by-objectives frameworks such as Limits of Acceptable Change (Stankey et al. 1985) and Visitor Experience and Resource Protection (National Park Service 1997; Manning 2001). These frameworks are built on the foundation of formulating indicators and standards of quality for park and wilderness resources and the quality of the visitor experience. Indicators of quality are measurable, manageable variables that help define management objectives, and standards of quality define the minimum acceptable condition of indicator variables. For example, Watson, Knotek, and Christensen (2008) found that gaining perspective of one's size and scale relative to their environment, seeing climbers, and landing on a glacier were potential factors or indicators important to flightseers' experiences (one type of near-wilderness visitor) at Denali National Park. Since relatively little is known about the near-wilderness experience beyond flightseeing, this study focused primarily on potential indicators of quality for the Denali Park Road visitor experience and used qualitative research methods.

Exit interviews were conducted with Denali Park Road visitors during the 2006 peak visitor use season (July–August). Respondents were purposively selected so that road users on VTS buses, tour or commercial buses, and in RVs were included in the study. Interviews were conducted in a semi-structured format in which all respondents were asked a series of standard questions, but the interviewer was permitted to ask follow-up or exploratory questions. All interviewees were asked the question, "Did you feel you were in the wilderness during your trip along the road? Why or why not?" Responses to this question serve as the foundation for the examination of wilderness (or near-wilderness) experiences in this article.

Interviews were recorded and transcribed verbatim. A content analysis of each interview was then performed. In this analysis, interviews were coded based on procedures described by Patton (2002) and Miles and Huberman (1994). Coding segments data into simpler, general categories that can then be used to expand and tease out new questions and levels of interpretation (Coffey and Atkinson 1996). Codes assigned during the process were developed inductively—as they emerged from the text of the transcripts—but the structured questions were used as an organizing framework (Strauss and Corbin 1990). Potential indicators were then derived by examining codes and related text for variables that meet criteria for a good indicator (e.g., measurable, manageable, integrative, and related to visitor use) (National Park Service 1997; Manning 1999, 2007).

Three researchers participated in coding, but each transcript was coded by a single coder. However, several steps were taken to ensure an acceptable degree of coding reliability. First, a lead coder was designated, and he established all new codes. However, new codes were suggested by all three coders. Second, all coders independently coded the first five transcripts, compared the codes assigned, and discussed and resolved any differences. Third, intercoder reliability was checked using the formula recommended by Miles and Huberman (1994): Coder reliability = number of agreements/(total number of agreements + disagreements). A conventionally acceptable intercoder reliability of 77.1% was obtained in coding of transcript data.

Study Findings

A total of 126 interviews were conducted with road users: 52 with VTS bus users, 59 with tour or commercial bus users, and 15 with RV users. Responses to the question, "Did you feel you were in the wilderness during your trip along the road? Why or why not?" were first categorized as affirmative or nonaffirmative. Of the codes assigned, 122 affirmed a feeling of being in the wilderness and 95 did not. (Many of the respondents considered multiple, sometimes opposing, reasons for feeling as if they were or were not in wilderness) Additional subcodes were assigned to characterize reasons for these feelings.

Affirmative subcodes suggested that the most frequently occurring reasons for respondents feeling as if they were in the wilderness was the "road was surrounded by a vast, natural landscape," there was "not much traffic or use" on the road, there were "few buildings" along the road, or because of "the wildlife that was seen" while on the road (see table 1). A respondent characterized many of these subcodes when he said:

Respondent: Yeah, definitely.
Interviewer: Why is that?
Respondent: Um, because there, you don't see habitation, human habitation. You don't see a lot of vehicles. You don't see hardly anything. A few buses, and we did see animals, so, and the wilderness is, it looks like it's untouched.

Table 1—Subcodes assigned for affirmative responses to the question, "Did you feel you were in the wilderness during your trip along the road? Why or why not?"

Code or subcode	Frequency
Yes (further reason not given)	6
Road is surrounded by a vast, natural landscape	42
Not much traffic or use	18
Few buildings	15
Character of the road	11
Wildlife that was seen	11
Lack of street signs, traffic signals, or power lines found on other roads	7
Only buses, no cars on the road	5
Not much litter	2
Quiet	2
I walked along the road	1
Primitive or undeveloped rest areas	1
Character of the bus	1

In addition, some respondents reported that the "character of the road" and a "lack of street signs, traffic signals, or power lines found on other roads" contributed to a feeling of being in wilderness on the Denali Park Road:

Respondent 1: Yes. There were very few cars, very few people, then, you know, an occasional bus or other buses, but that's it. You didn't see people walking the roads, you didn't see, you know, lots of buses or lots of cars.

Respondent 2: And also I think that the nature of the road, it was a little bit bumpy, but that contributes to the feeling that you're in a wilder environment. If it had been a paved road with several lanes of yellow stripe down the middle, then that would have lessened the wildness, the experience.

Respondent 1: Minimal signage.

Respondent 2: Yes, that's, I was just going to say for as far as you could see, you're not seeing any development…

Respondent 1: Right.

Respondent 2: …you know, no houses. You're just seeing land, and hopefully wildlife.

Respondent 1: Not McDonald's.

Respondent 3: As the young lady said, you know, it's the road. Don't ever pave that road. It will eliminate a lot of the feeling that you're out in the middle of no-man's-land, if you pave it.

Some respondents felt that it was the lack of cars or being required to ride a bus that made it feel as if they were in wilderness on the Denali Park Road: "I would say the thing that I, talking about feeling like wilderness, I would say that you feel it a lot more being on one of the buses than you do having your own car driving back in." Other subcodes assigned (though with less frequency) to explain affirmative responses to feelings of being in wilderness were "not much litter," "quiet," "I walked along the road," "primitive or undeveloped rest areas," and "character of the bus."

Reasons given for nonaffirmative responses to this question were most frequently characterized by the subcodes "number of buses and people," "being on the bus," or "the road itself" (see table 2). For example, the following respondent suggested that being on the bus, and particularly having to look through the windows, removed visitors from a feeling of being in wilderness:

Respondent: Well, on the drive it's just the window. You know, you're driving through it and there's a window. It's still a barrier, you know. Like, today we went up the mountain and we saw the Dall sheep and you know, like, they were mainly in front of the garbage can, and if there's no barrier, you can kind of like, they can just charge at you, just kind of like primal instinct or what-

Table 2—Subcodes assigned for nonaffirmative responses to the question, "Did you feel you were in the wilderness during your trip along the road? Why or why not?"

Code or subcode	Frequency
No (further reason not given)	1
Number of buses and people	31
Being on a bus	28
The road itself	20
Facilities (rest stops) were present	7
Landscape wasn't rugged or forested	5
Construction activities	2
Human created noises	1

ever you want to call it. But if there's a bus, I mean, it's not happening, you know? It's not going down, so… the excitement's dead.

Interviewer: So, just the fact that you're in a bus removes that wilderness feeling?

Respondent: Exactly, yeah, exactly, one hundred percent. Like I said, it's just like in a zoo. I mean, it can be a gate or, it can be a window. It's still there, it's still a barrier.

Other respondents indicated the road and seeing many buses took away from their wilderness experience:

Respondent 1: You could always see the road in front of you. It's when you're in the middle of nowhere and you can't see or hear anything. That's wilderness.

Interviewer: So the road took you out of that feeling?

Respondent 1: Yeah, you know you're still attached to civilization.

Respondent 2: Yes, and because you're constantly seeing buses ahead of you or passing you.

