INTERNATIONAL

Journal of Wilderness

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The large FRONT COVER photo shows yuccas at 1,636 m. elevation in Sierra Peña Nevada, Nuevo Leon, Mexico. INSERT PHOTO is of a delicate but pointy cactus in flower, Sierra Madre Oriental, San Luis Potosi, Mexico. Both photos © 2001 courtesy of Alan Watson/Forest Light.

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

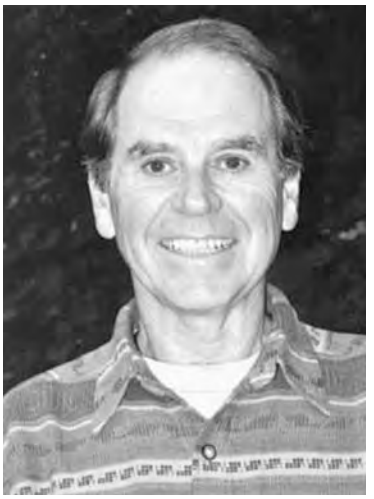
Wilderness and *IJW* as the Century Begins

BY JOHN C. HENDEE

This issue of the *IJW* (vol. 8, no. 1) begins our eighth year of publication. When the *IJW* began in 1995, there was excitement and optimism for the role of wilderness in the expanding environmental movement worldwide. Many important wilderness events followed.

The past seven years have seen important growth in wilderness systems in the United States and around the world. Two more World Wilderness Congresses (WWCs) have been held—the 6th WWC in 1998 held in Bangalore, India, and the 7th WWC in 2001 held in Port Elizabeth, South Africa, substantially contributing to the wilderness cultural and technical literature with their proceedings, and expanding the relevance of wilderness internationally. In the United States, the Arthur Carhart Wilderness Training Center has trained hundreds of federal resource managers in wilderness stewardship nationwide, and they now are assisting other countries. The Aldo Leopold Wilderness Research Institute provides leadership for wilderness research nationwide and internationally, and it sponsored the largest ever wilderness science conference in 1999, generating a five-volume proceedings. The University of Montana Wilderness Institute established an online network for easy access to wilderness information for managers, scientists, citizens and students (www.wilderness.net). Wilderness advocates, led by The Wilderness Society (but including many local and regional groups) have strengthened the sophistication and information base of their proposals, making wilderness initiatives all the more compelling. Wilderness experience programs aimed at personal growth and inspiration, led by organizations such as Outward Bound, the National Outdoor Leadership School, and Wilderness Inquiry, have created a movement now involving hundreds of programs worldwide for youth and adults.

Today wilderness has a stronger presence in natural resource conservation than ever before. This progress and promise is reflected in the preceding seven years of the *IJW*. This issue demonstrates the diverse and international wilderness interests that have evolved. Vance Martin, USA, and Andrew Muir, South Africa, report on the November 2001 7th WWC. Perry Brown, leader of a U.S. wilderness stewardship evaluation committee presents a summary report of their review and recommendations. Tina Ekker of Wilderness Watch, USA, describes how citizens can—and must—get involved in wilderness stewardship to support and critique agency efforts. David Cole, eminent wilderness scientist, USA, provides perspective on managing density of wilderness recreation use.



Article author John C. Hendee.

International articles report on restoring wilderness on the Isle of Rum (Brian Wood); wilderness attribute mapping in the United Kingdom (Steve Carver, Andy Evans, and Steffen Fritz); global wilderness management training in Africa (Malcolm Draper and Alan Watson); and wilderness and tourism on the Zambezi River (Sally Wynn). Mark Evans gives his "surgeon's vision" of one year in the Arctic wilderness, and Kevin Proescholdt reports on what 75 years of protection can do (in the Boundary Waters Wilderness of Northern Minnesota).

Enjoy this issue, and stay involved in the wilderness movement with the *IJW*.

JOHN C. HENDEE is IJW editor-in-chief, Professor and Director of the University of Idaho Wilderness Research Center. E-mail: hendeejo@uidaho.edu.

SOUL OF THE WILDERNESS

The 7th World Wilderness Congress

Wilderness and Human Communities

BY VANCE G. MARTIN and ANDREW MUIR

The World Wilderness Congress (WWC) returned to its African roots in November 2001 when it met in Port Elizabeth, South Africa. The 7th WWC—after a planning period beset with political, financial, timing, and terrorism-related issues—was arguably the most productive of the WWC series, which began in Africa in 1977. And, by unanimous agreement, both the debate and the after-hours sessions were filled with an enlivening spirit that overpowered the issues and obstacles, making the road to practical accomplishments both productive, enjoyable, and full of hope and anticipation.

The WWC has convened seven times—South Africa (Johannesburg), 1977; Australia, 1980; Scotland, 1983; United States, 1987; Norway, 1993; India, 1998; South Africa (Port Elizabeth), 2001—and is the longest-running international public environmental forum. A project of The WILD Foundation, each WWC is hosted by a local nongovernmental organization (NGO) in partnership with WILD and a number of relevant host-country organizations, agencies, and companies. The WWC has no central, ongoing budget and must raise its funds each time from local, regional, and international sources. It meets when timing, issues, needs, and resources converge.

Article co-authors (left to right) Andrew Muir and Vance G. Martin.

In the recognition that the world is only diversifying more rapidly and in all ways, an important principle in planning and implementing the WWC is "focused diversity." Despite the difficulties inherent in such an approach, solutions are ultimately more effective and long-lasting when crafted by diverse but focused input—including technical, cultural, political, financial, social, and spiritual—and through a process that utilizes different methods of thinking, assimilation, and living. Therefore, the WWC is multidisciplinary and involves a range of people and perspectives—from ministers of state to philosophers, scientists to game rangers, businesspeople to artists—representing government, education, the private sector, and NGOs.

In planning the 7th WWC and aiming for quality objectives and accomplishments, an even higher priority than usual was placed on professional, racial, and gender diversity. This began with the membership of the Executive Committee itself, which was charged with overseeing all aspects of the 7th WWC, and included senior figures in politics, finance, business, and culture from government, private, and NGO sectors—both men and women, the majority being nonwhite. The body of 7th WWC delegates—700

people from 45 nations—included almost 250 nonwhite field professionals, community activists, and others on full scholarship provided by the 7th WWC. Also among the delegates were 25 to 30 members of South Africa's National Parliament from the Environment Portfolio Committee—a tremendous symbol of South Africa political interest in the 7th WWC.

The program also reflected significant professional and racial diversity. The content was presented by a majority of either nonwhite professionals, or by multiracial partnerships. Female presenters were encouraged and included as often as possible. Further, the structure of the program was designed to use both right and left brain functions, the heart as well as the head, by interspersing cultural elements, outdoor social functions, and field trips with the normal plenary, working sessions, and panels. In addition, the service aspects of the 7th WWC included, and directed benefits to, many local communities in the local area and in South Africa as a whole—such as the making of delegate badges, briefcases made of native materials, special taxi-driver training, daily cultural programs, community workshops, craft production and sales, and more.

As much as it emphasizes a holistic approach to creating conservation solutions, the WWC is also action-oriented and strives to produce practical results through collaboration and cooperation. Some notable results include:

- **Immediate Funding—**The Global Environmental Facility of the World Bank announced grants of $1 million each to the Baviaanskloof Wilderness Area in the Eastern Cape Province of South Africa, and to Angola to assist the Kissama Foundation's work to rehabilitate Angola's Quiçama National Park.

Murphy Morobe, (Chairman, SA National Parks), Chairman of the 7th WCC. Photo © The WILD Foundation.

- **Private Sector Wilderness—** Shamwari, a private game reserve outside Port Elizabeth, announced the first private sector wilderness in Africa, and a unique and creative legal structure for its designation. The reserve's lawyers worked with owner Adrian Gardiner to draft legal title restrictions to declare and protect over 3,000 hectares (7,500 acres)—or 16% of Shamwari—as wilderness, placed under legal servitude to the Wilderness Foundation of South Africa, founded by Ian Player and headed by Andrew Muir. Within 24 hours, other private landowners at the WWC announced that they would do the same, including two from Namibia, Carl Hilker and Albie Brueckner.

Credo Mutwa, Zulu prophet and healer, with Gwen Mhlangu and other SA Parliamentarians. Photo © The WILD Foundation.

Dr. Wangari Maathai (Kenya) and Edward Posey, (Gaia Foundation, UK). Photo © The WILD Foundation.

- **Wilderness Legislation—**Wilderness conservation efforts in Africa received a boost through an announcement at the WWC by the government of Namibia that it was in the process of drafting national wilderness legislation to cover both public parks and private conservation areas. There are also plans for a new wilderness national park in southwestern Namibia, as well as a three-country transfrontier park (with wilderness zones) stretching from the Northern Cape Province of South Africa, all the way through Namibia, into southern Angola.

Linda Tucker, author, discusses a session with Patience Koloko, (President, SA Traditional Healers Association). Photo © The WILD Foundation.

- **New Fundraising Initiatives—**Additional funding for wilderness will come through three new initiatives: My Acre of Africa, the African Protected Areas Initiative, and the Ian Player Wilderness Experience Scholarship Fund. My Acre of Africa is an Internet-based public fundraising strategy for southern African parks, protected areas, and local communities. (Details are available at www.myacreofafrica.com.) The African Protected Areas Initiative is a strategy to be developed and launched at the 5th World Parks Congress in Durban in June 2003 with numerous international agencies, funders, and NGOs to address the need for additional funding for all African protected areas. Finally, a new scholarship program to support members of economically and socially disadvantaged communities in experiencing wilderness areas—the Ian Player Scholarship Fund—was launched and initially funded during the 7th WWC.

- **Conservation Education—**Private sector support for environmental education came from Johnnic Holdings Ltd, South Africa's media giant and one of the country's largest black-controlled companies. Chairman Cyril Ramaphosa announced that conservation education was now one of only two top priorities in his group's corporate social and community outreach program.

- **Tropical Forests—**Potential United States legislation to help protect tropical forests was also announced at the WWC. Congressman

E. Clay Shaw announced the imminent introduction into the U.S. Congress of a bill addressing the need to stem the tide of unsustainable logging of tropical forests, using a number of different financial mechanisms such as debt swaps and the buyback of logging rights.

- **Wilderness Training—**A group of 20 wildlands managers and wardens from 13 countries graduated from a special training course on wilderness management, which was held in the week before the WWC (see article by Draper and Watson in this issue). This course was accredited and advised by the University of Natal, led by the Wilderness Action Group, and funded by the Sierra Club, WILD, and others, with participation by the Aldo Leopold Wilderness Research Institute, University of Montana, and U.S. Forest Service.

- **Resolutions and The Port Elizabeth Accord—**Over 30 resolutions, targeted at specific wilderness and environmental issues, were adopted by the 7th WWC for use in local, national, and international campaigns, addressing issues from Asia to Africa to the Americas. Embracing these specific concerns and more, The Port Elizabeth Accord (see sidebar) reconfirmed the importance, urgency, and possibilities for constructive action in all the issues presented and discussed at the 7th WWC.

In addition to the above practical accomplishments, The WILD Foundation presented its most recent Green Leaf Award. Awarded twice previously (to the People's Republic of China, and to the people of the Tamyr Peninsula, Russia), the Green Leaf Award goes to

Port Elizabeth Accord
of the
7th World Wilderness Congress
8 NOVEMBER 2001

At this time in our history, when the shadow of uncertainty pervades our thoughts and the presence of peril dictates our actions, all of our aspirations and initiatives must by necessity be positive, determined, visionary, collaborative.

It is with this realization that 700 delegates from 42 nations convened in Port Elizabeth, South Africa, for the 7th World Wilderness Congress.

During the course of a week of presentations, consultations, debates, and decisions by a diverse array of people, cultures, professions, and perspectives, covering both challenges and solutions, some certainties were confirmed, namely that:

- Wilderness, wildlands, and wildlife—on land, in the sea, and in the air—are a resource of fundamental, irreplaceable value and substance in all human endeavor; and

- Wild nature is essentially more than a resource, rather being The Source of a particular gift of strength, sanity, and inspiration in a modern and fragmented world; and further,

- Wilderness—all of its many services and values—undeniably informs and supports human communities and is an essential element of the spirit and practicality of the 21st century.

HOWEVER, our convention recognized the inescapable truth: where vast wilderness once surrounded and supported humankind, pervading and persisting with ease, it is now small and dispersed islands in a sea of humanity, retreating daily while assaulted by human numbers and greed, and cloaked by an atmosphere which is not of its own making, nor life-giving.

AS A RESULT, our convention reconfirmed the basic principles of international collaboration, cross-cultural cooperation, human equity, and freedom, combined with direct personal responsibility for the present and future well-being of wilderness, wildlands, and wildlife, on land, in the sea, and in the air.

THEREFORE, in light of this reality and these principles, we are RESOLVED to act decisively, with intention, power, and determination, on the agreements, resolutions, and actions of this 7th World Wilderness Congress.

Panel members Dr. Iain Douglas-Hamilton (Save the Elephants); and Laurie Marker and Matti Nghikembua (Cheetah Conservation Fund). Photo © The WILD Foundation.

an individual, group, or country for exemplary action on behalf of wilderness, wildlife, and environmental protection. The 7th WWC Green Leaf Award winner was "The people of Angola and the Fundacao Quicama, for vision and perseverance on behalf of wilderness and wildlife in Angola," and was presented at the WWC to Angola's minister of fisheries and environment, Ms. Fatima Jardim, represented by Angola's ambassador, Sr. Rodriquez.

Dr. Michael Soule, conservation biologist (The Wildlands Project). Photo © The WILD Foundation.

Port Elizabeth (Eastern Cape, South Africa) was an excellent venue and host. The first two days of the 7th WWC—The World Wilderness Summit—were held in the beautifully restored Feather Market Hall (a 19th-century packing and auction house for ostrich feathers!). After a day of field trips to local natural and cultural areas, the final four days—the Wilderness Working Sessions—convened at the new Board Walk Conference Center, facing the beach. In addition to plenary sessions focused on international and regional wilderness issues, the afternoon technical sessions and workshops included:

- Science and Stewardship to Protect and Sustain Wilderness Values (Dr. Alan Watson, Aldo Leopold Wilderness Research Institute)
- Wilderness and Jurisprudence (The Gaia Foundation)
- The Role of Legislators in Protecting Wilderness Areas (GLOBE, Southern Africa)
- Wilderness of the Mind and Spirit (Bill Petrie)
- Wilderness and Public Involvement—The Sierra Club Model (Bruce Hamilton)
- Sustainable Tourism—Africa (Michael Sweatman)
- The Open Council (Marilyn Riley, Dr. John Hendee, and Patrick Marsh) provided a daily space for delegate feedback and sharing of personal and professional insights and experiences from their wilderness work.

The illustrated and published proceedings of the plenary presentations will be available late in 2002 at www.fulcrum-books.com (where one can currently also purchase the proceedings of the 3rd, 4th, 5th, and 6th WWC). The Aldo Leopold Wilderness Research Institute will also publish the proceedings of their technical session, Science and Stewardship to Protect and Sustain Wilderness Values.

Wilderness and Human Communities: The 7th WWC demonstrated that not only is this topic important, but the will and expertise are available and eager to be applied in helping wilderness and human communities work together. Cooperation and collaboration are the catalytic factors. Let's get on with it!

"Wilderness has never been as important as it is today. But it is not as important today as it will be tomorrow."

—Vance Martin, President, The WILD Foundation

VANCE MARTIN is president of The WILD Foundation and has been the director (International) of the WWC since 1983; he is the executive editor for international matters in the *IJW* and can be reached by e-mail at vance@wild.org.
ANDREW MUIR, executive director of the WILD Foundation (South Africa), was executive director of the 7th WWC.

Policy, Perspective, Culture and Action—the 7th WWC

◀ Dr. Vandana Shiva.

Philemon Malima (dark suit, ▶ Minister of Environment and Tourism, Namibia) and some of his staff.

◀ The Soweto String Quartet.

Dr. Ian Player, ▶ founder of the WWC.

◀ Dancers look at pictures taken of them during their performance on Charlotte Baron's digital camera.

◀ Not all of the cultural entertainment was of African origin.

◀ Members of several south African dance troups take a break between performances.