Other nonaffirmative subcodes were "facilities (rest stops) were present," "construction activities," "human created noises," and "landscape wasn't rugged or forested." The latter of these was mentioned by the following respondent:

Respondent: I just thought wilderness would be more snow-capped mountains, rugged-looking mountains, more forestation, because what looked nice was really a valley. I just didn't have the concept of a smooth rolling green valley in Alaska. I thought it would be a riverbed with sheer drops to the riverbed, mountain drops.

Interviewer: So wilderness to you means trees?

Respondent: Mountains, trees, rivers, but more rugged looking than I think I saw here.

Findings from this study…suggest that either indirect use (through viewing) or use of the edges of wilderness constitute a perceived but authentic wilderness experience for many visitors.

Characterizing the Near-Wilderness Experience

Study results indicate that a substantial portion of respondents felt as if they were experiencing wilderness while riding a bus on the Denali Park Road. Denali's landscape and wildlife immediately surrounding the road undoubtedly play the primary roles in this finding. However, responses suggest some characteristics of the road itself—its bumpy, rugged character; its built features (or lack thereof) in comparison to other roads; low use levels; and the use of buses instead of automobiles—contributed to a feeling of being in wilderness. This suggests that Nash's (2001) definition of wilderness as a mood or feeling assigned by an individual appropriately defines the concept of wilderness for many vehicle-based visitors at Denali. Nash (2001) calls for us to "accept as wilderness those places people call wilderness," (p. 5) and the Denali Park Road may be one of those places where this call should be heard. It may be an example of a road that—limited in development and use and closely managed to protect the surrounding landscape—may be compatible with the concept of wilderness.

Not all respondents felt as if they were within wilderness while on the road. The road, built facilities along it, or the use of the road by buses or people detracted from a feeling of being in wilderness for some respondents. This segment of visitors seems to better align with the traditional concept of wilderness as a place devoid of roads and untrammeled by humans. Some interview responses suggest that these road users might increase their feelings of being within wilderness by either walking along the road or taking short hikes off the road. No permit is required for day hiking at Denali, and VTS buses will stop (barring safety concerns) to let off or take on passengers at most places along the road. However, few visitors take advantage of these opportunities to obtain a greater sense of wilderness. This may be in part due to a lack of awareness of the opportunity for such activities.

The study suggests the existence of an unconventional type of wilderness experience at Denali National Park, the experience of seeing and appreciating a vast wilderness landscape without actually setting foot in the area. The vast majority of visitors to Denali ride the Park Road through the heart of a 2-million-acre (809,717 ha) designated wilderness area and feel as though they had a wilderness experience. Moreover, through qualitative interviews, respondents were able to report several dimensions of this experience that affect its quality, including wildlife viewing, "solitude," the quality of bus drivers, bus maintenance and comfort, vehicle-generated dust, and visitor compliance with wildlife observation rules.

It should be noted here that the near-wilderness experience is not universal, and that these dimensions are specific to the near-wilderness experience of vehicle-based visitors on the

Figure 1—An opportunity to view wildlife at close proximity is one variable important to the experience of Park Road visitors. Photo courtesy of Jeffrey Hallo.

Figure 2—Visitors stop along the Park Road to enjoy views of Mt. McKinley and a vast, natural landscape. Photo courtesy of Wayne Freimund.

Denali Park Road. For example, on the Denali Park Road, bus drivers provide interpretation that fosters (or does not foster) a sense of wilderness. Also, the maintenance and condition of buses influence a person's ability to see the wilderness landscape through bus windows that are clean and can be lowered, and brakes that operate noiselessly permit visitors to focus on the wilderness instead of their safety in a vehicle. These same dimensions may or may not be valid for the near-wilderness experience on other roads, and are certainly not applicable for near-wilderness experiences on trails.

Closer examination of narrative responses associated with the codes in tables 1 and 2 suggests even more specific manifestations of the dimensions important to the near-wilderness experience on the Denali Park Road. For wildlife viewing, respondents often mentioned the importance of opportunities to see wildlife, particularly grizzly bears, and the distance of wildlife sighted from the road. These manifestations of wildlife viewing might be useful as indicators of quality for the near-wilderness experience on the Denali Park Road. For example, if a relationship exists between the presence of grizzly bears along the road corridor and the number of vehicles on the road, then a quality near-wilderness experience (which would include a high probability of seeing a grizzly bear at close proximity) might be provided by adjusting the number of vehicles allowed on the road. However, in the absence of this relationship (or the ability to quantify it), management efforts might focus on other potential experiential indicators.

Emergence of the concept of solitude (and the opposite concept of crowding) in interview codes in tables 1 and 2 (e.g., "not much traffic or use," "number of buses and people") suggests that vehicle-based visitors at Denali expect and value one of the primary characteristics of wilderness that attracts more traditional users. However, based on the respondent narratives associated with the codes mentioned above, solitude for vehicle-based visitors is characterized in less conventional terms. Some respondents expressed their perceptions of solitude as having few encounters with vehicles either along the road, at rest stops, or at wildlife stops. Being on a bus with other people, even if they are not part of a personal group, may not substantially detract from a sense of solitude for many Denali Park Road users. Other respondents suggested that it

Figure 3—For some study respondents, the Park Road and vehicles that use it removed them from a feeling of being in wilderness; other respondents indicated a feeling of being in the wilderness because of the character of the road. Photo courtesy of Wayne Freimund.

was the number of other vehicles within view, regardless of whether they were directly encountered, that most affected their perceptions of solitude. Methods to manage these indicator variables to enhance the near-wilderness experience on the Denali Park Road might include adjusting road-use limits, altering bus schedules to reduce vehicle encounters or sightings, or implementing and enforcing policies to mitigate encounters or sightings. An example of the latter might include requiring that the first bus that arrives at a rest or wildlife stop move along after a certain period of time when other buses begin to queue behind it.

Dust generated by vehicle traffic can be substantial along the Denali Park Road, particularly during drier periods. Dust affects the ability of visitors to see wildlife and scenery. The National Park Service currently uses a liquid spray to reduce dust on some portions of the road. However, it is uncertain if applications of this liquid are adequate (in frequency and scope) to reduce dust levels to a point necessary to protect the experience of road users. Also, reducing bus encounters would further lessen impacts of vehicle-generated dust on the wilderness experience of road-based visitors.

Actions of other users when viewing wildlife may impact the wilderness experience on the Denali Park Road. For example, bus riders who call out to wildlife or extend themselves out of a bus window when observing wildlife may reduce both opportunities for viewing wildlife for others and the naturalness of observations that do occur. Both of these actions are not allowed while observing wildlife from buses. However, visitors sometimes ignore these rules, as indicated by some respondents.

Management Implications

Denali's 1986 General Management Plan established a use limit of 10,512 vehicle trips annually on the Park Road to protect the park's natural and experiential resources. This limit was determined by adding 20% to use levels observed in 1984. Visitor demand for vehicle-based trips on the

Park Road is now nearing this use limit. This has created a need to reexamine the current limit to see if it is appropriate for balancing protection of wilderness resources, experiences, and access.

Findings from this study suggest that many Denali Park Road visitors feel as if they are experiencing wilderness, at least to some degree. But, several factors do take away from a feeling of being in wilderness. Monitoring and actively managing potential indicators identified in this study could protect or enhance the quality of the near-wildness experience on the road while maintaining the current use limit. It may also be wise to monitor these indicators while the current use limit is adjusted up or down to test the effect of these changes on the quality of the near-wilderness experience. However, study findings reported here do not suggest if or how much the current use limit could be increased without unacceptably degrading the Denali Park Road near-wilderness experience. Additionally, experiential concerns are just one of several considerations on the Park Road. Impacts to wildlife, vegetation, abiotic resources, and management resources (e.g., budget, personnel, and facilities) need to be fully considered in planning for any changes to the current use limit.

Conclusions

Findings from this study of vehicle-based visitors on the Denali Park Road suggest that either indirect use (through viewing) or use of the edges of wilderness constitute a perceived but authentic wilderness experience for many visitors. Many other examples of this type of wilderness experience may exist, such as scenic drivers on roads in most national parks and public lands or even participants in flightseeing over these areas. Many of these people may experience wilderness without setting foot in or on it. This suggests that wilderness experiences can be viewed on a continuum, ranging from the conventional (e.g., multiday backpacking) to the unconventional, which may still be evolving. Because of its growing prevalence, unconventional wilderness (or near-wilderness) experiences should be given serious consideration—and even managed for—in the operation of wilderness areas. This article represents a step toward better understanding the near-wilderness experience and the indicators of quality needed to define and manage such experiences.

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The Changing Geographies of Overseas Expeditions

BY PETE ALLISON and SIMON BEAMES

Introduction

Travel and overseas experiences, particularly those involving some form of outdoor education, is regarded by many young people, parents, university admissions officers, and employers as somehow beneficial to a young person's development. Expeditions have been used in the UK as an educational tool since 1932, when the Public Schools Exploring Society ran their first expedition to Finland (see figure 1). Recent literature specifically examining expeditions in the UK demonstrates an increasing interest in this quintessentially British phenomenon (Allison 2000, 2005; Allison and Pomeroy 2000; Simpson 2004).

Although gap years (i.e., a period of time when students take a break from formal education to travel, volunteer, or go abroad) and expeditions are slightly different (as the former often incorporates the latter, but not vice versa), no specific statistics are available on the numbers of people engaged in expeditions from the UK each year. Jones (2004), however, estimated that 250,000 to 350,000 Britons between

Figure 1—Commander Surgeon Murray Levick (center) and his team depart London Kings Cross for the 1932 expedition to Finland; this was the first expedition of the Public Schools Exploring Society (which changed its name in 1947 to the British Schools Exploring Society). Photo courtesy of BSES Archive, www.bses.org.uk.

Pete Allison. Photo by Steve Ayres.

Simon Beames. Photo by Nancy Fancott.

16 and 25 years old were taking a gap year annually. In 2008 Rowe reported that "the gap year market is valued at £2.2 billion in the UK and globally at £5 billion. It's one of the fastest growing travel sectors of the 21st century, and the prediction is for the global gap year market to grow to £11billion by 2010" (p. 47). The Geography Outdoors Fieldwork and Expeditions Section of the Royal Geographical Society (formerly Expedition Advisory Centre) list 134 organizations currently recruiting expedition members.

Thus, it appears reasonable to conclude that the popularity of expeditions and gap years is increasing. If further evidence is needed, then the development of British Standard 8848 (specification for the provision of visits, fieldwork, expeditions and adventurous activities outside the UK) in concert with the Learning Outside the Classroom quality badge scheme (underpinned by the Expedition Providers Association) convincingly indicate the growth in numbers of people traveling overseas on expeditions and gap years. Despite this long history and growing field of practice, expeditions have received relatively little attention by educational researchers in the UK and can be considered a significant gap in the current literature.

We address six areas of practice within the expeditions sector that are contentious and worthy of examination: volunteer work, cultural sensitivity and environmental responsibility, psychological considerations, regulating practice, conducting

research, and accessibility. We focus on the UK context in order to provide some depth and context to the discussion; however, other countries are currently facing similar issues that cannot all be detailed here.

Volunteer Work

Perhaps one of the most inflammatory issues in the current expedition climate surrounds expedition organizations sending young people to developing nations as unskilled laborers. For example, this could entail participants doing jobs such as teaching in primary schools, helping to take zoological surveys, or working in national parks on conservation projects, and is often under the remit of undertaking geographical research.

Many of these projects may not fall under the strict definition of an expedition, as they may not involve a journey; they may be based in the same place for several weeks at a time—despite being remote and self-sufficient. A number of organizations have elements of expeditions as part of their programs. For this reason, the issue of unskilled labor is highlighted.

Some critics note that Western young people going to developing nations and working may often be considered a form of neocolonialism (Simpson 2004). This is so, because there remains an imbalance of power in favor of the participants and the expedition provider. For example, the UK would not tolerate an 18-year-old Ghanaian boy coming to the southwest of England for six weeks and teaching in a primary school. This is in contrast to common instances where British youth without appropriate qualifications and with minimal experience find themselves in developing nations, playing prominent roles in the host village's formal education system. Although this kind of altruism may be laudable, it may be worth considering that this practice is only made possible by the wide gulf between the resources of the visitor and the host community. These practices of going overseas to learn through volunteering are sometimes referred to as service learning.

A number of papers have described how service learning is a branch of experiential education that is gaining increasing prominence in the Western world (Jacoby 1996; Jakubowski 2003; Warren and Loeffler 2000). Jacoby defines service learning as "activities that address human and community needs with structured opportunities intentionally designed to promote student learning and development" (1996, p. 5). Typically, service-learning programs involve living and working in a host community on projects that have been deemed important by the members of that community (Jacoby 1996; Kendall 1990).

Meaningful service-learning programs demand thorough examination, so they are not merely exercises in being exposed to life in a developing nation, but rather engage participants in the daily life of those living in the host country (Levison 1990). Similarly, service-learning projects ought to ensure that those being served are in control of the services being provided, those being served become more empowered as a result of the project, and those who serve are also learners (Jacoby 1996; Kendall 1990). Dickson (1988, p. 26) recommends educational programs for young people where the experience is based on "the adventure culminating in service, and the service itself an adventure."

In strict terms, service learning cannot occur without formal reflection (Jacoby 1996). Service without reflection would likely be regarded by many as volunteerism, as it is not connected to any structured set of learning objectives. We suggest that learning can happen without formal reflective activities (e.g., reviewing in a circle, journal writing). After all, people have learned through experience since the beginning of time. We also recognize that service learning experiences designed to be part of a larger educational program may need to have specific intended learning outcomes in order to justify their inclusion.

Another feature of service learning is reciprocity, where all parties "are learners and help determine what is to be learned. Both the server and those served teach, and both learn" (Kendall 1990, p. 22). Furthermore, it is imperative that the members of the host community identify the service tasks and then control the service provided (Jacoby 1996).

Expedition providers who are using service as part of their program can draw from the literature as a means of guiding their own practice. Crucially, expeditions involving volunteer work as a means of learning need to be thoroughly considered and not "added on" in some tokenistic manner. Well-conceptualized and well-implemented projects have considerable potential for learning.

Cultural Sensitivity and Environmental Responsibility

Along with the issues of health and safety highlighted in the 1990s, expeditions in the new millennium have brought new areas of concern. Critics have identified several potentially problematic aspects of some current practices on youth expeditions, including cultural sensitivity, the use of drugs, and the environmental costs associated with young people traveling outside of their home country (Allison and Higgins 2002).

First, they were particularly critical of expedition groups that did not show appropriate cultural sensitivity when traveling in developing nations (Allison and Higgins 2002). Participants who do not cover themselves suitably and wear short and sleeveless tops in Muslim countries are an obvious example.