Dr. Walter Lusigi, ▶ Global Environmental Facility of the World Bank.

A Summary of the Report

Ensuring the Stewardship of the National Wilderness Preservation System

BY PERRY J. BROWN

The passage of the Wilderness Act (TWA) (PL 88-577) in 1964 created a National Wilderness Preservation System (NWPS) and signaled a commitment to protect in perpetuity a portion of our landscape and its related human heritage. However, this requires active stewardship in the face of population growth and environmental change. Active stewardship for a system of wildernesses requires that the four federal agencies—U.S.D.A. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, National Park Service—cooperate and collaborate, and that they do the best they can for the land within the human, knowledge, technological, and financial resources available to them.

Article author Perry J. Brown.

In recognizing that the stewardship of wilderness could be enhanced in the coming century, the wilderness coordinators in the four federal wilderness agencies asked the Pinchot Institute for Conservation in late 1999 to convene a diverse group of people outside of government to examine our stewardship of wilderness over the previous 35 years and to recommend how we might be better stewards in the 21st century. The final report by the Wilderness Stewardship Panel of the Pinchot Institute for Conservation outlined the issues of stewarding the NWPS, a system that is truly American in origin, but that has caught the attention of many people around the world. This report was released in September 2001, 37 years after the passage of TWA. We find that the NWPS has grown from 10 million acres in 54 units to nearly 105 million acres in over 600 units. We find that the NWPS is more important to the American people than ever before.

The report identified the need to forge an integrated and collaborative system across the four wilderness management agencies as its fundamental conclusion. Given the importance of wilderness as part of a land use spectrum, its historical, scientific, recreational, philosophical, and spiritual significance, and the lack of a true system of wilderness, the report offered an agenda and specific recommendations to the secretaries of agriculture and the interior, those officials designated in TWA as primarily responsible for ensuring an enduring resource of wilderness.

When wilderness is designated, myriad responsibilities to maintain and enhance the wilderness character are explicit. While there are many necessary management actions, to be true to wilderness as untrammeled ground, many scholars and managers have called for the use of stewardship as an appropriate perspective for the future. Stewardship implies working with nature to perpetuate wilderness for the future, and any actions taken need to be understood from diverse philosophical, legal, and technical perspectives.

The NWPS is growing in size and complexity, and our understanding of the system is broadening. At the same time, there are questions as to whether the leadership for wilderness stewardship has embraced and understands this growing complexity. There are good examples where it is understood, but there are equally illustrative examples of where understanding is lacking. Also, there are several issues that exemplify some contemporary dilemmas of stewardship. One of these is ensuring both naturalness and wildness, while another is realizing and acting in recognition that wilderness

is not isolated from the surrounding landscape. Manipulating wilderness conditions is philosophically and practically problematic. Also, how we define minimum requirements and tools for management is important in selecting actions and tools to use. The place of recreational use has not been made particularly clear. Agency organization and commitment to stewardship are needed for success, but in many instances they seem lacking. Lastly, effective information exchange implemented through modern information technologies is a new opportunity for stewardship. Each of these issues presents significant challenges for how we steward wilderness for the future.

To enable land management agencies to meet the challenges, some principles for stewardship are offered for consideration:

- adhering to TWA is a fundamental principle for wilderness stewardship in the NWPS;
- NWPS wilderness is to be treated as a system of wildernesses;
- wildernesses are special places and are to be treated as special;
- stewardship should be science-informed, logically planned, and publicly transparent;
- nondegradation of wilderness should guide stewardship activities;
- preservation of wilderness character is a guiding idea of TWA;
- recognizing the wild in wilderness distinguishes wilderness from most other land classes; and
- accountability is basic to sound stewardship.

In shaping the future for success in wilderness stewardship, there are several things that the federal agencies responsible for wilderness should consider. Implementing these recommendations will assist the secretaries and the agencies under their purview to better steward the resource of wilderness.

Bandelier Wilderness in New Mexico. Photo by Chad Dawson.

- The four federal agencies and their leaders must make a strong commitment to wilderness stewardship before the wilderness system is lost.
- The four federal agencies must organize to maximize stewardship effectiveness and to develop a fully integrated stewardship system across the NWPS.
- Wilderness planning must be accelerated and plans prepared for the guidance of stewardship activities to enhance opportunities for evaluation and accountability, and to increase the probability that the NWPS will be sustained.
- Science, education, and training programs should be enhanced and focused to provide information, professional expertise, and public support for wilderness stewardship.
- The four federal agencies should create wilderness stewardship positions and career opportunities from top to bottom and deploy financial resources for the explicit stewardship and support of wilderness.
- Accountability for the maintenance and sustainability of the NWPS must be embraced by the four federal agencies.

It is possible to move forward and ensure an NWPS for the future. This requires doing those things necessary to build an integrated, collaborative system across the two departments and the four federal agencies. To manage the wilderness as a system means that each area is a part of a whole, no matter who administers it. It means

The report identified the need to forge an integrated and collaborative system across the four wilderness management agencies as its fundamental conclusion.

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that all wildernesses are subject to a common set of guidelines, and thus such guidelines must be developed and administered.

There exist today several system-oriented institutions that either are examples of what might be tried for wilderness or that are current wilderness stewardship activities that can be used to move administration and stewardship of wilderness toward an integrated system. The relatively new Wilderness Policy Council of the four federal agencies and the U.S. Geological Survey is one of these examples. It could be an important body for discussion of leading wilderness issues and for making recommendations to the agencies and the secretaries.

The Wilderness Information Network (www.wilderness.net) is a network for compiling and disseminating information about wilderness over the Internet. It draws together the information developed by stewards of individual wildernesses; research by federal agencies, university professors, and others; information disseminated in periodicals and other media; and information from groups that care about wilderness and stewardship. The Arthur Carhart National Wilderness Training Center and the Aldo Leopold Wilderness Research Institute are interagency organizations designed to bridge the training and research needs of the four federal wilderness stewardship agencies.

Collaborative and cooperative activities among federal agencies in Alaska also are instructive for illustrating possibilities. The Alaska Cooperative Planning Group, the Alaska Issues Group, the Alaska Land Manager's Forum, and the Alaska Public Lands Information Center all are institutions that demonstrate that integrative, collaborative wilderness stewardship might be possible.

Mission Mountains Wilderness in Montana. Photo by Chad Dawson.

These institutions help lead toward a NWPS as a system. Combining strong leadership from the secretaries of agriculture and the interior, from the agency heads and their staffs, and with the efforts of dedicated wilderness stewards and advocates, the potential exists for bringing all of the pieces together to ensure that a system of wilderness will continue to exist. Four specific recommendations are offered for consideration by the secretaries and others responsible for ensuring a continuing resource of wilderness.

1. The secretaries should issue joint policies and regulations specifying common interpretations of law and thus provide broad guidelines for the stewardship of wilderness in the NWPS.
2. The secretaries should devise an organizational structure to make stewardship happen across the agencies so that a high quality NWPS is continued in perpetuity.
3. The secretaries should devise monitoring and evaluation systems to ensure that we know how well wildernesses are being stewarded, especially in the context of a system of wildernesses, and they should reinstitute regular reporting of the state of the NWPS.
4. The secretaries should develop a means for informing the American people about the NWPS and about their wilderness heritage.

Implementing these recommendations and implementing the framework for action prescribed in this

Continued on page 32

Keeping It Wild

Be Involved in Wilderness Management!

BY TINAMARIE EKKER

Many people believe that wilderness is protected once Congress passes legislation designating it as part of the U.S. National Wilderness Preservation System (NWPS). However, getting an area designated is just the first step in assuring its long-term protection. Keeping wilderness wild in more than name only requires ongoing public participation in wilderness management decisions.

Howard Zahniser (1956), chief author of The Wilderness Act (TWA), wrote: "It behooves us then to do two things: First we must see that an adequate system of wilderness areas is designed for preservation, and then we must allow nothing to alter the wilderness character of the preserves." It is the second part of Zahniser's advice that forms the mission of Wilderness Watch. Organized in 1989, Wilderness Watch serves as the only national organization to focus exclusively on what happens to wilderness and wild rivers after they are designated by Congress.

Each of the 644 wildernesses in the United States. need citizens to advocate for good stewardship. The National Environmental Policy Act requires federal agencies to invite public comment on most proposed management actions affecting the natural environment. Public input is essential to support the efforts of good wilderness stewards and to remind managers of their statutory obligation to preserve the wild character of wilderness.

In my work as policy director for Wilderness Watch, I deal with a wide variety of wilderness management issues nationwide. The tools and techniques that I use every day can be applied by anyone interested in protecting a wilderness area. Following are some suggested steps for getting started, and a brief description of useful tools, where to find them, and how to use them.

Select a Wilderness

You don't have to live near a particular wilderness to become involved in its management. To find out which wildernesses are located in your geographic area of interest, browse your local bookstore for wilderness books such as *America's Wilderness* (Tilton 1996) or check the online map provided by the Wilderness Information Network at www.wilderness.net ("search with map" link).

Article author TinaMarie Ekker.

You need to determine which agency manages a selected wilderness in the NWPS. There are four possibilities: the U.S. Forest Service (USFS), National Park Service (NPS), Bureau of Land Management (BLM), or the U.S. Fish & Wildlife Service (USFWS). Both Tilton's book and the Wilderness Information website ("all wildernesses" link) can tell you which agency oversees a particular wilderness and how to contact the appropriate office.

If the wilderness is managed by the USFS, NPS, or USFWS, it will be located within a specific national forest, national park, or national wildlife refuge. If it is administered by the BLM, then it will be managed by a BLM field office in that state. For example, suppose you live in North Carolina and select the nearby Middle Prong Wilderness. If you already know that it is managed by the Pisgah National Forest, you can phone the Pisgah National Forest supervisor's office to find out which Ranger District on that forest oversees the wilderness. Agency websites provide contact information for all agency field offices. Alternatively, you can look up the Middle Prong Wilderness on the Wilderness Information website or in Tilton's book. Either source will provide you with the name of the agency and contact information for the appropriate office.

Get on an Agency Mailing List

Call or write the appropriate field-level office of the managing agency and ask to be placed on their mailing list for all actions affecting your wilderness. For example, being on the mailing list with BLM's Needles field office in California means that I receive notice of proposed actions affecting the 21 wildernesses administered by that office. This enabled me to respond when I recently received a Notice of Proposed Action for construction of six 10,000-gallon water tanks called "guzzlers" within the Sheephole Valley Wilderness. The guzzlers were proposed to help boost the bighorn sheep population to expand recreational hunting opportunities. My reaction was that this constituted unnecessary manipulation of wildlife in wilderness. Also, the construction would include the use of pickup trucks, a backhoe, a motorized excavator, and a cement mixer in the wilderness. Similar proposals for using motorized equipment and intentional manipulation of natural processes in wilderness are increasingly common nationwide.

Introduce Yourself to Agency Staff

Call or visit the wilderness manager. Explain that you want to become involved in the area's wilderness management. Ask what proposals or projects are underway and what challenges the manager faces in protecting wilderness qualities. Ask if a wilderness management plan has been completed, or when the agency plans to prepare one. Let the manager know you support good stewardship. Your support and input can be invaluable to wilderness managers when they are called upon to defend good decisions that protect wilderness.

Get Acquainted with the Wilderness Area

Although desirable, it is not necessary that you visit a wilderness in order to become an effective advocate. However, gathering some basic information can strengthen your advocacy efforts. Good information sources include Tilton's book, information sheets available from the agency office, the Wilderness Information website, and the agency's website (although some agency websites don't mention the presence of wilderness). Regional natural history books are useful for information on an area's geology, wildlife, and plants. Obtain a map from the agency or an outdoor sporting goods store, and study it. Pay attention to characteristics that can affect wilderness management:

- **Topography—**Is it flat, mountainous, or bisected by steep canyons? Topography can indicate important wildlife corridors and recreational travel patterns. Do people fan out or funnel into just a few access areas? Flat, open terrain is more susceptible to motorized trespass.
- **Location—**Is it remote or within two hours of a major urban area? Are access roads paved? The more developed the area is around a wilderness, the more likely the wilderness will be subject to high use, invasion by exotic species, predator control, and intentional fire suppression.
- **Vegetation—**Is it grassland, swamp, tundra, forest, or desert? Each has implications for fire management, modes of access preferred by managers and other visitors, and visual screening that can affect opportunities for solitude. Are any threatened or endangered species or exotic or invasive plants present?
- **Wildlife—**Are any threatened or endangered species present? Any migratory birds (which are protected by international treaty and law)? Any introduced species, including feral species such as hogs or horses? Does fish stocking occur? Is hunting allowed?
- **Current Uses—**Is visitor use low or high, seasonal or year-round? What types of recreational use occurs? Do commercial outfitters use

Overbuilt bridge in the Bob Marshall Wilderness with USFS ranger cabin in background. Photo courtesy of Wilderness Watch.

the area? Is there any livestock grazing? Are there valid mining claims or private inholdings (private or state property completely surrounded by wilderness)? In Alaska, are there significant levels of subsistence use (hunting, fishing, gathering plant materials)?

Gather Reference Materials

Three items are especially useful: (1) a copy of TWA; (2) a copy of the law that designated a particular wilderness, and (3) a copy of the agency's national wilderness management policies and regulations. In most cases, these materials will probably amount to 20 to 30 pages.

- TWA is available online from Wilderness Watch at www.wilderness watch.org ("site index" link), or from the Wilderness Information website ("legislation" link). It is also available as an appendix in *Wilderness Management* (Hendee and Dawson 2002).
- To find the law that designated a wilderness, you need to know its public law number. Find this by looking up a wilderness on the Wilderness Information website ("all wildernesses" link), or contact the wilderness manager or Wilderness Watch. Wilderness designation laws and their management implications are summarized in the appendices of *Wilderness Management* (Hendee and Dawson 2002). Once you know the public law number, a librarian in the government documents section of a library can help you look up the law. An area's designating legislation sometimes contains special provisions and exceptions that are not in TWA, and these two together provide the legal direction for how a wilderness must be managed.
- Each federal agency that manages wilderness has wilderness management policies, regulations, or both. Don't be intimidated by policies or regulations—they are quite readable and are divided into short, specific topics. Agency regulations have the force of law, while policies serve as internal guidance that agencies should follow. Regulations are contained in the Code of Federal Regulations (CFR) available in the reference section of public libraries or online at www.access.gpo.gov/nara/.
  1. USFS wilderness regulations are in 36 CFR Part 293. The USFS wilderness policies are in Forest Service Manual 2320.1-2323.26b, or are available at the agency office and online at www.fs.fed.us/im/directives/fsm/2300.
  2. BLM wilderness regulations are in 43 CFR Part 6300. The BLM is currently revising its wilderness policies to be compatible with their new regulations.
  3. FWS wilderness regulations are in 50 CFR Part 35. The agency's *draft* wilderness stewardship policies can be found in the January 16, 2001, *Federal Register*, available in the reference section of libraries, at agency offices, or online at www.access. gpo.gov/nara/.
  4. NPS has no wilderness management regulations and its wilderness policies are contained in three documents titled NPS Management Policies Chapter 6, Director's Order # 41, and Reference Manual 41. These can be obtained from the national park that oversees a wilderness, or online at www.nps.gov (Servicewide Info, Reference Desk, then "policy place" link).

Do not hesitate to get involved out of fear that you are not knowledgeable enough about wilderness laws or agency policies. Most managers will welcome your interest and be willing to answer your questions. As you gain skill and experience, your input will be increasingly valuable in encouraging and supporting managers' efforts to protect wilderness.

When opportunities arise to comment on wilderness issues, it is important

Motorized equipment installing a desert bighorn sheep guzzler in an Arizona wilderness area. Photo courtesy of Wilderness Watch.

to provide your thoughts in writing via letter or e-mail. Your comments should be specific, detailing the points that are good or bad about the proposal *and why*, and any alternatives that you suggest for consideration.

Points to consider: is the proposed action consistent with laws, policies, and regulations? If not, be specific in pointing out the inconsistencies. It is useful to quote directly from law, policy, or regulation when making your point. To make your comments useful, focus on the issues, not the managers or their personalities.