Second, the outcomes of an expedition being so great that they warrant flying a group of 50 young people across the world was highlighted as being questionable (Allison and Higgins 2002). In a time when air travel is widely accepted as a contributor to global climate change, it seems surprising that so many operators and participants are convinced that they must visit lands far away, despite sometimes knowing little of their homeland. This point is contentious and has been responded to by the Young Explorers Trust who have convincingly argued that the benefits outweigh the costs. It seems likely that this debate will only gain more energy as issues of climate change continue to receive attention.

In response to some critiques of "universal" outdoor education (i.e., ignoring "place"), there is a movement toward expeditions that take place in the neighborhoods in which young people live and go to school. Outdoor Journeys is an example of a framework designed to allow students of all ages and abilities to generate questions about human history and local ecology (Outdoor Journeys 2009). Learning about the sociocultural and geophysical aspects of landscape involves students taking responsibility for planning their route, managing their primary needs (e.g., food and fluid intake, temperature regulation), and identifying hazards that might be encountered (see figure 2). The goal is for much of the responsibility to be shifted from the teacher to participants with the aim that students develop the tools necessary to undertake their own developmentally appropriate journeys—either as part of school or not.

We want to caution against overseas expeditions and local journeys being dichotomized and set against each other. Rather, we see them as being complementary elements of a rich education that all young people are entitled to and as mechanisms that enable people to engage in explorations of places near and far. Indeed, undertaking self-sufficient journeys early in life may encourage and support young people to seek more adventurous travel further afield as they get older and a spirit of inquiry and enthusiasm to learn about the world in which we live.

Psychological Considerations

Expeditions present a number of complex and varied challenges that inevitably evoke a range of psychological responses (see figure 3). This aspect of expeditions has received increasing attention, and the field of wilderness therapy has sought to address the learning from, and management of, these unavoidable psychological responses. Some responses are considered more positive and associated with learning (e.g., awe and inspiration, considering past experiences, learning how to interact with others), whereas others have more negative connotations (e.g., home sickness, psychosocial challenges, eating disorders). Furthermore, the responses to such experiences occur not only during expeditions, but also afterward, when participants return to their home community. It is helpful to consider three psychological areas.

The first area is learning in a safe (physical and emotional) environment. Taking people on expeditions is often motivated, to some extent, by trying to trigger some kind of psychological or emotional response to various aspects of the experience. For some this may be about developing themselves, understanding themselves and others,

Figure 2—Cyclists prepare for the next stage of their overland journey to Lhasa, Tibet, in preparation for their month-long ride to Everest base camp and onward to Kathmandu, Nepal. Such expeditions rely heavily on local people and services and involve numerous opportunities for interactions with local people and environmental considerations. Photo by Pete Allison.

Figure 3—Pete Allison (left), Nancy Pickup (middle), and Pete Gwatkin (right) depart for two weeks in the Staunings Alps in northeast Greenland. The intensity of such wilderness experiences involves a complexity of psychological challenges. Photo by Pete Gwatkin.

and as an opportunity to reflect on their lives, behaviors, and relationships—past, present, and future. For others, the expedition may be a time when reflection brings to the fore difficult issues that may have been previously suppressed, such as confidence, dysfunctional relationships, existential challenges, and sense of life direction. Clearly, leaders need to be appropriately prepared to deal with these and related issues. To this end, planning prior to an expedition, including reviewing applications and holding interviews, gaining medical information, writing clear marketing material, and conducting thorough training weekends are crucial in minimizing psychological difficulties that may arise.

Second, postexpedition responses are often difficult to gauge, and until relatively recently, had not been studied. The phenomenon can be understood as similar to the blues when returning from vacation or to a process of mourning (e.g., for the wilderness, for friends, for simplicity of expedition life). For many young people, going on an expedition for the first time can be life changing; it is often the first visit to a far-off place, to the wilderness, and of experiencing cultures very different from their own. As such, returning to everyday life (school, home, college, employment) is often rather awkward. Indeed, it is common for people to report difficulties sleeping inside, making decisions about what to eat, amazement at the number of people they meet, and missing the intimacy of the relationships experienced on the expedition. Allison (1999, 2000, 2005) studied expeditions and discovered this phenomenon to be common among the majority of participants. He comments: "It seems reasonable to conclude that some adjustment post-expedition might be expected for the majority of people. If there were no signs of some type of post-expedition adjustment then one could question if there had been any changes or examination of values during the expedition experience." (Allison 2005, p. 23)

The third psychological area that expedition leaders need to deal with concerns managing threats to the learning environment. When people experience some of the challenges outlined above, such as adjustment problems (to and from the expedition), illness/accidents, crises (emotional and otherwise), it is vital that leaders have the skills to recognize them, decide on a course of action, manage and remedy them, and keep them from occurring again—unless these problems are deemed to be desirable (rarely the case) (Berman and Davis-Berman 2002; Berman, Davis-Berman, and Gillen 1998; Kaplan and Talbot 1983).

Regulating Practice in the UK and Beyond

Most of the expeditions taking place in the UK that involve participants under the age of 18 years old are regulated by the Adventure Activities Licensing Service (AALS), which was developed following a kayaking tragedy in 1993 and the subsequent Young Persons Safety Act (1995). The word *most* is used deliberately, as expeditions that are in nontechnical terrain and have rapid access to roads may not be classified as licensable by AALS (AALS, n.d.). For example, an expedition in a

flat, forested area that is not far from a road may not require the provider to be licensed by AALS. Naturally, there are elements of duty of care and basic health and safety that need to be adhered to, but there is no need for the leader to have an outdoor qualification, such as the Mountain Leader award.

If the expedition involves traveling in more remote and demanding country (usually higher hills or on the water), then by law the activity is licensable under AALS. This means that AALS ensures that the activity provider has competent staff and is using properly maintained safety equipment. It is important to note a crucial exception to AALS regulations: expeditions for those under the age of 18 in Britain are not licensable under AALS, if the expedition leader is not being paid (e.g., a teacher leading an expedition with student participants) (AALS, n.d.). Once the expedition leaves the United Kingdom, things become less clear, as there is no statutory obligation for providers to operate at a given standard or for leaders to be qualified.

However, since 1972 the Young Explorers Trust (YET), which is a UK independent educational charity, has approved expeditions through its national evaluation system. This process was designed and developed as a means of supporting expedition organizers and leaders, as well as improving the quality of provision while giving expeditions "YET approved" status. YET also offers a small grant system to support expeditions they approve and which are in need of financial support. In 2008, the YET screening process incorporated British Standard 8848 to become the YET evaluation process.

British Standards 8848, which was published in 2007 (and reviewed and updated in 2009), is the closest the sector has come to regulating the practice of overseas ventures. British Standards 8848 is not limited to expeditions, but rather covers any kind of visit, trip, or fieldwork outside of the UK (British Standards 8848 2007). British Standards 8848's principal goal is to minimize injuries and illness during these ventures. The onus to follow the practices outlined in the standard is placed squarely on the "venture provider." The venture provider may use third-party employees

Figure 4—Dr. Sue McInnes and Chris Hodgson communicating using signs with local Ladakhi children in Ladakh, India. Photo by Pete Allison.

Figure 5—Richard Brown and Alex Skinner prepare to place ablation stakes in the glacier for a five-week monitoring project at Tasermiut Fjord, southwest Greenland. Photo by Jeff Brown.

Expeditions for young people involving science research, adventurous activities, and community work have gained remarkable popularity, yet elicited only a moderate amount of research.

(such as bus drivers or mountaineering instructors) as long as 8848's specifications are being followed. At the time of this writing, expedition companies are not required to adhere to 8848, but presumably gain credibility in the eyes of the public if they do.

All of the above outlined systems (AALS, YET, and BS 8848) are concerned with a systems approach and accrediting organizations rather than certifying individuals. This approach has been developed in response to an increasing number of overseas expeditions taking place in a wide range of environments with a broad spectrum of aims. In these varying circumstances, specifying individual leader certifications may be too complex to manage. As an example, compare the leadership skills that are needed for a small school group going on a two-week expedition from the UK to the Swiss Alps, with the skills needed for a three-month expedition for individuals from across the UK who are traveling to Kenya to kayak, undertake some service learning projects, and visit some game reserves. To address such differences the evaluation system for BS 8848, which is administered through the YET, offers a flexible approach that considers the specific expedition aims, location, and context in a descriptive rather than prescriptive manner. The approach encourages organizations and individuals to focus on managing the plethora of situations they may encounter on expeditions and not create cumbersome paperwork.

Conducting Expedition Research

Research can be undertaken on expeditions in two broad categories: first, research about the environment that is being visited (e.g., geology or tourism) (see figure 4), and second, participants and leaders being studied as a means of understanding the influences and processes occurring during and after an expedition (see figure 5). We focus on the second of these two categories. Undertaking empirical research on expeditions can present challenges beyond those normally associated with ethnographic methodologies. It is relatively straightforward to collect data after the experience—through questionnaires and interviews, for example. Whether one is collecting data as an expedition leader, a participant, or as a specialist researcher, there are pros and cons to actually being on an expedition and researching the other people on the expedition. There is no right solution, but rather the most appropriate, depending on the specific aims of the research, the questions being asked, and the epistemological preferences of the researcher(s). Therefore, although possible approaches are outlined in countless texts on research methodologies, the onus is on the researcher to choose a methodology that will most effectively answer the research question.

Actually being on the expedition that one is investigating is a privilege that must not be abused. Having such intimate and constant access to (normally) willing participants is unusual in the world of research (but common in anthropological studies). As Potter's (1998, p. 256) examination of the human dimensions of expeditions informs us: "During expeditions people live in close quarters 24 hours a day and generally lose their taken for granted privacies…options to check out from the group, sometimes even briefly, are greatly reduced and frequently impossible." This kind of access for the researcher can bring a familiarity—and consequent level of understanding—that offers ethnographic approaches (e.g., living with the expedition) much credibility.

As a researcher on the expedition, one cannot help but somehow influence people's interactions and behaviors. The degree to which one is participating in expedition life, as well as the overtness of one's data-collection methods, need to be carefully considered. For example, if one does not fully participate in expedition life (which is difficult to do in itself) but is sitting nearby, taking notes or asking people to complete questionnaires at regular intervals, then this process can impact on individuals in numerous ways. First, members may alter their behaviors if they are being watched, and second, they may answer questionnaires in order to present themselves in a certain way (e.g., with the aim of increasing their social "currency"). On the other hand, if one fully participates in expedition life (e.g., participant observation [Spradley 1980]) and is never seen to be formally interviewing anyone or taking notes, then one may gain a deeper understanding of what people think and do—which is probably what the researcher is most curious about. The concerns are that (a) the researchers are such a part of expedition life that they overly influence the group, and (b) they lose their ability to find a balanced perspective on the group and their role

within it. Again, there is no one solution, only the most appropriate for the circumstances and issues being explored by the researcher.

Another important aspect of collecting data on expeditions is the meteorological conditions. For example, pouring rain and a howling gale at the campsite may not be the most suitable conditions for conducting a recorded interview with a participant, as he or she may not be fully focused on the discussion. Certainly, it is worth considering the degree to which one's primary needs (e.g., food, shelter, warmth) are taken care of, and how this may affect the state of the interviewee. On the contrary, a researcher who is hoping to capture a deeper essence of "the moment" may choose to put microphones in front of participants' faces precisely during stressful or uncomfortable occasions. Some parts of an expedition may be so stressful that it would simply be unfeasible to pursue any kind of data collection. For some, descending a mountain ridge may be stressful, whereas for others, making a meal at camp may be challenging. Thus, the timing of such approaches to research will inevitably be better for some participants than others.

In these scenarios, it may be more useful to use field notes (Emerson, Fretz, and Shaw 1995). This might involve pulling out a small notebook once off the above-mentioned hypothetical ridge and trying to recount a particularly meaningful item that was said or observed. Informal conversations may also serve as rich data. For example, after the storm at sea has passed, there may be insightful comments offered by participants over a cup of tea in the galley.

Alternative approaches to those already outlined might involve asking those involved in expeditions to write about their experiences at a time at which they feel ready. Certainly, the advent of digital recorders for interviews, focus groups, and field notes has greatly facilitated researchers' ability to return from an expedition with many hours of data that takes up little space and is increasingly easy to analyze with modern qualitative data software.

In this section we have noted a few of the issues associated with data collection undertaken during expeditions. First, the little work that has been conducted in this area has been primarily empirical research. There are extensive opportunities for philosophical exploration of educational expeditions. Second, little, if any, research has focused on the learning of all involved in an expedition (such as leaders, assistant leaders, members of local communities visited, organizations) but has rather focused on the learning of the young people or participants involved. Third, there is growing pressure for outcome-focused research to measure the value of expeditions empirically; methodologically this is challenging and has met with little success (Allison and Pomeroy 2000, Thomas and Pring 2004).

Accessibility

There are inequalities between different people's access to resources in society. These resources might be things such as food, education, medical help, and property. Historically, the world of educational expeditions has been dominated by affluent white people (e.g., early expeditions run by the Public Schools Exploring Society). The period from the mid-1970s to the mid-1990s saw the British overseas youth expedition transform from a product exclusively for the socioeconomically privileged to one catering to a "much larger range of children of varying social backgrounds and academic abilities" (Grey 1984, p. 17). An example of these programs is Kennedy's (1984, 1992) overland expeditions to the Sahara Desert with inner-city youth from Liverpool. Current initiatives such as the Next Generation scheme offered by the British Schools Exploring Society are examples of promoting equality of opportunity.

In the UK today, although more opportunities exist for marginalized people to take part in expeditions, a fundamental discrepancy between the demographics of those who go on expeditions and those who do not appears to remain.

In Scotland, where students from the bottom 20% of the socioeconomic spectrum are seven times more likely to be excluded from school than those in the top 20% (Scottish Government, 2009), one can reasonably speculate that expedition opportunities for the former will come from a youth-at-risk program of some sort. Conversely, those within the top 20% wanting to go on an expedition will usually rely on their parents paying substantial amounts of money, or that money may often be raised with the help of their parents' social and business networks.

Beyond financial matters, it is quite likely that in social networks characterized by chronic low income, young people are not interested in going on an expedition, as there is little history of any family member or friend so doing. Equally, teenagers attending an independent school with a strong tradition of going on an expedition may feel stigmatized if they do not take a given expedition opportunity. It is conceivable to suggest that by choosing to participate in an expedition, they are merely "going with the flow" and following dominant social forces.