Priorities for Advocacy

How does one decide which issues to tackle? In part this depends on your own interests and values. For example, you might be most concerned with the increasing motorized use that is occurring throughout the NWPS. If so, stay alert to the types of situations most likely to trigger motorized proposals. These include trail work, fish stocking, livestock management, scientific research, game management, restoration of historic structures, fire management, and access to private land inholdings in wilderness.

If wildlife and habitat issues are your singular passion, you may be interested in proposals affecting threatened or endangered species, migratory birds, fish stocking, removal of feral species, predator control, habitat modifications such as vegetation manipulations, and wildlife impacts resulting from high visitor use such as species displacement and removal of large predators.

To assess a proposal's range of impact, ask yourself the following questions: Does the proposal affect many wildernesses nationwide (such as new agency policies or regulations), or does it only affect one wilderness? Will the proposal affect the entire wilderness (such as a wilderness management plan, fire management plan, or some research proposals) or is it site-specific, such as restoration of a historic structure, trail maintenance, or placement of a weather station? Even site-specific projects can have farranging impact—word travels through the agencies regarding what types of actions are being approved and whether they are being challenged by the public.

A speed limit sign in the Brigantine Wilderness area in New Jersey where vehicles have been allowed on the beach area. Photo by Dennis Schvejda.

Comment Points

How do you decide what points to emphasize in your comments? Some proposals may violate laws, while others may violate principles of good wilderness stewardship. Following are five common themes to consider when writing a comment letter.

1. **Legality.** Determine if the proposed activity is legal in your wilderness. Review pertinent sections in TWA and in your wilderness's designation legislation. Examples of activities that may be legal in some wildernesses include livestock grazing, snowmobiles for subsistence hunting in Alaska, landing of aircraft, jet skis in Idaho's Frank Church-River of No Return Wilderness, and truck portages in Minnesota's Boundary Waters Canoe Area. In such cases your comments should emphasize reducing unnecessary impacts and appropriately regulating the use. For example, chasing wolves with snow machines occurs in some Alaska wilderness areas—your comments could point out that this is questionable as a subsistence-related activity and that managers have authority to curtail this activity to protect wildlife as an important component of wilderness character.

2. **Wilderness character.** The overarching mandate of TWA is that wilderness character must be preserved, and this should be emphasized in every comment letter. Preservation of wilderness character takes precedence over cost, convenience, or the goals of projects unrelated to wilderness protection, such as most scientific research or

manipulation of game species. Wilderness character is a complex mix of tangible and intangible qualities, but perhaps the most singular aspect is that wilderness is to remain *wild*. Agencies may attempt to justify motorized management activities in wilderness, such as use of helicopters or mechanized equipment, and may argue that it causes no lasting biophysical impact or occurs during the visitor use "off season." Remind agencies that motorized activities are the antithesis of wildness and therefore always harms wilderness character, whether visitors are present or not.

3. **Minimum requirement.** Familiarize yourself with the concepts known as "minimum requirement" and "minimum tool." These will enable you to comment knowledgeably on innumerable wilderness management proposals. Determine if a proposed action includes any of the prohibited actions listed in section 4(c) of TWA. These include aircraft landings, roads, use of motor vehicles, motorboats, motorized equipment, and placement of structures or installations. TWA only allows these prohibited actions under very narrow circumstances, and these are sometimes misapplied by managers, resulting in degraded wilderness character.

   If a prohibited action is proposed, then apply the minimum requirement test by asking the following two questions. Does the proposal involve an emergency affecting the health and safety of humans within the wilderness? Is the overall project the minimum requirement necessary to protect and administer the wilderness? If the answer to both questions is "no," then the prohibited action cannot legally be allowed. If the answer to either question is "yes," then apply the minimum tool test described later in the text.

Each of the 644 wildernesses in the United States need citizens to advocate for good stewardship.

Consider who proposed the project, because if it is anyone other than the wilderness management agency, then the project may not be the minimum necessary for protection of the wilderness. Outside entities that propose projects in wilderness include states, counties, utility companies, scientific researchers, historic preservation societies, and commercial outfitters and guides. Since these entities are not responsible for wilderness administration, the project is proposed for other purposes. Even if the project appears to provide some peripheral benefit to wilderness, the key point is that it is not the minimum requirement necessary for administration of the wilderness and, therefore, does not justify the use of prohibited actions that degrade wilderness character.

For example, last year the state of Washington and other parties proposed helicopter use in the Mount Rainier Wilderness to find, capture, and radio-collar elk to study why the regional game population was declining. In the remote desert of the Cabeza Prieta Wilderness in Arizona, hunting interests have convinced managers to routinely drive motor vehicles through the wilderness hauling water to guzzlers in hopes of increasing the number of desert bighorn sheep available for hunting. Scientific research and hunting are allowable but not mandatory uses of wilderness and, therefore, do not justify compromising wilderness through prohibited actions that are not *necessary* for wilderness protection.

What if the project does meet the minimum requirement test? This still does not mean that the prohibited action is the appropriate tool for accomplishing the project. Perform a "minimum tool" assessment by asking yourself if it is possible to accomplish the project by nonmotorized, nonmechanized means. If the answer is "yes," then the prohibited action is not the "minimum tool" for completing necessary projects in a wilderness.

In summary, agencies can only allow prohibited actions in wilderness if there is a human safety emergency within the wilderness, or if the overall project is the minimum action *necessary* for administration of the area as wilderness, and if the prohibited action is really the minimum tool for accomplishing the necessary task.

4. **Manipulation.** Does the proposal call for intentional manipulation of natural processes? By law, wilderness is to remain untrammeled, which means unfettered and free of intentional human manipulation. Commonly proposed manipulations include prescribed fire, application of herbicides, predator control, fish stocking, and manipulation of game species or habitat to augment hunting opportunities. For example, a recent proposal in Montana calls for poisoning lakes in the Bob Marshall Wilderness to remove introduced hybrid trout, and then restocking the lakes with western slope cutthroat trout. The problem is that those lakes had no fish present prior to intentional

human interference. The most natural condition of wilderness is its wildness. In wilderness, natural processes should prevail.

5. **Solitude.** Preserving opportunities for solitude is a key principle of wilderness stewardship. Solitude means more than being away from large numbers of people—it also means removal from modern civilization, its technologies, and contrivances. In your comments, pay attention to whether any of the following situations are part of the action you are commenting on, and if so, point out how it degrades opportunities for wilderness solitude.

Crowding degrades opportunities for solitude and can result from a variety of management choices. Lack of visitor-use limits or group-size limits can result in crowding. Crowding may be encouraged by overdevelopment of trails, bridges, and signage because these make travel easier and faster for more people by requiring less skill, time, effort, or route finding. Overdevelopment of wilderness trailheads and access roads can also compound crowding by making wilderness readily accessible to large numbers of casual visitors who are not seeking a wilderness experience. Crowding and other intrusions on solitude can occur if managers accommodate activities that are not dependent on a wilderness setting, such as training for competitive events, rock climbing on bolted routes, or scenic overflights.

Other management actions that degrade solitude include regulating human choices in the wilderness, such as requiring inflexible route itineraries and assigned campsites or, as the USFS recently proposed for the Mount Hood Wilderness in Oregon, even assigned picnic spots at popular destinations. Regulation can reduce the sense of solitude from the nonwilderness world. Regulation applied at the wilderness boundary is very appropriate, but heavy-handed regulation within wilderness is rarely necessary if crowding is not allowed to occur.

Establishing visitor-use limits such as trailhead quotas or a permit system is a management action that is often necessary for popular wildernesses. Group-size limits that are not species specific should be proactively established for all wilderness to help limit potential impacts. Suggest limits based on the total number of "beating hearts", or number of feet and hooves on the ground. For example, the Chimney Peak Wilderness in California has a group-size limit of 15 people plus 25 packstock—this represents up to 130 feet and hooves on the ground. In contrast, Gates of the Arctic Wilderness in Alaska sets group limits at 10 people for float trips and 7 people for backpacking—this represents a maximum of 20 feet on the ground.

An administrative road used by staff to drive on as they check on water levels in guzzlers for desert bighorn sheep in the Cabeza Prieta Wilderness. Photo courtesy of Wilderness Watch.

Conclusion

Keeping wilderness wild depends on wilderness advocates becoming involved in wilderness management decisions through the public involvement process. Wilderness managers need public encouragement to protect wilderness, and they rely upon wilderness advocates to support good management decisions. With a few useful tools in hand, an individual can make a big difference in protecting our wilderness heritage. The quality of our wilderness is under threat from many sources. The future of our NWPS is in our hands today. Will it be civilized, or will it be wild?

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PERSPECTIVES FROM THE
ALDO LEOPOLD WILDERNESS RESEARCH INSTITUTE

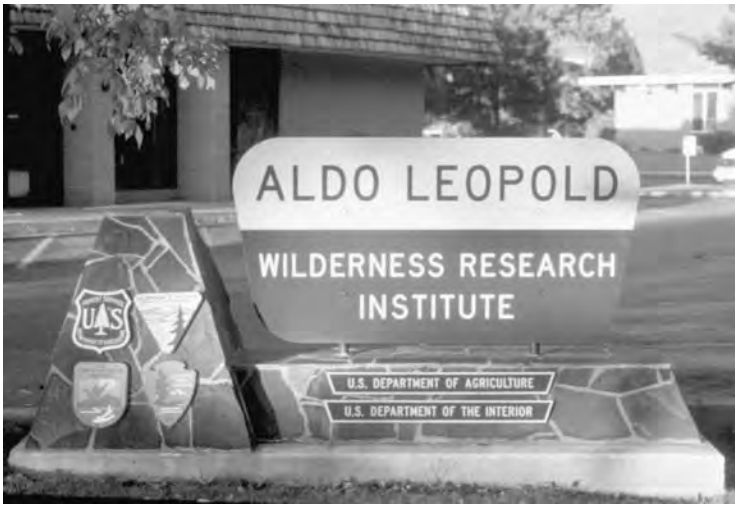
Managing the Density of Recreation Use in Wilderness

BY DAVID N. COLE

Managing the density of recreation use is among the most contentious aspects of wilderness management. Ideally, wilderness should not be crowded. There is little controversy about this. However, as population expands, demand for recreational access to wilderness increases. In some areas, managers have responded by implementing limits on recreation use. Usually limits apply just to overnight use; day use remains unlimited. In other areas, recreation use has been allowed to increase unabated. Increasingly in the United States both decisions to limit use and decisions not to limit use are challenged by wilderness advocacy groups with opposing viewpoints. Particularly controversial are questions about whether to limit day use and whether to base use limits on concerns about experiential conditions, as opposed to concerns about ecological impacts of recreation.

For decades, managers and researchers have searched for better ways to make decisions about appropriate use levels in wilderness. While progress has been made, it has been limited. Planning frameworks—such as Limits of Acceptable Change and Visitor Experience and Resource Protection—provide a template for making decisions but still require managers to make value-based judgments about appropriate conditions. Studies of wilderness visitors provide insight into current visitors' opinions about appropriate conditions and preferences for management. However, it is not clear to what extent prescriptive decisions about appropriate conditions should be based on the opinions of the average current visitor.

Given the continued contentiousness of these issues, the Aldo Leopold Wilderness Research Institute and the Wilderness Institute at the University of Montana sponsored a workshop to address the question of what science has contributed and can contribute to decisions about where use limits are needed, what those limits should be, and on what they should be based. Discussion was largely confined to situations in which concern for the visitor experience is the basis for use limits, since this is more controversial than limits based on ecological impacts. Copies of eight individual articles from the proceedings of the workshop can be downloaded at www.wilderness.net/research.cfm, or a copy of the entire proceedings can be ordered from the Aldo Leopold Wilderness Research Institute (leopold.wilderness.net).



The general conclusion of the workshop was that progress has been made in grappling with the issue of appropriate visitor densities in wilderness. To date, most research has involved administering post-trip questionnaires to visitors at individual wildernesses. While further research of this type will provide additional insights, most workshop participants felt that supplementing this work with different research questions and methodologies is key to making further progress. Research should focus on consequences of use limits, such as effects on

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Restoring Wildness?

Conservation Management on the Isle of Rum

BY BRIAN WOOD

Ever since 1957, when the Isle of Rum, which lies off the west coast of Scotland, was purchased by the Nature Conservancy (NC) and declared a National Nature Reserve (NNR), its conservation managers have had visions of restoring this island to a more natural state. Today, many visitors to Rum would consider that it offers an experience of wildness that is as good as any available elsewhere in the Scottish Highlands. It is a rugged island and boasts a striking range of peaks that lie around the remains of the rim of a volcanic cone. With only two rough trails crossing the island, the interior of Rum is only accessible on foot, by pony, or in four-wheel-drive vehicles. However, although there are wonderful vistas across its largely treeless landscape, the island's current condition is not the outcome of the work of nature.

Article author Brian Wood.

Conservation Management in Europe

Many nature reserves in Britain and other parts of western Europe are quite intensively managed and are seminatural remnants of a landscape that has been intensively manipulated for generations. The Habitats Directive (Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora—92/43/EEC), which is the principal conservation legislation in the European Union, identifies many habitats that have resulted from human use of the land to be especially important and requires conservation managers to protect their species and communities from change. The use of former agricultural practices, such as grazing by domestic livestock, is thus commonplace as a conservation management technique in European nature reserves.

However, this "preserve systems" strategy (Caughley and Sinclair 1994) is now being challenged because it can deliver only limited conservation benefits (Whitbread and Jenman 1995). Indeed, fears have been expressed that the people of Europe are in danger of losing touch with nature (Bibelriether 1998). Moreover, ecologists now accept that natural systems are far more dynamic than they were formerly willing to concede (e.g., Peterken 1996). So, attempts to restore reserves to a more natural state are to be welcomed. In large and more remote reserves, such as the Isle of Rum, this type of conservation strategy could potentially reap benefits for the supporters of wildness, creating restored landscapes that reflect the original wilderness that existed before the impact of humans in Europe.

Rum in the Past

Nowadays Rum is protected by both domestic (UK) and European conservation legislation and is acknowledged as one of the most important protected areas in Europe. It is one of the biggest British NNR's, extending to almost 107 sq km, and is wholly owned by the government conservation agency, Scottish Natural Heritage (SNH), which is responsible for its protection and management. About 25 people currently live on the island, and most are SNH employees and their families. However, there have been substantial changes in the human population of Rum over the centuries.

Over the past 500 years the vegetation of Rum has been dramatically affected by various influences. First came a period when deer dominated the ecology of the island by consuming tree seedlings and preventing the growth of woodlands. Although the deer were certainly hunted for food and perhaps sport, their numbers remained sufficient to be a

potent influence until they were replaced by human settlers and eventually exterminated. In turn, the people and their domestic animals were banished and countless sheep took their place. During this time the heathery slopes of the hills would have been periodically burned to provide fresh growth for the sheep to consume. With the demise of sheep farming the appearance of Rum perhaps returned to something akin to how it looked in the 16th century. Red deer were restored, and Rum later became known as the forbidden island, with few visitors except for shooting party guests. The island properties and buildings were sold to the government in 1957 by the trustees of the last private sporting estate. Finally, the island has witnessed a phase of conservation management with deer numbers stabilized by annual cull and the introduction in 1971 of a herd of highland cattle as a tool to help in the management of the vegetation.

Restoring Wildness

In order to return places that have had a long history of human use back to a wilder state, it is important to have an accurate vision of the past. A former Scottish director of the Nature Conservancy Council, which succeeded the NC as managers of Rum in 1973, has written that "the main objective of the nature reserve is to recreate a habitat resembling that which existed in Rum before the island was made treeless by man, and to achieve this, the managers must have a reliable picture of the island as it was 2500 years ago, at the beginning of the Iron Age" (Boyd and Boyd 1990).

The policies to be followed in the restoration of Rum are set out in a series of conservation management plans that cover the period from 1960 to the present (Eggeling 1964; Ball 1970; Nature Conservancy Council 1974, 1987; Boyd 1977; Scottish Natural Heritage 1998). During this period of more than 40 years there were two major reorganizations of governmental conservation agencies. SNH has goals that include wildlife conservation, landscape protection, and the welfare of rural communities, whereas the former organizations were concerned solely with wildlife issues.

Red Deer on Rum

Red deer are a potent symbol of the Scottish Highlands. When he was chairman of SNH, Magnusson (1997) wrote that "there have been deer on Rum since time immemorial" and that "for many people Rum and deer are inseparably linked—and rightly so." In reality, the history of deer on the island is considerably more complex than these statements would suggest. The earliest written account of deer on Rum reported "an abundance of little deire" in the 16th century (first published 1546, new edition Munro 1934). It appears highly probable that the deer recorded by Munro were red deer that had become island-adapted and consequently small in stature.

Rum is now world renowned for the long-term study into the sociobiology of red deer that has been conducted by scientists from Cambridge University (Clutton-Brock et al. 1982). However, the animals used in this research are descended from ones introduced to Rum in about 1845. This new population originated not only from mainland Scotland, but from as far away as southern England. Since 1957 the total island population of deer has been stabilized at about 1,500 animals as a result of conservation research (Lowe 1971). Regrettably, as long as their numbers are limited on Rum, the island's red deer will not shrink to the small body size of their forebears. So, they will remain typical of managed Highland deer, not a natural island population.

Red deer stag on the Isle of Rum. Photo by Brian Wood.

The Wild Forest

It has been suggested that the medieval name for Rum, "Kingdom of the Wild Forest" referred not to an island covered with extensive woodlands but to a largely treeless deer forest (Samuel 2001). There would certainly have been very little woodland on Rum by medieval times, but there was a time in the past when woodland was extensive on this island. When it became an NNR the only significant woodland on Rum was in the east of the island. A small part of this had been planted in the middle of the 19th century, and the remainder was planted some 50 years later. Elsewhere, there were a few fragments of scrub woodland in steep gullies and on cliff ledges, but the last copse of native woodland had apparently been felled before 1796 (Ball 1987).

However, the analysis of plant remains and pollen from a site near the center of the island led botanists to conclude that Rum had formerly supported extensive woodland on its lower slopes, particularly in the north and east of the island. Restoring this primeval woodland became a focal part of the conservation of the island after 1957. All sheep were removed from Rum before the NC

Construction of a deer exclosure for tree planting. Photo by Brian Wood.

took charge, and the practice of burning ground vegetation was ended, thus removing two factors preventing tree growth. The new managers of Rum used techniques from commercial forest management to establish a new cover of native tree species. Blocks of land were fenced to exclude deer, since they would browse and kill tree seedlings. The land was prepared with plowing and fertilization before young trees, raised in a nursery on the island from native seeds, were planted by hand (Wormell 1968). Now over 1 million trees have been planted in this way, and there are plans to further extend the plantings on the island. At the same time, some native herbs have been transplanted to newly established woodland areas to speed the colonization of a woodland ground flora.

A Vision for the Future

The picture of Rum that conservation managers are seeking to achieve is of an island that supports extensive woodland in parts, but elsewhere has herb-rich grasslands maintained by grazing animals. Red deer will roam the entire island, but to prevent them from destroying the woodland their numbers will need to be continually controlled. Others have suggested that wolves should be introduced to Rum in order to keep its deer population in check and permit woodland regeneration (Nevard and Penfold 1978; Yalden 1986), but population modeling indicates that wolves would quickly decline to extinction on an island the size of Rum. Moreover, there is no evidence to suggest that wolves have ever occurred on Rum in the past, even though they were a part of the fauna of the Scottish mainland until at least the 17th century.

However, SNH also believes that there should be a significant place for people in the future of this island. They see Rum as "an island which has a community living and working in harmony with their environment. An island which is economically and ecologically dynamic and sustainable. An island which will be inherited by each successive generation with pride and a commitment to carry on working with nature" (Ritchie 1997). This vision includes the continuing use of domestic animals as a means of controlling nature and to perpetuate the types of vegetation that are listed in the UK response to the Habitats Directive.

Former Natural States

Recent evidence for past changes in the vegetation of Rum is provided by the analysis of pollen remains from a site near Kinloch (Hirons and Edwards 1990). The pollen profile confirms that extensive woodland disappeared from this part of Rum about 4,000 years ago and, perhaps because of the clear evidence of human activity and the presence of charcoal, it is suggested that the woodland was progressively felled and burned by the early settlers. However, I believe that the pollen profile reveals an alternative and perhaps even more plausible explanation for the demise of Rum's primeval forest (Wood 2000). The pollen profile shows that there were quite dramatic changes in other components of the vegetation on Rum immediately before the sudden decline of its forest. In particular, several highly palatable herbs almost disappeared and were replaced by a sudden rise in herbs that are now common in heavily grazed systems throughout Scotland. This suggests that the woodland declined soon after the arrival of large grazing animals to Rum, either domestic livestock or the first arrival of deer to the island. The introduction of deer was most likely by people (Yalden 1982). This reinterpretation of the evidence suggests that the natural state of Rum took two very different forms in the past. From about 10,000 until 4,000 years ago the island was quite well wooded, though the woodland may have been very scrubby and open, especially near the coast and on the higher slopes of the hills. Since then, with the possible arrival of red deer to Rum, the forest has largely disappeared as a consequence of their browsing. Deer numbers would have risen and, with heavy competition for food and an absence of significant predators, the body size of the deer would have fallen dramatically as they became island-adapted. Unfortunately, any small deer that remained until historic times were exterminated by people and have been replaced by deer of the same species, but ones that do not differ from their mainland counterparts.

If conservation managers decide to re-create wilder and more natural conditions on Rum, then they should consider the evidence that Rum was a well-wooded island, but without large herbivores until about 4,000 years ago. If red deer managed to colonize Rum unaided, which we will never know, then a treeless island with a high population of deer of very small stature may also be considered as natural. If humans brought the original population of red deer to the island, as they did the present population, then deer should be considered as nonnative on Rum.

Conclusions: Wild Nature or Artifact?

If conservation managers promote both deer and woodland on Rum in the future, while controlling deer numbers in order to achieve this balance, they will create a situation that has never been a natural part of the island in the past. Despite the stated objective to return the island to more natural conditions, the present management of Rum by SNH appears to attempt to preserve both wildlife and human artifacts that have never successfully coexisted in the past. At the same time, it expresses the hope that people and nature will, in the future, coexist sustainably on this island. Time will tell if this policy can deliver something that the people of Europe can be proud of. However, if this type of strategy is widely followed then I fear that wildness and natural systems where nature is not continually controlled by people, and the essence of wilderness that may be found in such places, will remain beyond the reach of both conservation managers and the general population.

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Central mountain peaks on the Isle of Rum. Photo by Brian Wood.

Wilderness Attribute Mapping in the United Kingdom

BY STEVE CARVER, ANDY EVANS, and STEFFEN FRITZ

Abstract: A wilderness continuum concept can identify the wilder areas of Britain. Geographical Information Systems are used to present information on these areas and solicit public opinion as to which factors are perceived to be important wilderness quality indicators. Consensus maps are compiled from a composite of individual responses and the results compared to Britain's network of protected areas.

Article co-authors left to right: Steve Carver, Andy Evans and Steffen Fritz.

Introduction

Although legal definitions of wilderness exist, the concept remains difficult to specify. Nash (1982, p. 1) was tempted to let wilderness define itself: "to accept as wilderness those places people call wilderness" with emphasis "not so much on what wilderness is but what men *think* it is." Nash describes wilderness as one extreme on a continuum from the "paved to the primeval." The position along the continuum at which wilderness occurs has more to do with perceptions than it does with ecological conditions.

Recent research in Britain has focused on identifying and mapping a wilderness continuum using Geographical Information Systems (GIS) methods that take perceptions of wilderness into account (Carver 1996; Carver and Fritz 1999). Despite the lack of extensive wilderness in Britain, it is argued that it is possible to identify a continuum from the most altered and accessible to the most natural and remote places. This article describes the techniques used to map the wilderness continuum for Britain using input from the general public on which geographi-

(PEER REVIEWED)

cal factors are considered important wilderness quality indicators.

Britain and the Wilderness Continuum Concept

Most definitions of wilderness stress the natural state of the environment, the absence of human habitation, and the lack of other human-related influences and impacts. Clearly, few such areas exist in Britain today. Where they do, they take the form of small and isolated pockets. Go back a few hundred thousand years, however, and the whole of Britain was a wilderness with no human settlement. It was only with the arrival of early humans across a land bridge between Britain and the European continent that this wilderness began to be eroded by human incursion, settlement, and forest clearance. Just 2,000 years ago many areas were still home to wild animals commonly associated with North American wilderness: wolf, beaver, bear and lynx (Watson 1984). However, just a few hundred years ago the areas of Scottish Highlands we may be tempted to call wilderness today were the basis of a thriving rural economy. It was the "Clearances" of the early 19th century that erased these traditional hill-farming communities and reinstated the secondary wilderness that we see today (Ridley 1992).

True wilderness simply no longer exists in Britain. Yet, for any given area of the world it should be possible, in theory at least, to identify the wildest tract of land within its boundary, based on human perceptions of its wilderness qualities. The wilderness continuum concept states that true, pristine wilderness is one extreme on the environmental modification spectrum (Hendee et al., 1990). At the opposite end of this spectrum is the totally urbanized environment of the city center shopping mall or office.

Experiencing real wilderness firsthand may be the ultimate education, but it is one that not all of us are fortunate enough to have.

A GIS Approach to Mapping the Wilderness Continuum

GIS can be a valuable tool for wilderness management (Lesslie 1993; Carroll and Hinrichsen 1993; Ouren et al. 1994; Aplet et al. 2000; Davidson et al. 2000), particularly for mapping, monitoring, and analysis. The Australian Heritage Commission's National Wilderness Inventory, for example, identified wilderness on the basis of four factors: remoteness from settlement, remoteness from access, apparent naturalness, and biophysical naturalness (Lesslie 1994; Miller, 1995). These factors are mapped and combined by GIS overlay procedures to define a wilderness quality index. In the Australian example, minimum thresholds are established for these indicators to differentiate areas that do not meet minimum levels of remoteness and naturalness necessary to be considered for wilderness.

To meet a particular objective—in this case the mapping of wilderness quality—it is often necessary to evaluate several criteria and consider their different levels of importance. This multicriteria evaluation, or MCE, allows investigation of a large number of choice possibilities (geographical locations) in the light of multiple and often conflicting criteria (wilderness attributes). It is possible, however, to generate rankings of the alternative choice possibilities according to their attractiveness (in this case their overall wilderness quality). MCE techniques, originally developed in the planning and operations research fields (Voogd 1983), have been adapted for use with GIS and continuous datasets for site search and suitability mapping applications (Janssen and Rietveld 1990; Carver 1991; Eastman et al. 1993).

A variation of the Australian approach to wilderness mapping has been adopted, using similar factors within a GIS/MCE framework to identify the wilderness continuum in Britain (Carver 1996). Several existing digital datasets are used to create six factor maps describing remoteness from local population, remoteness from national population centrers, remoteness from mechanized access, apparent naturalness, biophysical naturalness, and altitude. All these datasets were created and analysed using the GRID module in the Arc/Info GIS software, working at a nominal resolution of 1 km^2 (0.39 square miles). Details of data sources and interpretation are shown in table 1. The factor maps were all standardized onto a 0 to 255 scale and combined using user-specified factor weights and a simple weighted linear summation MCE model as follows:

$$W_{sum} = \sum_{j=n}^{1} w_j(e_{ij})$$

where:

- W_{sum} = position on wilderness continuum
- w_j = jth user-specified factor weight
- e_{ij} = standardized score
- n = number of factors

Table 1. Digital Map Data for UK Wild Area Mapping		
Factor	**Source**	**Interpretation**
Remoteness from local population	UK 1991 Census	Population-linear distance weighted surface using 25 km radius from target cell. Provides a measure of accessibility to local population.
Remoteness from national population centers	UK 1991 Census and CEH Countryside Information System	Population-road distance weighted surface for whole of Britain. Provides a measure of accessibility to the whole of the British population based on real travel distance weighted by population.
Remoteness from mechanized access	CEH Countryside Information System	Distance from nearest road weighted by road class. Larger roads with an implied greater traffic volume are weighted higher than smaller roads.
Apparent naturalness	CEH Countryside Information System	Distance from nearest human artifact weighted by number of features.
Biophysical naturalness	CEH Countryside Information System	Reclassification of the CEH Land Classification map showing degree of naturalness of land cover based on intensity of human use.
Altitude	CEH Countryside Information System	Height above sea level based on digital elevation model.

Other, more complex, MCE routines exist, but the weighted linear summation model is used here for simplicity and transparency (Carver 1991).

By applying user-specified factor weights, continuum maps can be generated. Figure 1 shows an example comparison between two wilderness continuum maps: one based on user weights that stress remoteness from population and access, and one based on user weights that stress apparent and biophysical naturalness. The differences between individual maps created in this manner serves to illustrate how different perceptions of importance affect the resultant continuum.

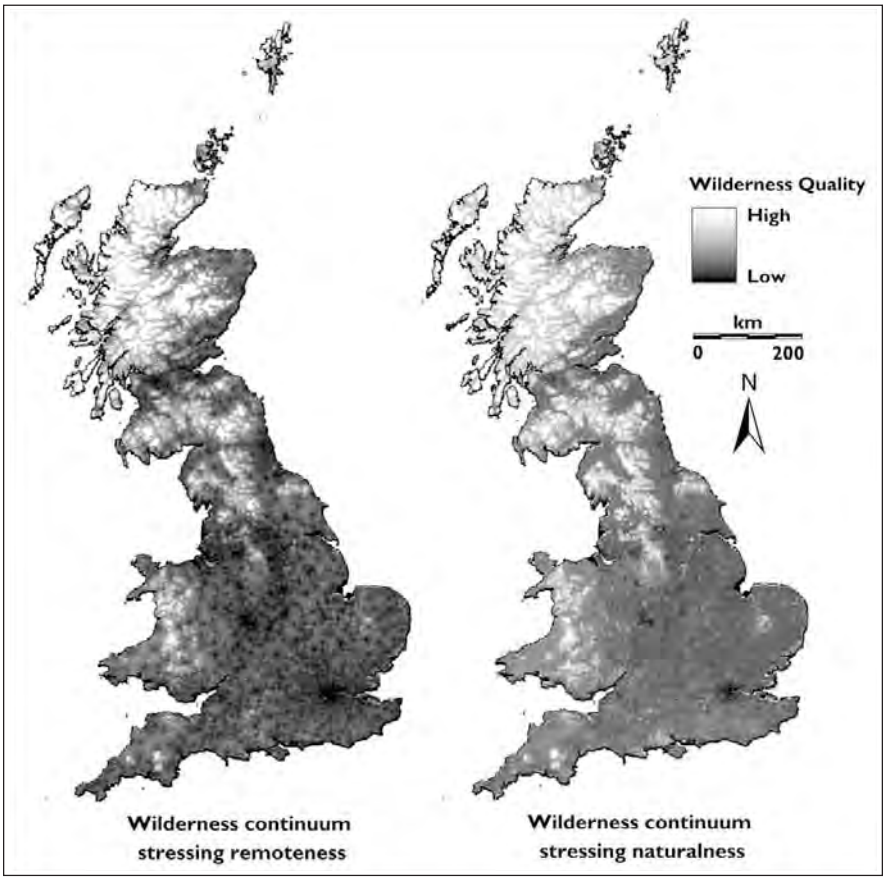

Figure 1—Comparison of two different example wilderness continuum maps.

Internet-based Surveys of Public Perceptions

Internet-based GIS have been used to solicit public opinion about a growing range of spatial decision problems (see, for example, Carver et al. 2000; Lenk 1999; Ghose 2001). The basic thrust of this research has been that the public can be empowered within traditional planning and policy-making structures if they have access to information and decision support tools such as GIS. At the same time, policy can, in turn, be far better informed (and so meet with greater public approval) from the insights gained into public opinion (Kingston et al. 2000). Research has shown that the public becomes better informed and improves understanding on a particular issue or decision problem through the use of interactive online decision support systems. A three-stage process of

exploration, experimentation, and formulation has been proposed as a model for public participation in spatial decision problems (Carver et al. 2000).