The implication for practitioners in all countries and cultures is that if the outcomes of an expedition are desirable for all young people—as a means to increase overall personal growth and

well-being—then surely these kinds of experiences ought to be available to all, irrespective of financial power, physical ability, sex, gender, religion, or ethnicity. Conclusions Expeditions in the UK have a long history that can be traced back to exploration for geographical purposes. In the last 20 years, expeditions for young people involving science research, adventurous activities, and community work have gained remarkable popularity, yet elicited only a moderate amount of research. More recently, in 2008, a "knowledge exchange" conference was funded by the Economic and Social Research Council and organized at The University of Edinburgh, as a means to discuss and share information about overseas expeditions. The conference was successful in bringing together expedition providers, policy makers, and academics in order to discuss a range of current issues concerning all parties.

We acknowledge many issues within the field of educational expeditions and focused on six that have emerged through our reconnaissance of related literature: volunteer work, cultural sensitivity and environmental responsibility, psychological considerations, regulating practice, conducting research, and accessibility. We believe that many of these issues are inevitable, but by opening discussion about them we can ensure that we make conscious decisions about our practices.

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Letter to the *IJW* Editor

A Way to Save the Siberian Tiger and Amur Leopard

The year of 2010 is the Year of the Tiger according to the Chinese lunar calendar. However, most tiger subspecies are critically endangered—especially the Siberian or Amur tiger (*Panthera tigris altaica*), the largest and one of the most beautiful cats in the world, which lives primarily in Russian Far East broadleaf and coniferous forests, and some exist in China and North Korea. According to the IUCN Red List (www.iucnredlist.org) and the Siberian Tiger Monitoring Program (www.wcs.org), there is a four-year trend of a decreasing number of tigers (from around 500 in 2005 to about 350 in 2009) despite existing national action plans and the tremendous efforts of governmental agencies and many nongovernmental national and international groups (WWF, Wildlife Conservation Society).

The main reasons for the tigers' decline are: increased poaching of tigers (supported by a high demand for tiger products in Russia and in traditional Asian medicines) and its prey species (i.e., deer, roe, boar) in the region; degradation of a suitable habitat because of increased economic activity (e.g., logging, construction of roads); forest fires; lack of political commitment to conservation; and inadequate law enforcement.

The obvious solution to change this dangerous trend would be in strong habitat protection, establishment of new protected areas, improvement in wildlife crime control, and adequate law enforcement. But, unfortunately, it is not sufficient because of some cultural aspects, such as the high level of corruption in management.

Therefore, the most effective way to save Siberian tiger from extinction in the wild might be the relocation of several Amur tigers to a suitable environment (with sufficient number of hoofed animals) in Canada or Alaska, because they have a similar biogeographic realm and habitat type (boreal forests), available territory, the capacity (e.g., institutional, scientific, technical, financial), and, most important, a will to protect wildlife from harmful human activity (e.g., poaching) in contrast to Russia and China, where economic interests dominate the environmental ones.

According to "*The Big Cats and their Fossil Relatives: an illustrated guide to their evolution and natural history*" by Turner A. and M. Anton (New York: Columbia University Press, 1997) and "Subspecies and the Conservation of *Panthera tigris*: Preserving Genetic Heterogeneity" by Sandra J. Herrington (in R.L. Tilson and U.S. Seal (eds.). *Tigers of the World*: The biology, biopolitics, management and conservation of an endangered species. Park Ridge, New Jersey: Noyes Publications, 1987), tigers used to be present in Alaska, within the past 100,000 years during the last glacial period.

Therefore, there is some ecological history that justifies the idea of managed relocation of Siberian tigers to Canada/Alaska. Furthermore, this approach is supported by Josh Donlan et al. (*Nature*, volume 436, August 18, 2005) in his article "Re-wilding North America."

Since it is very difficult to predict all of the consequences of such relocation for the local environment and the tigers, it is proposed to relocate only a few breeding pairs of tigers initially and then to make further decisions, depending on the monitoring results.

The same conservation strategy (i.e., managed relocation) can be applied to the magnificent Amur leopard (*Panthera pardus orientalis*), which is almost extinct in its natural habitat in the Russian Far East and northeast China (only less than 30 remain; www.iucnredlist.org) due to the threats mentioned above.

Thank you very much indeed for cooperation!

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Announcements

COMPILED BY GREG KROLL

Big Bend – Rio Bravo Concept Endorsed by Presidents

On May 19, 2010, a significant step was taken to advance the establishment of the first "peace park" between Mexico and the United States. Mexican President Felipe Calderón and U.S. President Barack Obama met in Washington, D.C., to reaffirm the strategic partnership between the United States and Mexico. Among the numerous issues addressed was the future of the transboundary region in the vicinity of Big Bend National Park. The presidents issued a joint statement at the close of their meeting that included the following:

> The Presidents noted the long history of bilateral cooperation in the conservation of natural and cultural resources. They recognized that Big Bend National Park and Rio Grande Wild and Scenic River in the United States and the Protected Areas of Maderas del Carmen, Cañon de Santa Elena, Ocampo, and Río Bravo del Norte in Mexico together comprise one of the largest and most significant ecological complexes in North America. In doing so, they recognized that increased cooperation in these protected areas would restrict development and enhance security in the region and within this fragile desert ecosystem. To preserve this region of extraordinary biological diversity, they expressed their support for the United States Department of Interior and the Secretariat of Environment and Natural Resources of the United Mexican States to work through appropriate national processes to recognize and designate Big Bend–Rio Bravo as a natural area of bi-national interest. The Presidents underscored their commitment to manage the region in a way that enhances security and protects these areas for wildlife preservation, ecosystem restoration, climate change adaptation, wildland fire management, and invasive species control.

The protection of the Big Bend–Rio Bravo region has been championed since the mid-1930s, with a major step being the creation of Big Bend National Park in 1944. President Franklin Roosevelt wrote a letter to Mexican president Manuel Avila Camacho proposing the idea of an international park. However, no action was taken at the time. Discussion regarding the conservation of the region was revived during the planning and convening of the 8th World Wilderness Congress in Alaska in 2005. Planners of the 9th World Wilderness Congress (WILD9) in Mèrida, Mexico (November 2009), fast-tracked this project, ultimately leading to the presidents' bilateral announcement. (Sources: www.wild.org; www.whitehouse.gov/the-press-office-joint-statement-president-barack-obama-and-president-felipe-calder-n)

New Report Published on the Status of Wildlands in Europe

The Wildland Research Institute of the University of Leeds, Scotland, has published *A Review of Status and Conservation of Wild Land in Europe*. According to the authors, the report sets out to undertake the first fully comprehensive review of the status of European wildlands, while simultaneously analyzing the meaning of wildlands in Scotland and quantifying their history in that country. The review of the European system of protected areas provides particular focus on the International Union for Conservation of Nature wildland classifications. Appendices include a listing of all protected areas in Europe together with protected area legislation. The report also identifies key areas of consideration for developing future policy and action regarding wildlands in Scotland. (Source: www.wildlandresearch.org).