A simple, easy-to-use website has been developed to survey public perceptions of wilderness in Britain. The web mapping system allows users to *explore* their perceptions of wilderness in the British landscape through viewing a series of attribute maps and descriptions. The user can then *experiment* with weights applied to these attribute maps and draw their own wilderness continuum map on the screen. Weighting of attribute maps is done using simple slider bars and a Java mapping applet that recalculates and then redraws the continuum map. All processing of the maps is done using client-side applets and preloaded attribute maps, thereby greatly reducing redraw times and making the system highly interactive. Once users are satisfied with a wilderness continuum map, a further slider bar can be used to "top-slice" the continuum map and *formulate* a decision as to where they think wilderness begins on their wilderness continuum as shown on the map. By moving this slider bar those areas thought of as wilderness or wildland are highlighted on the continuum map. The main map interface to the system is shown in Figure 2. All final user responses submitted are retained in server-side log files such that is possible to redraw individual wilderness continuum maps for subsequent analysis. Consensus wilderness area maps are compiled from the log files.

To date, the system has remained as a prototype and is undergoing live testing with small sample groups of students. When launched as a full online survey the system will be specifically targeted at interested groups using e-mail lists, newsletter articles, advertisements, and direct mailing and will employ an online profile form to col-

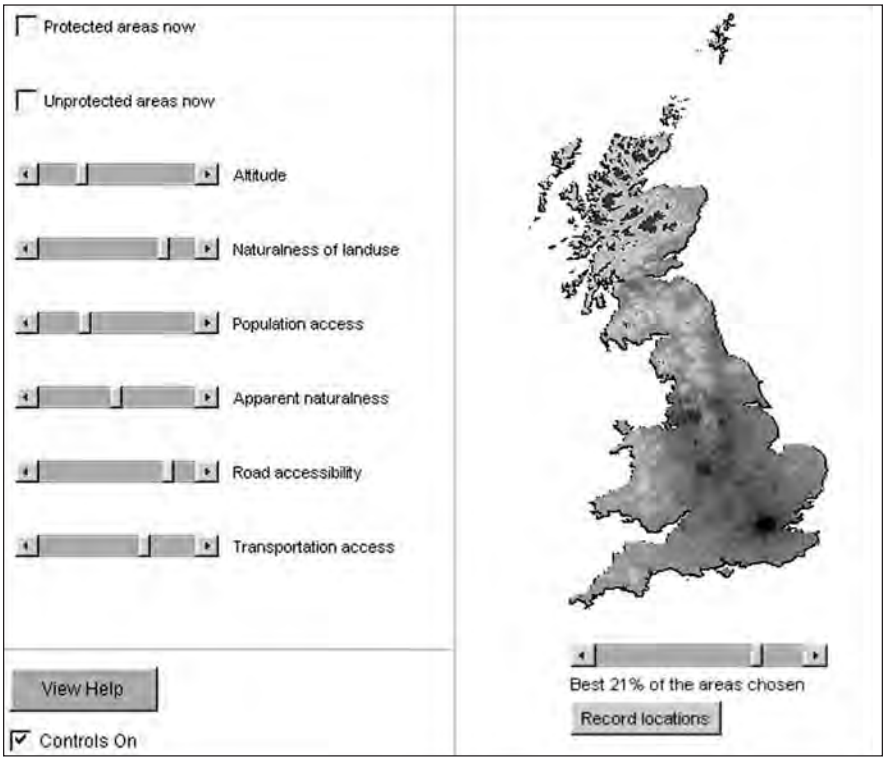

Figure 2—Wilderness mapping web interface.

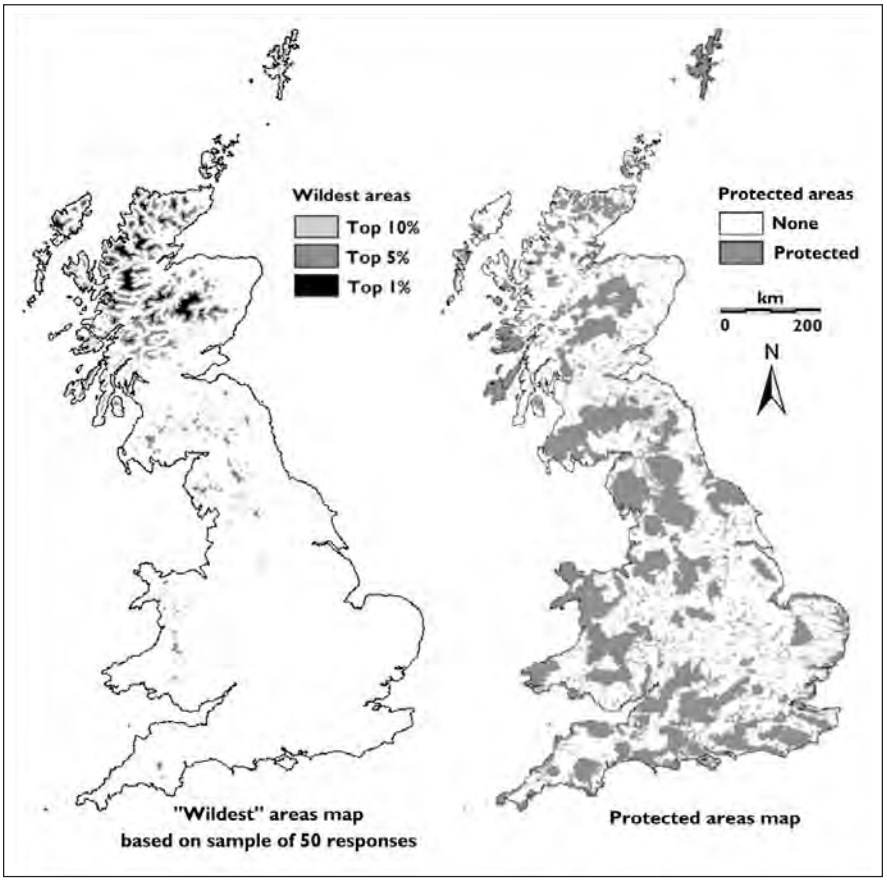

Figure 3—Comparison of "wildest" areas with existing protected areas in Britain.

True wilderness simply no longer exists in Britain. Yet, for any given area of the world it should be possible, in theory at least, to identify the wildest tract of land within its boundary, based on human perceptions of its wilderness qualities.

lect information about the user, including demographic details, profession, membership of relevant organizations, and recreational interests.

Implications for Protected Areas and Education

Using results from the GIS/MCE and Internet-based mapping methods it should be possible to identify what people believe to be the wildest parts of the country. While there may be some misgivings as to how representative these maps may actually be, it does form a useful benchmark against which Britain's existing network of protected areas can be evaluated. The "wildest" areas shown in Figure 3 are derived from the mean wilderness continuum map from a student sample (n=50) by selecting the wildest 1, 5, and 10% of the country. For the purpose of discussion these are shown next to a map showing existing protected areas within Britain. These include National Parks, Areas of Outstanding Natural Beauty, National Nature Reserves, Special Areas of Conservation, Special Protection Areas, and Environmentally Sensitive Areas. While existing protected areas may contain landscapes of high wilderness value, a significant proportion of the wildest areas of the country are not formally protected by conservation area status.

The majority of Britain's wildest areas are within private rather than public ownership. Notably, the majority of Britain's wildlands occur in the northwest Scottish Highlands. Many of these landscapes may be regarded as secondary wilderness, created during the "clearances"' and maintained subsequently by land management practices focused on deer stalking, grouse shooting, sport fishing, and sheep farming. As long as land management practices there are responsible and sympathetic to the environment, then these wild areas will be protected without need for formal policy. However, the landscape mosaic of Britain is constantly changing, so vigilance is required concerning land use pressures affecting the wilder parts of the country. Relevant organizations and conservation groups are currently formulating policies and action plans specific to the preservation and re-creation of wild landscapes within Britain. These include the National Trust and the National Trust for Scotland, Scottish Natural Heritage, and English Nature. The term "rewilding" is often used in Britain to describe the process of reinstating natural or near-natural ecosystems in formerly human-dominated landscapes through the promotion of natural processes with or without human assistance.

Much interest has been generated in rewilding projects such as those of Trees for Life (Featherstone-Watson 1996), the Carrifran Wildwood Project, Moor Trees, Coed Eryri, and the Council for National Parks (Council for National Parks 1998). Again, this kind of map could be profitably employed in identifying areas suitable for rewilding: those areas that are already the most wild stand the best chance of success in any rewilding program.

Certain ethical issues arise at this point. It may transpire that if these results were widely published, the remaining wild areas of the country would be brought to the attention of the country's burgeoning number of outdoor recreationists, who in turn may actively seek out these wild areas thereby destroying, by mere numbers, the wilderness character they value. The counterargument is that if these areas are not formerly identified and protected then we run the risk of losing them to the pressures of development. We believe that the arguments in favor of bringing these areas to the close attention of conservationists and policy makers, together with the educational benefits from wilderness recognition programs, far outweigh the risks from overuse.

In fact, Internet-based wilderness attribute mapping could prove very useful in drawing public attention to the status of wild places and, therefore, stimulate discussion about protection in the United Kingdom. This is particularly the case when spatial information on the status of wildland is available to a wider audience on the Internet. It can raise public awareness of wildland conditions and help to educate people about the value of land that is "not developed." Wilderness preservation is heavily dependent on good education. If people do not know about wilderness and its values then they are unlikely to support policy on its preservation. Wilderness information campaigns, whether based on

paper, TV, or the Internet, can only go so far in educating the public. It is essentially a one-way process, with the public receiving secondhand experiences through the medium of text, sound, and pictures, but being unable to give in return. Experiencing real wilderness firsthand may be the ultimate education, but it is one that not all of us are fortunate enough to have. The Internet GIS approach outlined here may go some way toward providing the public with the opportunity not only to learn about wilderness and its position within the landscape, but also to interact with the geographical context and actively contribute to the process of policymaking, planning, and conservation.

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Rocky Terrain

A Look at the Risks in the Outdoor Adventure Industry

A research report by the
ST. PAUL INSURANCE COMPANIES and OUTWARD BOUND, USA
and reviewed by STEVE HOLLENHORST and KEITH RUSSELL

The St. Paul Companies, a commercial property liability and insurance firm, and Outward Bound USA teamed up to conduct a study of risk management practices of outdoor adventure programs. This timely assessment paints a picture of the risks inherent in the outdoor adventure industry and the safety systems in place that attempt to address some of these risks. We encourage practitioners to heed the warnings and advice included in this report. The Wilderness Risk Managers Committee (WRMC) and The Association for Experiential Education (AEE) participated actively with the survey design and distribution. Nearly 300 outdoor adventure program CEOs and risk managers responded to the survey. The survey examined outdoor adventure programs' safety concerns, existing safety management systems within these programs, accident histories, and program priorities for expanded safety initiatives and resources.

The report concludes that consumers of outdoor adventure programs have no clear way of evaluating program safety for themselves or their children. The report goes on to say that outdoor adventure programs have concerns about safety and are looking for ways to improve their safety management programs. The tremendous growth in the industry over the last decade has led to an increase in the number of adventure program accidents and injuries.

Automobile transportation presents the greatest safety concern for survey respondents. Transportation and related driving issues were collectively listed as the number-one safety concern for programs, but only 48% of survey respondents reported utilizing driver training and testing to minimize or mitigate transportation risks. Programs may need to seek outside assistance in dealing with this particular type of safety concern, since it is often outside the expertise of adventure program staff.

"The study results show a need for outdoor adventure programs to have better alignment between their safety concerns and their risk management systems," said Dr. Stacey Moran, industrial and organizational psychologist, The St. Paul Companies. "For example, when programs were asked what kinds of additional resources would benefit their safety efforts, the most frequently cited response was judgment training for instructors, ranking above 14 other categories. But, on average, programs reported they only 'sometimes' provide such training as part of their professional development activities."

According to Lewis Glenn, vice president for safety and program, Outward Bound USA, "The outdoor industry at large would benefit from embracing a culture of safety. Outdoor adventure programs may find it easy to put resources into facilities and equipment, but affecting staff attitudes and behaviors about safety is a much more difficult proposition. In addition, many of those programs are small non-profits with limited resources to address safety management concerns."

The study also provides recommendations to consumers and participants for evaluating the safety of these programs. The study report, co-authored by Stacey Moran, Bob Box, Stocky Clark, Lewis Glenn, Lisa Kunz, and M. Andrea Wood, can be accessed at www.stpaul.com/rockyterrain-survey.

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Running with the Wild Dogs

Global Wilderness Management Education in Africa

BY MALCOLM DRAPER and ALAN WATSON

The focus of the wilderness management workshop held prior to the 7th World Wilderness Congress (WWC) in South Africa was on the philosophy, history, and management of wilderness, making wilderness relevant to local and traditional people, as well as sustainable financing of restoration and education programs. But beneath the surface of the curriculum was an undercurrent of dedication to protection of "wildness," and a certain quality of "wildness" permeated the spirit of the participants much like the African wild dog or painted wolf (*Lycaon pictus*) that once roamed over much of Africa.

The Sierra Club and the WILD Foundation sponsored this six-day workshop designed and conducted through a South African nongovernmental organization and university alliance. The core facilitators were Drummond Densham and Bill Bainbridge from the Wilderness Action Group, together with Malcolm Draper and Rob Fincham from the University of Natal's Centre for Environment and Development. Rosanne Clark of the Wilderness Foundation (South Africa) provided logistical support.

Valuable input came from guest speakers, including Vance Martin of the WILD Foundation and Alan Watson of

Workshop participants learn about South African wilderness issues and management.

The focus of the wilderness management workshop held prior to the 7th World Wilderness Congress (WWC) in South Africa was on the philosophy, history, and management of wilderness, making wilderness relevant to local and traditional people, as well as sustainable financing of restoration and education programs.

the Leopold Institute, and the trainees themselves—an extraordinary pack of "wild" people from the African countries of Uganda, Ghana, Zimbabwe, South Africa, Botswana, Swaziland, and Angola, as well as Brazil, Russia, Canada, and India. From protected-area managers to researchers, educators, and ministers of state, they challenged the instructors while learning about each other and wilderness values and management. A field trip to Shamwari Game Reserve provided opportunities to discuss the role of ecotourism, ecological restoration, and protection of this privately owned reserve as "wilderness." An evening venture to Addo National Elephant Park provided close-up encounters with management plans, elephants, koedoe antelope, and a glimpse of a black rhino. A flat tire on an open tour truck challenged the manager's resourcefulness and created an opportunity for demonstration of wild behavior as the African night crept closer and closer. Classroom activities resumed the next day with a new appreciation for each other and wild places.

Some issues surrounding wilderness protection are unique to the African continent, such as rehabilitation of park animal populations in Angola, protection of wilderness values on privately owned land in South Africa, and ownership disputes in Zimbabwe. The African trainees and trainers were also genuinely interested in learning about the role of humans in wilderness ecosystems and conservation monitoring efforts in the cold Russian far east, comanagement of tribal lands in northern British Columbia, habitat protection for Bengal tiger in India, and university programs in wilderness management in Brazil. Everyone in the group contributed something to help each other understand the values of wilderness worldwide.

One resolution adopted at the 7th WWC focused on recognizing the importance of such precongress training programs to prepare delegates for active participation in the WWC and to provide an opportunity for like-minded "wild" people to gather together in friendship and to revitalize energies for wilderness and the WWC.

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report can lead to effective stewardship and development of a NWPS. Recognizing the many good examples of wilderness stewardship that have been implemented over the past 38 years, we can adopt a set of principles for stewardship, implement actions that will shape the future for success, and work toward ensuring, especially under the direction of the secretaries of agriculture and the interior, the existence of a truly integrated NWPS. The result will be enhanced opportunities to ensure that the NWPS continues as a world treasure in the 21st Century.

PERRY J. BROWN, chair of the Wilderness Stewardship Panel for the Pinchot Institute for Conservation, is dean of the School of Forestry at the University of Montana. Dr. Brown can be reached by e-mail at pbrown@forestry.umt.edu.

Members of the Wilderness Stewardship Panel included Norman L. Christensen, Jr., Hanna J. Cortner, Thomas C. Kiernan, William H. Meadows, William Reffalt, Joseph L. Sax, George Siehl, Stewart Udall, and Deborah L. Williams, with staff support from James W. Giltmier.