President Obama Proclaims National Wilderness Month

President Barack Obama proclaimed September 2010 as National Wilderness Month. In the proclamation dated August 31, 2010, the president stated, "We renew our pledge to build upon the legacy of our forebears. Together,

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we must ensure that future generations can experience the tranquility and grandeur of America's natural places. As we resolve to meet this responsibility, let us also reflect on the ways in which our lives have been enriched by the gift of the American wilderness.… I invite all Americans to visit and enjoy our wilderness areas, to learn about their vast history, and to aid in the protection of our precious national treasures." (Source: Office of the White House Press Secretary, August 31, 2010)

U.S. Forest Service Issues Interim Filming Guidelines

The U.S. Forest Service has issued new temporary guidelines addressing commercial filming in the 439 wilderness areas it manages. Although the 1964 Wilderness Act prohibits most commercial enterprise in designated wilderness, and the Forest Service previously issued filming permits only when the project contributed "to the purposes for which the wilderness area was established," under the new criteria, special use permits may be issued if filming has a "primary objective" of spreading information about the enjoyment of wilderness or its ecological, geological, scientific, educational, scenic or historical values; helps preserve the wilderness character; doesn't advertise products or services; and if there aren't suitable filming sites outside of wilderness.

The issue most recently arose after Idaho Public Television was allowed to film a segment of Outdoor Idaho in the Frank Church–River of No Return Wilderness, although a similar Oregon Public Broadcasting show has regularly received permission to film in that state's wilderness areas. In the Idaho case, Student Conservation Association trail crew members were filmed doing trail work. Although the film crew was originally barred from filming in the Frank Church wilderness, Idaho Governor "Butch" Otter and U.S. Representative Mike Simpson, an Idaho Republican, subsequently pressured the Forest Service into reversing its decision.

Erin O'Connor, a regional Forest Service spokeswoman in Ogden, Utah, said the agency granted permission to the Idaho Public Television crew before the new guidelines were drafted and after receiving assurance from the noncommercial station that it wouldn't sell videos of the show to generate income. However, station manager Peter Morrill said he has every intention of selling videos to cover production costs. He added that he has already been granted permission from the Forest Service to film another Outdoor Idaho segment, about backcountry pilots, in Idaho's Selway–Bitterroot Wilderness.

The temporary filming guidelines (FSH 2709.11, *Special Uses Handbook*) will expire December 3, 2011, giving the agency 18 months to develop permanent filming rules. (Source: *Idaho Statesman*, June 7, 2010)

National Park Goes Underwater

"This is the very first place on the planet where a country is protecting an ecosystem stretching 2,000 feet [600 m] below water to mountains 4,000 feet [1,200 m] above the ocean," according to Environment Minister Jim Prentice. Canada's new Gwaii Haanas National Marine Conservation Area Reserve extends 6 miles (10 km) offshore from the existing Gwaii Haanas National Park Reserve on the southern coast of the Queen Charlotte Islands. The new seabed conservation area protects a 1,350-square-mile (3,500 sq km) section of the Hecate Strait and Queen Charlotte Shelf natural marine regions. About 3,500 species, including some designated as at-risk, populate the waters. Traditional fishing and recreational use will be allowed, but the seafloor, including archaeologically significant shipwrecks, will be afforded the same level of protection as a national park. Offshore oil drilling is permanently prohibited.

The unprecedented move is the culmination of a regional environmental protection fight that began 25 years ago when a blockade by the Haida Nation shut down the logging of old-growth forests on South Moresby, which ended with 72 protestors in custody. The Haida Nation does not accept protection distinctions between land and sea. The Haidas will be comanagers of the conservation zone with Parks Canada. (Source: *National Post* [Canada], June 7, 2010)

Miner's Ridge Added to Glacier Peak Wilderness

Forty-four years after Kennecott Copper Corporation proposed a large open-pit mine within Washington State's Glacier Peak Wilderness (established in 1964), Miner's Ridge, a former 372-acre (150 ha) inholding, has been added to the Mount Baker–Snoqualmie National Forest's wilderness. The Chelan County Public Utility District (PUD), the property's most recent owner, ceded the acreage to the Forest Service in exchange for 1.8 acres (.75 ha) at Lyman Lake.

In 1966, Kennecott proposed the copper mine and a 15-mile (24 km) road leading to it. Environmentalists described the mine as "an open pit visible from the moon," and U.S. Supreme Court Justice William O. Douglas famously led a protest hike up the Suiattle River trail to the site. Eventually, copper prices declined, the Forest Service proposed severe restrictions on the project, and the company abandoned the plan. In 1986, the

PUD bought Miner's Ridge from Kennecott for a nominal fee to use the site to measure snowpack, but eventually came to realize that Lyman Lake better served its purposes. The PUD approached the Forest Service about the exchange and it was formally approved in April 2010. (Source: *The Daily Herald* [Everett, Washington], May 7, 2010)

Volunteers Help Restore Lands Damaged by Border Fence

In Arizona, the federal government has built 124 miles (200 km) of fences and 183 miles (300 km) of vehicle barriers along the state's border with Mexico. Along the entire 2,000-mile (3,200 km) U.S.–Mexico border, 646 miles (1,040 km) of fences, walls, and vehicle barriers have been constructed. At Coronado National Memorial, Arizona, 100 volunteers recently planted 1,300 young agaves where 4,000 were torn out two years ago to build the fence. Agaves are the principal food source for the endangered lesser long-nosed bat, 20,000 of which live in a nearby abandoned gold mine. The National Park Service financed the project.

According to Jenny Burke, a Homeland Security spokeswoman, Congress has appropriated $50 million to do borderlands restoration work. At Organ Pipe Cactus National Monument, Arizona, park officials will try to restore 84 acres (34 ha) damaged by fence construction by planting palo verde, creosote, ironwood, and other desert vegetation. Mark Sturm, the monument's resources management chief, said they will also transplant saguaros, organ pipe cacti, and other plants that were moved from the fence area to nurseries at the time the land was cleared. In addition, Organ Pipe authorities plan to install temporary plastic or steel tanks to provide water to pronghorns to compensate for the border fence's having severed the animals' north-south migration route. The Arizona Game and Fish Department found 68 pronghorn in the monument during a 2008 survey; the number is probably larger today because fawns have been born and some adults were released from captivity since then. (Source: *Arizona Daily Star*, July 27, 2010)

Polls Reveal a Decline in Concern for the Environment

Recent polls have revealed significant changes in the public's attitude toward nature. Gallup's annual update on American feelings toward the environment found that "Americans are now less worried about a series of environmental problems than at any time in the past 20 years." With six out of eight specific environmental problems, concern is the lowest that Gallup has ever measured. Americans worry most about drinking-water pollution and least about global warming. In fact, according to Gallup, citizens are less convinced that global warming's "effects are already happening, and [are] more likely to believe that scientists themselves are uncertain about its occurrence."

Another major survey, conducted by Yale and George Mason Universities entitled the "Climate Change Generation," discovered that Americans between the ages of 18 and 34 were split on the issue, and that they are relatively disengaged when compared to older Americans. The majority of individuals both under 23 and 23 to 43 years of age said they are either not very or not at all worried about global warming.

According to Gallup and the climate survey authors, two factors are affecting national attitudes: (1) the sour economy has elevated jobs, health care, and economic needs to a higher priority; and (2) there's a general belief that things have improved on the environmental front in the last 20 years. A third possibility was identified: people simply care less about the environment. A report published in the *Proceedings of the National Academy of Sciences* in February, 2008 (vol. 105, no. 7) by Oliver Pergams and Patricia Zaradic entitled "Evidence for a Fundamental and Pervasive Shift Away from Nature-based Recreation" addresses this issue. The authors found that there has been a fundamental and general national and international shift away from people's participation in nature recreation over the past 20 years. They conclude that this trend has enormous implications since research shows that environmentally responsible behavior results from direct contact with nature. (Source: www.newwest.net, April 9, 2010)

Other researchers (Cordell, Betz and Green, *Nature-based Outdoor Recreation Trends and Wilderness*, *IJW* 14(2): 7–9, 13) have challenged Pergams and Zaradic's data on trends by claiming that based on their long-term research data there is not a fundamental nor a pervasive downward trend as reported by Pergams and Zaradic. They further question Pergams and Zaradic's conclusion that interest in nature-based recreation will decline.