Copies of the full report "Ensuring the Stewardship of the National Wilderness Preservation System" can be ordered from the Pinchot Institute for Conservation, 1616 P Street N.W., Washington, DC 20036, USA, or downloaded in PDF format from their website at www.pinchot.org/pic/gtp_pubs.htm.

School Of Lost Borders Establishes International "Wilderness Passage Rites" Degree

Over two decades The School of Lost Borders, based in Big Pine, California, USA, and founded by Dr. Steven Foster and Meredith Little, has trained over a thousand individuals in diverse skills related to wilderness vision questing and rites of passage in nature. Foster and Little, through Lost Borders Press, have developed seminal literature on the subject including: "The Trail to the Sacred Mountain"; "Book of the Vision Quest"; "The Roaring of the Sacred River"; "The Four Shields: The Initiatory Seasons of Human Nature"; and "The Vision Fast: Therapeutic Use of Wilderness for Self-Discovery" (*IJW* 1 (1): 27-29).

Lost Border's courses have increasingly drawn international participants and have been offered in other countries, as nature based psychology and practice have been recognized by the modern eco-therapy movement. As Foster and Little state, "When all is said and done, nature is the best teacher, and human nature can best be learned from nature."

Dr. Steven Foster and Meredith Little founded the School of Lost Borders in 1983 and have now created Lost Borders International to accredit a degree Major in International "Wilderness Passage Rites."

In response to the increasing demand for training in nature-based psychology and rites of passage, and to establish standards for training and practice, Lost Borders International (LBI) will now accredit, with a certificate of completion, all those who complete requirements and qualify for a degree in "wilderness passage rites." The proficiency criteria and requirements for the degree call for 240 contact hours of credit including: practical competencies in safety, wilderness first aid, environmental ethics, legal and liability issues; psychotherapeutic skills in personal crisis, spiritual emergencies, group dynamics, and life transition issues; eco-therapeutic models; council process; ritual and ceremony; and principles for working with personal stories.

For curricula and courses offered by LBI and affiliated training programs world wide, contact: Larkin Van Evera Roth, 34 Renz Rd., Mill Valley, CA 94941 E-mail: larkin@hotmail.com.

The Zambezi River

Wilderness and Tourism

BY SALLY WYNN

Introduction

The Zambezi Society is a Zimbabwe-based nongovernmental membership organization devoted to conserving the biodiversity and wilderness values of the Zambezi River in central-southern Africa, and to encouraging people to find ways of benefiting from the river's resources without destroying them. During the latter half of the 1990s, the society began to receive numerous complaints and concerns from various sources, implying that tourism was having a negative impact on the wilderness values of the Zambezi River. The reports were wide-ranging, including unchecked commercialization, ad hoc development, tree cutting, border violations, unauthorized road and camp building, noise pollution, littering and abuse of camping sites, and illicit tour and guide activities.

Sally Wynn on Lake Kariba. Photo by Dick Pitman.

The overall concern was that the special "wilderness value" of the Zambezi River was being eroded by inappropriate visitor behavior and tourism development. In order to provide visitor input, the society embarked in 1998 on a survey project aimed at reporting visitors' perceptions about wilderness values and importance in the Zambezi context as well as providing a visitor-based definition of the term *wilderness*.

Methodology

Visitor data collection was conducted using an on-site questionnaire approach in four main Zambezi valley tourism destinations on the Zimbabwean side of the river: Victoria Falls, Kariba/Matusadona National Park, Mana Pools National Park, and Kanyemba/Mavuradonha Wilderness Area. The visitor survey sample was selected to proportionally represent the range of tourism accommodation and activity choices in each location, and included people staying in hotels, safari lodges and camps, self-catering–national parks lodges, and on houseboats, or canoeing and camping.

Members of the Zambezi Society were asked to complete a questionnaire that they received by mail with no follow-up reminders.

Respondents for both surveys either completed a questionnaire individually or in a group response recorded on one survey. Both close-ended and open-ended questions were used to ensure that survey information was complete for each concept.

Study Results

A total of 473 surveys was completed by 1,209 visitors to the Zambezi River area. Of visitors surveyed, 44% of respondents were from Zimbabwe or the Zambezi region and 56% were international.

A total of 650 surveys were sent to Zambezi Society members and 160 questionnaires were completed and returned for a 25% response rate. Respondent surveys included input from 315 Zambezi Society members. Survey respondents were mainly (94%) from Zimbabwe.

Respondents to both surveys value Zambezi wilderness highly. The majority of visitor respondents reported that they felt it important that wilderness exists (98%), they valued wilderness personally (84%), and they came to the Zambezi valley for a wilderness experience (77%).

The responses to an open-ended question in both surveys provided a fairly comprehensive definition of the term *wilderness.* This was summarized from both surveys as a natural, undeveloped, and unpopulated landscape, which is scenically attractive or unusual, containing indigenous species, and inducing an emotional state of mind in which the visitor may

feel one or more of the following: in harmony with nature, freed from "civilization," inspired, refreshed, invigorated, challenged, stimulated, humbled, or spiritually fulfilled. A detailed list of the responses for this question on wilderness values is shown in Table 1.

The physical values of Zambezi wilderness reported as highly valued by respondents include:

Table 1—Respondents Reported Values for What Makes a Place Truly Wild

Values of a Truly Wild Place	Visitor Survey (n=435)	ZS Members (n=160)
NATURAL VALUES	**93%**	**97%**
Presence of/proximity to wild fauna and flora	42%	32%
Animals roaming free/in natural state	15%	12%
Unspoiled, natural ecosystems/in "original state"	27%	43%
Scenic/landscape beauty	6%	4%
Large scale/size landscapes/open spaces	3%	6%
UNDEVELOPED VALUES	**48%**	**66%**
Lack of development/infrastructure/settlement	21%	38%
Undeveloped areas deliberately set aside	2%	0%
Nature-sensitive/simple/uncommercial development only	17%	14%
Lack of fences/roads/electricity etc.	8%	14%
UNCROWDED VALUES	**49%**	**96%**
Few/no people/tourists	20%	46%
Limited access (e.g.vehicle restrictions/by foot only)	3%	3%
Lack of human activity (vehicles/pollution/litter)	12%	34%
Lack of human interference (controls/rules/signs)	12%	12%
Animals and people separated (guided tours only)	1%	0%
Small groups of visitors only	1%	1%
EMOTIONAL/SPIRITUAL VALUES	**21%**	**60%**
Silence (natural sounds only)	8%	25%
Feeling of being "at one with/in harmony with nature"	1%	3%
Peace/serenity	2%	5%
Solitude/seclusion	5%	13%
Remoteness/isolation	5%	8%
Feeling of humankind's insignificance	0%	6%
CHALLENGE/ADVENTURE VALUES	**5%**	**6%**
Presence of danger/feelings of fear	2%	1%
Rugged experience/sleeping rough/fending for oneself	1%	3%
Unpredictability/encountering the unexpected	2%	2%
CULTURAL ENCOUNTER VALUES	**2%**	**2%**
Opportunity to interact with local peoples/traditions	2%	2%
MANAGEMENT VALUES	**4%**	**3%**
Efficient, but unobtrusive management	2%	3%
High standards of guiding	1%	0%
Good standards of comfort/safety	1%	0%

- **natural/unspoiled landscapes—**includes wide open spaces and a feeling that little has changed in the landscape.
- **wild species—**animals roaming free and indigenous plants.
- **lack of people—**including the signs of their existence, such as pollution, litter, vehicles, and noise.
- **lack of development—**wilderness is seen as an escape from and a direct contrast to urban civilization.
- **lack of commercialization—**commercial tourism development and activities seem to be considered inappropriate to wilderness areas, whereas low-impact structures and activities are felt to be appropriate.

The nonphysical values of Zambezi wilderness, often neglected in tourism planning but particularly important to local and regional visitors and Zambezi Society members for whom wildlife is less of a novelty, include: peace, solitude, isolation, a feeling of harmony with nature, spiritual feelings, challenge, and adventure.

Eleven areas of the Zambezi River were identified by respondents as being important for wilderness appreciation. Relative satisfaction with the visitor experience in each area was expressed by respondents on a five-point scale of strongly agree to strongly disagree. The four areas given the highest satisfaction ratings by respondents were:

- **Mana Pools National Park/ Chewore Safari Area** (includes the Sapi Safari Area and Middle Zambezi).
- **Lake Kariba/Matusadona National Park** (away from Kariba town).
- **Chizarira National Park/ Mavuradonha Wilderness Area/ Zambezi** escarpment mountainous

Table 2—Respondents Reported What Detracts from a Place Feeling Truly Wild

From "Truly Wild"	Visitor Survey (n=420)	ZS Members (n=160)
PEOPLE/HUMAN ACTIVITIES	**70%**	**98%**
Too many people/mass tourism	38%	40%
Too many vehicles	10%	17%
Pollution/litter	11%	21%
Harassment by curio sellers/vendors/currency dealers	1%	1%
Unruly/insensitive visitors	5%	11%
Unruly/too many operators	4%	8%
Presence of security guards	1%	0%
NOISE	**37%**	**69%**
General noise (unspecified)	9%	29%
Aircraft (including helicopters & microlights)	7%	6%
Motorboats/boats/kapenta rigs	7%	10%
Cars/buses	6%	11%
Trains	1%	0%
Music/radios	5%	9%
Generators	1%	5%
Construction companies	1%	0%
DEVELOPMENT (GENERAL)	**48%**	**72%**
Too much development/infrastructure/settlement	29%	39%
Roads (especially tarred)	9%	17%
Fences	3%	4%
Lights/electricity pylons	4%	7%
Signs	1%	1%
Rules and regulations/restrictions/lack of spontaneity	2%	4%
COMMERCIAL TOURISM	**36%**	**58%**
Commercialization/big hotels/luxury lodges/tourist traps	26%	36%
Inappropriate/insensitive development/architecture	5%	10%
Inappropriate activities (e.g. discos/casinos/video games)	2%	8%
Presence of "tame wildife"/feeding of animals	2%	3%
Exploitation/extortion	1%	1%
IMPACTS ON NATURE	**10%**	**27%**
Ecosystem damage/tree cutting /off-road driving, etc.	3%	15%
Presence of exotic species	1%	1%
Lack of wild fauna and flora	3%	4%
Harassment of wild animals (e.g. spotlights/radio collars)	1%	2%
Lack of environmental protection/management	1%	4%
Poaching	1%	1%
OTHER DETRACTIONS	**2%**	**6%**
Poor management of tourism facilities	1%	1%
Presence of domestic animals	1%	4%
Lack of knowledgeable guides	0%	1%

terrain (different from the valley); this area is especially popular with local visitors.

- **Victoria Falls/Chirundu/Kanyemba** are relatively settled and urbanized areas, but have important wilderness areas nearby (e.g., Zambezi National Park near Victoria Falls).

Tourism activity choices that respondents reported as offering high wilderness value include: canoeing, boating on Lake Kariba, and safari lodges/bush camps that offer guided walks and "close encounter" bush experiences.

The visitor survey asked respondents to indicate from a checklist what activities they had undertaken in their visit to the Zambezi. The responses (and any additional activities added by respondents) were categorized into three groups, depending on their degree of impact on the environment: low, medium, and high. Of the 10 most popular activities undertaken by respondents, 7 fall within the low-impact category: bird-watching, walking, photography, fishing (from land), swimming/sunbathing, and picnicking. The remaining three most popular activities—sightseeing, game viewing, and camping—were in the medium category. High-impact activities such as motorboating, golf, river/lake cruises, and air flights were most often listed by visitors to Victoria Falls, Lake Kariba, and Kanyemba. None of the visitor activities that are special to Mana Pools National Park fall within the high-impact category and may partially explain why Mana received the highest satisfaction ratings from respondents for their wilderness experience.

The five main factors that respondents to both surveys reported detracted from their wilderness experience (Table 2) were:

- Too many people—unruly and insensitive behavior such as harassing wildlife with too many tour vehicles or noisy visitor behavior on river cruises and human-generated pollution and litter.
- Noise—human-generated sounds that are unnatural for the setting such as loud radios and music in campsites or mechanical noise such as fuel-powered electrical generators at lodges and camps, and motorized vehicles such as motorboats, motorbikes, trucks, and airplanes.
- Over development—respondents want to get away from the hustle and bustle of urban civilization and development, and they report some development detracts from the wilderness experience: too much infrastructure, too many roads, too many lights, and too many regulations.
- Commercial tourism—respondents report that low-key/low-impact infrastructure and activities designed to be nature-sensitive were acceptable in wilderness areas; however, some commercial tourism detracts from wilderness quality such as luxury high-rise hotels, insensitive architecture, advertising billboards on the edge of a World Heritage Site, commercial sales outlets at the entrance to the "rain forest" at Victoria Falls, "tame" wildlife, and exploitation and harassment by vendors and dealers.
- Impacts on nature—damage or alterations to ecosystems such as tree cutting, wildlife poaching, and the presence of nonnative species.

Respondents reported numerous specific detractions in certain areas as being particularly noticeable. For example, highly commercialized tourism areas such as Victoria Falls offer activities as part of package tours that have high impacts on wilderness (e.g., scenic flights, river cruises, motorboats, golf, and gambling casinos), and respondents reported these as detracting from the wilderness experience. Wilderness visitor satisfaction is lower in Victoria Falls than in other Zambezi River areas surveyed. Motorboating on the Zambian side of the river opposite Mana Pools National Park was mentioned by respondents as a detraction to the wilderness experience of visitors staying at Mana. The presence of houseboats and the noise of their engines and generators was mentioned as detracting from the wilderness quality of the Matusadona National Park, especially in the Kariba Eastern Basin.

Map of Zambezi River Wilderness Area and tourism visitor survey areas.

Tourism information and interpretative materials were reported as inadequate by respondents to the visitor survey. Most respondents (73%) were visiting the Zambezi River area independently and only 27% reported they were accompanied, on their trip, by a tour operator or guide. Some of those visiting the Zambezi River may only experience a very limited area, such as the 58% of respondents surveyed in Victoria Falls who were visiting no other destination. In the absence of educational information on wilderness, visitors to these areas may be missing the wilderness value that the Zambezi River offers.

Respondents visiting the wilder areas of the Zambezi River reported they were more ready to contribute toward wilderness conservation than those visiting more heavily developed and impacted areas. While less than half the respondents surveyed in Victoria Falls and 55% of those in Kariba were prepared, in principle, to contribute financially to maintaining wilderness areas, some 70% of respondents in Mana Pools National Park and in Zambezi Valley communal lands reported they were willing to make a financial contribution.

Discussion

These survey results highlight the importance of a "wilderness experience" to people visiting the Zambezi. This information supports the need to ensure that the river's wild values are conserved and to promote wilderness-sensitive tourism, especially in view of

Batoka Gorge. Photo by Dick Pitman.

Buffalo at Mana Pools. Photo by Dick Pitman.

the economic and investment benefits that international tourism brings to the region. However, these study results may be contrary to a general public perception in Africa that setting aside wild places for the enjoyment of tourists and wilderness enthusiasts is a luxury that Africans can ill afford. Current land use pressures and other development priorities tend to put wilderness awareness, conservation, and management very low on the public planning agenda and attempt to maximize short-term revenues at the expense of long-term sustainability.

The information from this study shows the need for an understanding of the vital link between wilderness-based tourism and Africa's wild areas. The Zambezi River with its tropical diversity, forests, birds, and large mammals has wilderness qualities that are unique in the southern African region and, unlike other wild tropical rivers in the world, the Zambezi is an attractive tourism destination, being relatively accessible and safe.

The decline of Zimbabwe's tourism industry as a result of recent political and economic turmoil has been a difficult situation with secondary economic effects in the southern region of Africa. In its efforts to recover, the tourism industry is now considering new approaches and undergoing a process of creative planning and review that might not otherwise have occurred in the bustle of a thriving tourism marketplace based on development. The Zambezi Society believes that this visitor research on wilderness is well timed to take advantage of the current climate of review.

Recommendations for Tourism

These study results, along with input from the Zambezi Society, suggest two general recommendations about marketing wilderness experiences and wilderness stewardship.

1. Market wilderness and promote Zambezi valley wilderness-based tourism by:
   - recognizing the importance of wilderness as a destination;
   - marketing a "Zambezi wilderness experience" with specific wilderness activities that have low environmental impacts;
   - targeting markets that specifically appreciate and value wilderness and wilderness experiences; and
   - providing more information and interpretation for visitors on the Zambezi and its wilderness ecosystem.
2. Safeguard wilderness by incorporating wilderness awareness and stewardship into all tourism planning and management in the Zambezi valley through:
   - incorporating consideration for the visitor's "wilderness experience" into tourism planning;
   - safeguarding wilderness quality by developing wilderness-sensitive guidelines for conservation and tourism practices;
   - ensuring that tourism activities and facilities in wilderness areas are appropriate and wilderness-sensitive;
   - establishing mechanisms for managing tourism development in wilderness areas through further research into acceptable/unacceptable visitor numbers and impacts;
   - monitoring of visitor satisfaction with the wilderness experience and compliance with wilderness stewardship guidelines;
   - improving the quality of the wilderness experience and conditions at more highly developed areas like Victoria Falls;
   - encouraging wilderness visitors to financially contribute to maintaining wilderness areas; and

The Zambezi River at Mana Pools. Photo by Sally Wynn.

Musengezi River, Mavuradonha Wilderness Area. Photo by Jane Hunt.

- establishing an association or organization to represent the interests of independent wilderness visitors (i.e., not on organized tours) to the Zambezi.

Study Utilization

The Zambezi Society recently presented these study findings on wilderness values to Zimbabwean tourism policy makers, planners, and operators, as well as to planning authorities, custodians, and managers of wild places along the Zambezi River. The potential for wilderness-focused and wilderness-sensitive tourism was highlighted for the Zambezi valley by suggesting that it is the most suitable, low-impact, sustainable option for Zambezi wild areas and that such a message be incorporated into related marketing strategies. However, the Zambezi Society expressed concern that inappropriate promotion could contribute to destroying the Zambezi River's unique wilderness qualities unless wilderness-sensitivity was incorporated into tourism planning, management, and practice of current and future Zambezi valley tourism.

The Zambezi Society was invited to contribute to the process of developing Zimbabwe's Tourism Master Plan, and they have provided input regarding wilderness values into the Canadian-funded Master Plan for Victoria Falls. Additionally, members of the Zambezi Society were sponsored by the WILD Foundation to attend and present a paper at the 7th World Wilderness Congress (WWC) in South Africa in November 2001, and a society-nominated candidate from Zimbabwe's National Parks Department was sponsored by the WILD Foundation to attended a weeklong Wilderness Management Training Program prior to the WWC.

The Zambezi Society is now developing a comprehensive wilderness management and stewardship program for the Zambezi River. The initiative promotes a transboundary approach between Zambia, Zimbabwe, and Mozambique by (1) extending research on perceptions about wilderness to local communities living in or adjacent to Zambezi tourism areas and to Zambezi visitors and communities in Zambia and Mozambique; (2) promoting Zambezi wilderness and educating visitors and communities about its values; (3) reinforcing wilderness management through the establishment of a wilderness management training program for managers, field officers, rangers, and guides in public, private, and community wildlands in the Zambezi region; (4) influencing tourism policy, management, and practice to take account of wilderness values by developing a set of guidelines for wilderness-sensitive management and tourism practice through a series of workshops with custodians, managers, and tourism practitioners operating in Zambezi valley wild areas; and (5) helping to establish more community-based wilderness areas to provide opportunities for local revenue generation through carefully managed, sustainable tourism initiatives.

SALLY WYNN is wilderness programme coordinator for the Zambezi Society in Harare, Zimbabwe, and can be contacted by e-mail at zambezi@mweb.co.zw or by visiting the website at www.zamsoc.org. A copy of the full report "The Zambezi River: Wilderness and Tourism" may be obtained from The Zambezi Society (US$10).

Exploring the Makarodzi River, Mavuradonha Wilderness Area. Photo by Jane Hunt.

One Year in the Arctic Wilderness

A Surgeon's Vision for Youth Expeditions

BY MARK EVANS

Editor's note: Mark Evans wrote this article in October 2001 when he was preparing for his departure to the Arctic. A six-week expedition to the Arctic in 1979 with British Schools Exploring Society (BSES) proved to be a truly life-changing experience for Mark. As a teacher of 14 years and ex-Outward Bound instructor in Fort William and Kenya, Mark is committed to the developmental education of young people. Mark has spent over two years of his life living in tents, during which time he has taken over 100 young people to witness and live in the Arctic wilderness. In addition to leading two three-month expeditions to Svalbard for BSES in 1992 and 1996, Mark has completed a 530 km (330 mile) crossing of the Greenland ice cap, crossed the uninhabited Melville Island in Canada's Northwest Territories, and skied to the magnetic North Pole.

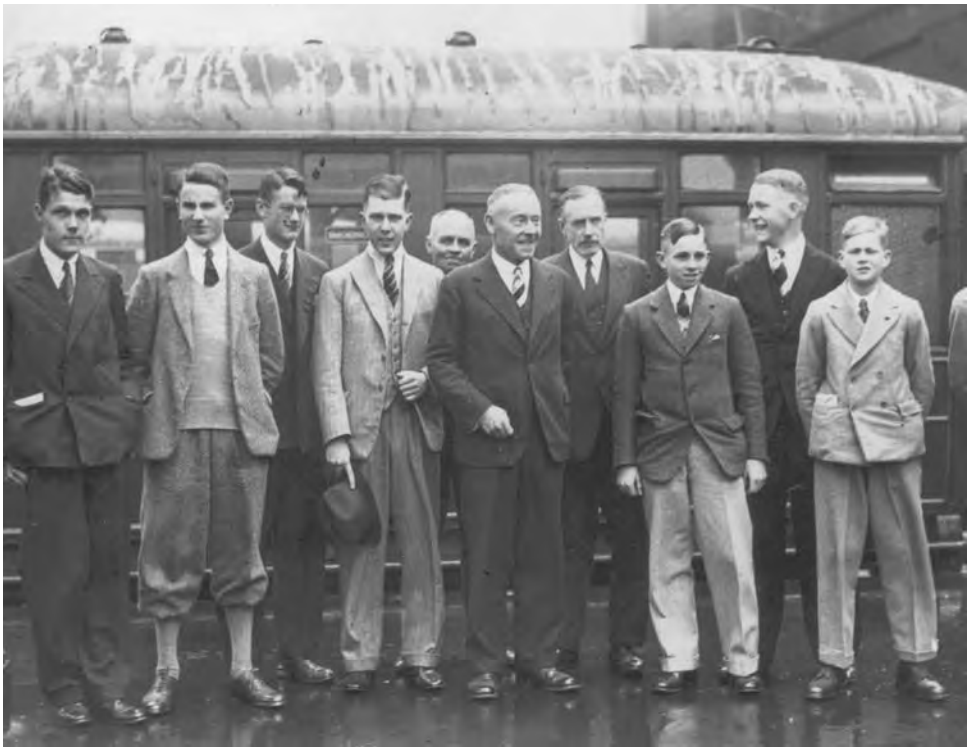
The Start of the British Schools Exploring Society

The auction room at Christies, off Pall Mall in London, was standing room only and all telephones were busy with international lines open for overseas collectors who were waiting for the bidding to begin. Ready for auction that afternoon were various items of polar memorabilia from Scott and Shackleton, to lesser-known explorers. Midway through the afternoon, a diary with scribbled notes and some black-and-white photographs, which told a little known story of incredible hardship, sold for an astonishing 93,950 pound sterling. The diary belonged to a man named Murray Levick, a man whose love of the wilderness included an unshakable belief in its educational value. He has seen over 5,000 young people undertake life-changing expeditions since 1932 when he founded a small educational charity known as the Public Schools Exploring Society. Now housed at the Royal Geographical Society in London, and operating as British Schools Exploring Society (BSES) Expeditions, Murray Levick's beloved charity has gone from strength to strength. Each summer, BSES puts over 100 young people into remote wilderness areas where, as Murray Levick would have wished, they undertake scientific research and adventure travel in challenging conditions.

The contents of the diary auctioned that day make interesting reading, and perhaps they give an insight into the extraordinary experience that motivated Murray Levick to create a charity that would subsequently mold the lives of thousands of young people to become ambassadors for wild places. Chosen by Scott to be a member of his Antarctic expedition, the surgeon Levick worked with a team of men known as the Northern Party, undertaking ornithological and geological research while Scott and his companions set off for the South Pole. Dropped off by the ship *Terra Nova,* with summer sledging clothes and seven weeks worth of rations, they ended up spending eight and a-half months of the Antarctic winter living in a cave hewn out of ice in which it was impossible to stand. Despite several attempts to reach them, heavy sea ice prevented the ship from returning. Their food was composed of seal and penguin, with occasional fresh fish from the gut of a seal, and was cooked on an improvised blubber stove. When the party emerged to the weak spring sunshine, they were covered in soot and extremely malnourished. The party marched 200 miles south to Scott's hut where

they discovered Scott and his companions had perished. Later, when asked to put the entire experience into words, the men replied that their feelings were inexpressible. The island, where they spent their enforced winter, bears that name today, Inexpressible Island.

During the early Public Schools Exploring Society expeditions led by Levick in the 1930s, he focused on trips to Newfoundland and Lapland. Today BSES travels further afield and, where possible, includes young people from the host country. Since 1990 BSES has sent expeditions to Botswana, Yukon, British Columbia, Montana, Zimbabwe, North Queensland, Namibia, Lesotho, and Morocco. However, BSES still retains links with the polar environment via expeditions to Greenland, Alaska, and Svalbard.



The first BSES expedition leaving London in the 1930s. Photo courtesy of Mark Evans.

Bring the Wilderness into Classrooms Worldwide

In 2001 Murray Levick's BSES program put its 100th expedition into the field, an expedition that has a strong focus on the value of wilderness through its IBM corporate-sponsored educational website. The aim of the program is to not only give those young people lucky enough to be selected for the expedition the chance to take part in a life-changing experience, but also through the use of modern technology to bring the wilderness debate into as many classrooms around the world as possible. Ironically, a year in the Arctic has its roots in the sands of Saudi Arabia, one of the few places in the world where it is still possible to drive for hundreds of kilometers without seeing a tire track or any sign of habitation. The purity and isolation of the sands of Saudi Arabia (the so-called Empty Quarter) have many parallels with the Arctic. In his poetic narrative *Arctic Dreams,* Barry Lopez wrote:

> *I looked out of the window, at the hundreds of square miles of ice that lay ahead of the bear. Even if it were possible to follow, I thought, how well could we put together what we saw? What would we miss out there? I remembered again the desert writing of Wilfred Thesiger, wandering the Empty Quarter with his Bedouin companions. The Arctic reminds one of the desert, not only because of the lack of moisture and the barren topography, but also because it puts a like strain on human life. It favours tough and practical people, people aware of the vaguest flutter of life in an environment that seems featureless and interminable to the untrained eye. People with a predators alertness for minutiae for revealing detail.*

The loss of "a native eye" among civilized cultures has been commented on by people as diverse as Vladimir Arseniev, writing about the Manchurian natives, and Laurens van der Post, writing about Kalahari desert people. Prompted by my travels in Arabia and in the Canadian Arctic, I approached IBM in Saudi Arabia with the challenge of using their expertise to help in the development of an educational website that would make young people think about the value of wild places. BSES agreed to my proposal for a one-year-long expedition to the Arctic islands of Svalbard off the north coast of Norway. Using the facilities at Outward Bound Ullswater in the United Kingdom, 10 young people—four girls and six boys aged between 18 and 19 years—were selected from those that applied to live in tents and, as Levick would have wished, undertake simple scientific research from August 2001 to late December 2001. Then until late March 2002 the base

Expedition base camp on Svalbard in October 2001. Photo by Mark Evans.

camp, comprising three tents, two large Malamute bear dogs, and a wind generator, will be manned by two staff until the daylight reappears. Late in March 2002, 24 young people will arrive in this cold white wilderness where they will live and travel until the ice breaks up in mid-July 2002 allowing boats to pick them up and return them to "civilization".

The result of IBM's sponsoring a website can be seen at www.arcticyear.org with twice weekly updates, via irridium satellite phone, from the young people. Lesson ideas for teachers and links to other wilderness websites are also available. The results of competitions and activities with a wilderness focus, put forward by the *Geographical* magazine and the John Muir Trust in the United Kingdom, will appear on the website while the young people are in the Arctic (August 23rd 2001 to July 19th 2002). Additionally, there is room for other organizations to post ideas, articles, and challenges on the website. These small groups of young people living in a wilderness environment for a period of four months also provides an opportunity for research by those interested in the educational impact and value of wilderness. In October 2001, the young people were busy building remote research camps (the science projects revolve around physiology, the aurora borealis, and seasonal affective disorder) as quickly as the rapidly decreasing hours of daylight would allow. The young people were given 24-hour solo periods for reflection in a simple, small shelter, equipped with a heating stove and rifle (in case of curious polar bears), where they were asked to consider and attempt to answer five questions on their attitudes toward the wilderness and to compare their lifestyles here with their lifestyles back in suburban United Kingdom. Their insights are posted on the website at www.arcticyear.org.

Anyone with an interest in contributing to the site, or using the venture for educational research, should contact the project manager, Sarah Butikofer (sarah_butikofer@uk.ibm.com) at IBM in the United Kingdom.

Students working at base camp during the October 2001 expedition. Photo by Mark Evans.

MARK EVANS is an expedition leader during the Arctic Year Expedition from August 2001 to July 2002. E-mail: mcearab@hotmail.com.

Announcements and Wilderness Calendar

COMPILED BY STEVE HOLLENHORST

Global Summit Will Highlight 2002 International Year of the Mountains

The United Nations General Assembly declared the year 2002 as the International Year of Mountains (IYM). During 2002, people will participate all over the world in events to celebrate mountains and discuss ways to promote their conservation and sustainable development. The Global Mountain Summit, to be held in Bishkek, Kyrgyzstan from October 29 through November 1, 2002, will be the feature event of the IYM, drawing together the ideas and recommendations, from all levels and sectors of society, generated by previous events into proposals for concrete action. The decision to hold a summit was made in response to a proposal by the government of the Republic of Kyrgyzstan, and builds on the 1992 Earth Summit's Chapter 13 of Agenda 21 that focuses on mountain issues. For more on the summit, including themes, program information, and registration materials, visit the summit website at **www.mediantics.com/mountainsummit/.** For more information on all 2002 IYM events, see the website at **www.mountains2002.org/.**

Alberta's Bighorn Wildland off the Map—Protection Weakened

The Alberta government is no longer honoring the 4,000 sq km Bighorn Wildland, designated by Minister Don Sparrow in 1986. The government has begun erasing the Wildland's boundaries from official maps, including new printings of Alberta road maps. During the government's Special Places process, the Public Advisory Committee recommended that the Bighorn be formally designated as a wildland park by the end of 1994. The local Special Places Committee in Rocky Mountain House, however, did not recommend the Bighorn Wildland for protection. They believed the Bighorn Wildland was already protected. The move will allow oil and gas drilling in some of Alberta's most pristine wilderness. The spectacular alpine and foothills lands of the Bighorn were once part of the national parks system. The Bighorn land base includes 3,677 sq km designated as Prime Protection and 268 sq km zoned as Critical Wildlife Habitat. **Source: Alberta Wilderness Association http://AlbertaWilderness.ca.**

Resort Owners Vow to Fight Ruling to Break Wilderness Camps

Three Salmon River outfitters in Idaho plan to appeal a decision by the Forest Service (FS) requiring removal of "camps" they operate on a stretch of river that runs through the Frank Church-River of No Return Wilderness. Recently a federal judge ruled that the outfitters' lodges were illegal and only tent camps were allowed under the Wild and Scenic Rivers Act and the 1980 Central Idaho Wilderness Act. The camps existed before the Central Idaho Wilderness Act was passed in 1980. They have operated since the 1930s through special use permits issued by the FS. The three outfitters claim that Senator Frank Church, who is not alive to clarify his intent, meant for the river camps to stay. But Bill Worf of Wilderness Watch said the existing structures were built illegally. For more information, see the court decision at **http://www.cand.uscourts.gov/** (go to: Recent Orders > LaPorte > High Sierra Hikers Ass'n, et al. v. Powell et al., Case # C-00-1239-EDL).