Tourism Is a Purpose of New South Wales National Parks

The government of New South Wales, Australia's most populous state, has proposed to "open up" national parks to tourism. The National Parks and Wildlife Amendment changes the emphasis of national parks and the National Parks and Wildlife Service

from nature conservation to providers of tourist development and accommodation, and facilitates new commercial development. The Blue Mountains City Council and local conservationists have come out in strong opposition to the plan. Legal advice obtained by the Colong Foundation for Wilderness says the proposed law would permit exclusive rights for a broad range of commercial uses of national parks, including "tourist resorts, convention centres, shopping centres, fast food outlets, sporting facilities and fun parks, at the discretion of the minister." The legislation would also allow tourism in its many forms to be formally recognized as a purpose of national parks, in contrast to the long-held principle that national parks were only for nature conservation and visitation. (Source: *Blue Mountain Gazette* [Australia], June 1, 2010)

Book Reviews

Wilderness

By Vance Martin and Patricio Robles Gil. 2009. Sierra Madre Press. 132 pages. $29.00 (cloth).

Vance Martin and Patricio Robles Gil have worked together on a number of books, including *Wilderness: Earth's Last Wild Places* (2002) and *Wilderness, Wildlands, and People: A Partnership for the Planet* (2008). Both are longstanding wilderness advocates, with Martin being president of The Wild Foundation, cochair of the IUCN Wilderness Task Force, and editor of the *IJW*, and Gil being the creator of two of Mexico's most successful conservation organizations, Agrupacion Sierra Madre and Unidos para la Conservacion and a globally recognized photographer, including recently being named the Photographer of the Year by the North American Nature Photography Association.

Wilderness is a small book (6 inches long and wide), in which Martin provides both a personal and professional discussion of what he feels wilderness is, why it is important, how it benefits humanity, and how we should continue to advocate for its protection. This text shares the spotlight with 129 photographs from Gil. Martin suggests wilderness is a combination of the biophysical and emotional. Wilderness is outside of us, and wildness is part of us due to our evolutionary history. Wilderness comprises (1) biological intactness, (2) absence of permanent roads and other persistent technology, (3) rare and unusual natural features and qualities, (4) human culture, and (5) provides solitude (the most important criterion, according to Martin).

Our unthinking attitude toward technology also comes into question, with Martin suggesting that the "self-absorption, arrogance, and misplaced affections that characterize technological hubris are certainly a terminal condition for wild nature, and soon may be for us unless we change" (p. 74). Our disassociation from wilderness means "we are psychologically adrift with no sense of natural proportion, and seemingly unaware that all living beings on earth must ultimately answer to environmental limits. It is as much a crisis of spirit as it is a looming physical disaster" (p. 95).

The 10 principles of "Wild Work" (i.e., advocacy) are also outlined in the book. The first six Martin considers standard negotiating tactics: (1) know thy enemy, (2) think independently, (3) listen, (4) determine what they need, (5) find common ground, and (6) communicate effectively. Martin also suggests that advocates need to (7) trust their instincts, intuition, and sense of timing; (8) keep a positive attitude; (9) keep your perspective above the fray; and (10) be involved in action: "By our actions we shall be known" (p. 114). This last quote could be this tireless wilderness advocate's personal mantra. Finally, Martin comes down on the side of wilderness with regards to the current debate over the validity of community-based conservation, but acknowledges that protection is not the long-term answer: creating better relationships between wilderness and people is.

This small book is not groundbreaking, but it is passionate,

inspirational, and reverberates with two lifetimes of wilderness advocacy.

Reviewed by JOHN SHULTIS, faculty member at the University of Northern British Columbia, Prince George, BC, Canada, and *IJW* book editor; email: shultis@unbc.ca.

J. B. Harkin: Father of Canada's National Parks

By E. J. (Ted) Hart. 2010. University of Alberta Press. 570 pages. $34.95 CAD (paperback).

In 1911, the Dominion Forest Reserves and Parks Act was passed in Canada, which created the Dominion Parks Branch (later Parks Canada), the first national park agency in the world. James Bernard (J. B.) Harkin, a 36-year-old ex-political reporter who had spent 10 years working in the Ministry of the Interior as a secretary to the minister, took on the role of director of the new branch, a role he would serve for the first 25 years of its existence.

Perhaps reflecting Canadians' unwillingness to crow about their own successes, the work of J. B. Harkin has never been studied in detail. Ted Hart's book on Harking is thus a very valuable addition to the relatively limited research on the history of Canadian national parks.

The impact of the U.S. experience with national parks on Harkin's thinking is evident, though not a focus of the book. This influence related to many major issues shared by both park agencies, including the dual mandate, turf wars with other agencies and departments, the primacy of revenue generation through "selling scenery" argument for politicians to fund the parks agencies, stopping industrial development in national parks, and predator control in wildlife management.

Hart notes that Harkin was not a visionary like John Muir, but an "art of the possible" bureaucrat who scrambled to create park policies and principles from a relative void (other than the aforementioned U.S. experiences). Harkin worked hard to convince diffident politicians that parks would contribute to the public purse by generating revenue from foreign tourists. He slowly built up a viable park system and agency despite the effects of the Depression, World War I, and public and political apathy toward national parks, exhibiting "a keen ability to seek out opinions and information from his many peers and a variety of other sources and synthesize it into a coherent policy before selling it to his superiors and politicians" (p. 181). Indeed, his first annual report in 1912 was a remarkably well-argued (if not overly original) call for the conservation of nature through the national parks.

Hart does not cover the personal life of J. B. Harkin or delve too deeply into the wider societal forces influencing Harkin's thinking, but provides an excellent analysis of the challenges that Harkin faced from 1911 to 1936, and his responses to these many challenges. Harkin's stubborn drive to maintain the inviolate nature of national parks from commercial development such as mining or hydroelectric development—a focus of the book—was both his greatest challenge and most important victory (with the passing of the National Parks Act in 1930). Although rarely entering the wilderness himself, Harkin's passionate belief that nature provided critical social and individual benefits and that parks were the best opportunity to protect the wilderness from industrial activities had a major impact in shaping a world-class national park system and agency in Canada.

Reviewed by JOHN SHULTIS, faculty member at the University of Northern British Columbia, Prince George, BC, Canada, and *IJW* book editor; email: shultis@unbc.ca.

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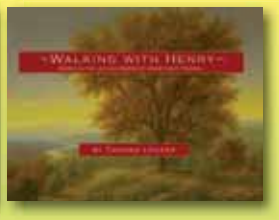

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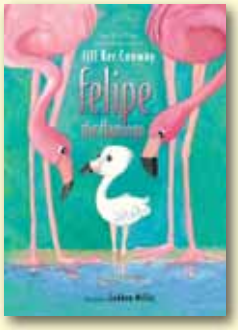

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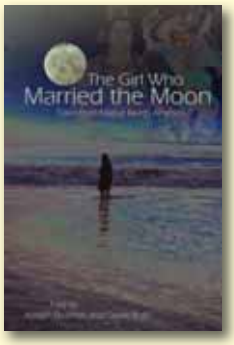

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