Submit announcements and short news articles to STEVE HOLLENHORST, *IJW* Wilderness Digest editor. E-mail: stevenh@uidaho.edu.

Federal Judge Reduces Commercial Uses in Two High Sierra Wildernesses

On November 1, a federal judge in the Northern District of California ordered a 20% reduction in recreational use by commercial pack stations within portions of California's High Sierra. The federal injunction applies to the Ansel Adams and John Muir Wildernesses, in which the Forest Service (FS) has identified problem areas where "current use is affecting resource quality." The federal injunction came as a result of an earlier June 5 ruling by the same judge, Elizabeth LaPorte, that the FS had violated the National Environmental Policy Act (NEPA) by issuing "special use permits" to commercial pack outfits without first completing an analysis of the environmental impacts. Both rulings were issued in response to a lawsuit filed by the High Sierra Hikers Association, Wilderness Watch, and FS Employees for Environmental Ethics. LaPorte also ordered the FS to evaluate, for the first time, the cumulative environmental impacts associated with the many pack stations operating in the two wildernesses. The agency will have until 2005 to analyze the impacts of the numbers of stock animals used by commercial outfits, limits on group size, trail suitability for various types of use, and other factors that the FS has not previously evaluated in an open process with full public participation. In her ruling, LaPorte explained that "the pack stations [with only two exceptions] have no valid authorization to operate in the wilderness areas until compliance with NEPA is achieved." But her ruling allows the outfits to continue their operations, albeit at reduced levels and subject to several new court-ordered restrictions, until the FS completes the required studies. To ensure FS compliance with NEPA, LaPorte also ordered the FS to follow up on the cumulative impacts studies by preparing site-specific environmental analyses for each individual pack station by 2006. The court's ruling can be viewed at **http://www.cand.uscourts.gov/** (go to: Recent Orders > LaPorte > High Sierra Hikers Ass'n, et al. v. Powell et al., Case # C-00-1239-EDL).

New Bibliography: Environmental Change and Its Impact on Species/Ecosystems/Agriculture

A new bibliography is now available on global climate change (defined herein as global warming or ozone depletion) and its impacts on flora and fauna species and critical supporting ecosystems. Compiled by William C.G. Burns of the American Society of International Law, Wildlife Interest Group, the work includes 3,300 citations from peer-reviewed and gray literature (such as journal articles, newspaper articles, reports, and materials on the Internet). Additional citations will be added every two months. Ultimately, each entry will be categorized in a variety of ways, permitting key word searches and compilations by subject, region, or author. To access the bibliography, go to the American Society of International Law, Wildlife Interest Group website at **http://eelink.net/~asilwildlife/bib.shtml.**

Announcing the World Parks Congress 2003

The 5th World Congress on Protected Areas (WCPA) will take place in Durban, South Africa, from Monday September 8 to Wednesday September 17, 2003. Only four previous World Parks Congresses have been held, beginning with the first in Seattle, USA, in 1962. This is the first World Parks Congress to be held in Africa. The congress will build on new conservation directions that have emerged from IUCN's World Conservation Congress, held in Amman, Jordan, in October 2000. The Amman congress focused on the relationship between environment and security, which links strongly with the theme of the 5th World Parks Congress—"Benefits Beyond Boundaries." The congress operates without official delegations and is expected to attract around 2,000 individually invited participants. The International Planning Committee will oversee the invitation process and will look to invite those participants who can contribute most to influence outcomes. The invitation process will draw on the expertise and knowledge in the WCPA network to ensure the most appropriate people attend. Most participants will be expected to fund their own attendance at the congress, however, a number will be sponsored to attend. For more information on the congress, visit IUCN WCPA website at **http://www.wcpa.iucn.org.**

Gammon Ranges National Park to be Fully Protected from Future Mining Threats

The South Australian state government has moved to reproclaim the Gammon Ranges National Park to prevent any mining in the park. The announcement followed a recent decision by the Supreme Court dismissing the mining company's legal challenge to the decision to block the mine proposal. For more information, visit the The Wilderness Society (Australia) website at **http://www.wilderness.org.au/.**

Squamish Nation Releases Draft Land Use Plan

The recently released Squamish Nation draft land use plan calls for the establishment of four "Wild Spirit Places" covering 8.5% of their traditional territory. Located in the southwest corner of British Columbia, the Squamish Nation Territory includes some of BC's most contentious land use conflict zones, including the old growth forests of the Elaho Valley—the site of several environmental protests and a violent attack on protesters by loggers. The "Wild Spirit Places" would be off-limits to industrial logging or other commercial developments and managed by the Squamish Nation. The Squamish Nation Land use plan can be viewed on the Squamish Nation website **www.squamish.net.**

University of Montana and University of Natal Offer New Master's Degree in Protected Area Management

Based on a relationship developed during the 6th World Wilderness Congress in Bangalore, India, the University of Natal, South Africa, and the University of Montana, USA, will be launching a joint master's degree in protected area management this coming July. The program provides a one-year master's degree, targeting professionals in wilderness, park, or wildlife reserve management. The program includes one semester of coursework with the remaining time applied to either a field-based internship or a research project. The material and activity will have a southern African context, but will welcome students with a global perspective. The Universities are working together with the U.S.D.A. Forest Service, South African National Parks, KwaZulu Natal-Wildlife, and the Wilderness Action Group to develop supporting research programs that facilitate student, faculty, and managerial exchange. A symposium at the 7th World Wilderness Congress in Port Elizabeth, South Africa, began the process of compiling resource materials in a southern Africa context in support of this program. For more information contact Wayne A. Freimund, Director, Wilderness Institute, The University of Montana at waf@forestry.umt.edu or Charles Breen, Coordinator, Protected Area Management Program, The Centre for Environment and Development, The University of Natal at breen@mweb.co.za. For more information, visit the UM website at **www.forestry.umt.edu/wi/Africa.**

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use distribution and participation by different user groups. Research conducted at regional scales would help managers make decisions for their individual wildernesses that optimize the benefits provided by a regional system of parks and wildernesses. Finally, more in-depth research is needed on the nature of the wilderness experience and how it is affected by visitor density.

REFERENCES

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Letters to the Editor

Wilderness Celebrates 75 Years

Dear IJW editor,

A flagship wilderness area recently celebrated a major milestone. The area we now call the Boundary Waters Canoe Area Wilderness (BWCAW) received its first wilderness designation 75 years ago last fall. This move, decades before the 1964 Wilderness Act established a National Wilderness Preservation System that now includes the BWCA, came early in our nation's wilderness movement and began an effort to protect Minnesota's spectacular lakeland wilderness that continues to this day.

On September 17, 1926, U.S. Agriculture Secretary William M. Jardine issued his wilderness and road policy for Superior National Forest. It ended the worst segments of an ambitious road-building plan that hoped to push "a road to every lake" in the national forest and gave the nation one of its earliest designated wildernesses. It was the first wilderness to be designated by an administrative official as high as the secretary of agriculture.

The Jardine policy recognized "the exceptional value of large portions of the Superior National Forest, containing its principal lakes and waterways, for the propagation of fish and game, for canoe travel, and for affording recreational opportunities to those who seek and enjoy wilderness conditions. It will be the policy of this Department to retain as much as possible of the land which has recreational opportunities of this nature as wilderness."

To end the threat of road building in the Superior wilderness, Jardine declared that "no roads will be built as far as the Forest Service can control the situation." To emphasize this point, Jardine promised that "the Forest Service will leave no less than 1,000 square miles of the best canoe country in the Superior without roads of any character."

Jardine's wilderness policy for the Superior came just two years after the nation's first wilderness had been established. In 1924, U.S. Forest Service (FS) forester Aldo Leopold had persuaded his agency to set aside a wilderness area in the Gila National Forest in New Mexico. The Superior's formal wilderness designation made it only the second wilderness in the nation.

The road-building plan for the Superior was debated from 1923 to 1926 and consisted of several major road segments. The Ely-Buyck road (the Echo Trail) would travel northwest from Ely through Buyck; the Gunflint Trail, then a very primitive road, would be upgraded to link Grand Marais and Gunflint Lake; and the Ely-Gunflint Road would follow the route of the current Fernberg Road east of Ely and then the Kekekabic Hiking Trail east across the wilderness to Gunflint Lake. From these main roads, shorter spur roads would run from the Ely-Buyck road north to Lac La Croix, north to Loon Lake and south to Trout Lake; from the Sawbill Trail to Brule Lake; and from Gunflint Lake to Seagull Lake.

The Izaak Walton League of America and the Superior National Forest Recreation Association led conservationists in opposing the road plan. They suggested instead that the entire Superior National Forest be designated as wilderness. Aldo Leopold also entered the fray by the fall of 1926, having moved to Wisconsin from the Southwest. Because the Superior National Forest did not yet include large portions of the current BWCA (such as the Basswood-Snowbank-Kekekabic-Ottertrack country) and because the existing national forest contained many private inholdings, Leopold felt that the wilderness plan proposed by the conservationists was impractical until the FS had acquired more lands.

Secretary Jardine issued his road and wilderness policy to respond to these competing issues. He expressly permitted the construction of some roads, but ruled against most of the Ely-to-Gunflint road across the heart of the BWCA, as well as some of the shorter spur roads to lakes now within the wilderness. And Jardine did see the wisdom of designating 1,000 square miles of the best canoe country as wilderness, initially called the Superior Wilderness Area.

What does Jardine's wilderness designation three-quarters of a century ago mean for us today? Incomplete though it was by today's standards, and imperfectly implemented, Jardine's designation was nevertheless a crucial first step in wilderness protection for

the Boundary Waters. All subsequent efforts to protect the area were built on this first step.

Coming from Calvin Coolidge's administration, arguably one of the most conservative ever, the Jardine policy reminds us that wilderness protection cuts across ideological perspectives and party lines. Conservatives and liberals, Democrats and Republicans have all supported wilderness protections for the BWCA through the decades.

Coming so early in the evolution of the wilderness concept nationally, Jardine's designation also placed the Boundary Waters in the forefront of the national wilderness movement, a position of prominence that has continued to this day.

Despite 75 years of wilderness designations and policies, much work remains before us to more fully protect the BWCAW for future generations. Motorboats still whine on more than a fifth of the wilderness water area, jeeps and all-terrain vehicles still drive across wilderness portage trails, ecological processes like fire or forest succession too often can't operate freely or naturally, airborne pollutants such as mercury contaminate the area's lakes, the sheer number of us who visit the area often threatens the area's wilderness character, and global warming may bring dramatic changes to the area.

Yet the effort to tackle these challenges is well worth it, to pass on unimpaired to our children and to the world a wilderness treasure beyond price. It's a challenge that William Jardine, gazing out at us from 75 years in the past, would probably urge us to meet.

Kevin Proescholdt
KEVIN PROESCHOLDT is a wilderness policy expert and coauthor of *Troubled Waters: The Fight for the Boundary Waters Canoe Area Wilderness.* E-mail: kevinandjean@qwest.net.

Book Reviews

Plundered Promise: Capitalism, Politics and the Fate of the Federal Lands

By Richard Behan.
2001. Island Press, Washington, D.C., and Covelo, California. 240 pp., $29.95 (cloth).

Richard Behan is not one to mince words: *Plundered Promise* is a forceful, uncompromising critique of the role capitalism and politics play in the mismanagement of federal lands in the United States. Behan, a senior resource management scholar, places the blame squarely on economic and political systems that he suggests have "overshot" their traditional roles. Originally, corporations and governments served society, but now, states Behan, the tables have turned: "The economic structure of corporate capitalism has captured the politics of governance, and American people have become subservient to their economic and politic institutions" (p. 160).

Behan's analysis concentrates on the past and present relationship between corporations, federal politics, and interest groups in public land management. In identifying the sources of current management problems, he highlights the roles of the U.S. Constitution and early federal legislation (1788–1891), the rise of corporate capitalism and mass consumption/marketing (1891–1934), the birth of professional management and multiple use philosophies (1934–1976), and the "era of overshoot" (1976 to the present), when he believes both corporate and political institutions became corrupted and began to feed off a disempowered public.

As a result of this increased power and corruption, Behan suggests that federal lands have come to serve private (i.e., corporate) rather than public interests. By the mid 1900s, corporate "users of all the federal lands had become hugely indifferent about ownership. You don't have to own the land, they had discovered, to hijack the timber, forage, water and minerals, to dump the external costs on society at large, and to be subsidized in the process" (p. 116). The book primarily focuses on forest management on federal lands, with wilderness, water-related, forage, and mining activities receiving less scrutiny. It is unfortunate that wilderness management receives relatively little attention, although his provocative thesis of "institutional overshoot" can be applied to all categories of federal lands management.

Plundered Promise concludes by making a strong case for limiting corporate power, decentralizing decision making and management, and allowing fair-minded, educated local residents (do they still exist in contemporary society?) and resource managers to put the "public" back in public lands: "Shifting the emphasis

on the federal lands from private goods to public values has got to be worked out by neighbors and their guests in strongly localized dialogues, not by phony presidential pandering and certainly not by statute" (p. 227).

As the above quotes suggest, this is a blistering attack on the management of federal lands, with an analysis that is scholarly but eminently readable, thanks in part to Behan's palpable sense of outrage and acerbic wit, both of which characterize the book. His analysis of the (mis)management of federal lands and the potential solutions he provides are almost as wide-ranging as they are provocative. Given the state of the federal lands and the quality and strength of Behan's arguments, this book demands a wide readership.

Review by JOHN SHULTIS, *IJW* book review editor. E-mail: shultis@unbc.ca.

The World and the Wild: Expanding Wilderness Conservation Beyond Its American Roots

Edited by David Rothenberg and Marta Ulvaeus.
2001. University of Arizona Press, Tucson. 250 pp., $19.95 (paper)

Why hasn't the wilderness concept spread more widely throughout the world? Each of the 18 chapters in this anthology wrestle with the philosophical and (to a lesser extent) practical issues created by the transplanting of the wilderness concept from the United States to so-called "developing" nations. Several common issues are discussed in each chapter: Should the concept of wilderness separate humans and nature? Should we combine concerns about wilderness preservation with social equity (e.g., poverty reduction) issues? What should be the role of local and/or indigenous peoples in managing and maintaining wilderness? And what are the impacts of acknowledging that wilderness is essentially a cultural construct developed in the West? As in most anthologies, there is some repetition of ideas and concepts, but part of the joy of reading such a collection is to see how each author reacts to these challenging issues. Editors Rothenberg and Ulvaeus have done an excellent job in ensuring that most of the readings relate to these common issues and choosing well-written selections.

The stated purpose of the book was to "reinvigorate the effort to understand, reveal, and save wilderness beyond the usual futile polarities" created by such authors as William Cronon and J. Baird Callicott. These authors have recently set the "cat amongst the pigeons" by challenging the cultural appropriateness of the wilderness concept, suggesting it perpetuates a naive and misguided duality of humanity and nature. Most of the authors in the book address the arguments of Cronon and Callicott, but use different approaches to reach their varied conclusions: some directly wrestle with issues, others illuminate them through indirect stories or case studies; some are strident in tone, others gentle.

There is much anguish in these pages, with most of the authors collectively—and with great humility—philosophically "wringing their hands" over these difficult issues and coming to different conclusions. Some authors believe there is no place for people in wilderness, but most call for an expanded role of culture and management in wilderness areas located in developing nations, and note the importance of so-called "peasant" or "social" ecology—active land management by local and/or indigenous peoples—in wilderness. Perhaps the best consensus is expressed by Edward Whitesell: "In short, international preservation politics must be approached with humility and respect for both other peoples and other (nonhuman) members of the natural community of life. The many inadequacies of current approaches to wilderness preservation, at home and abroad, demand innovation and the sharing of ideas of the wild among all people who would resist the domestication of the earth" (p. 197).

The World and the Wild addresses one of the most pervasive and challenging issues in contemporary wilderness preservation: What is the role of people in maintaining remnants of the wild, particularly in the developing world? It performs a great service in providing a well-chosen range of voices to help guide the reader through this incredibly complex issue.

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