INTERNATIONAL

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Front cover photo of Asian elephant by Dr. Raman Sukumar.
Photo of Montane Massif in northern Pakistan by Stephen Fuller.

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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Submissions: Contributions pertinent to wilderness worldwide are solicited, including articles on wilderness planning, management, and allocation strategies; wilderness education, including descriptions of key programs using wilderness for personal growth, therapy, and environmental education; wilderness-related science and research from all disciplines addressing physical, biological, and social aspects of wilderness; and international perspectives describing wilderness worldwide. Articles, commentaries, letters to the editor, photos, book reviews, announcements, and information for the wilderness digest are encouraged. A complete list of manuscript submission guidelines is available from the managing editor.

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THE WORLD WILDERNESS CONGRESS

An International Forum for Conservation Information and Action

By John C. Hendee, Managing Editor

THE WORLD WILDERNESS CONGRESS (WWC) will meet in a developing nation for the first time when the 6th WWC meets in Bangalore, India, in October 1997. Since 1977, the congresses have met periodically: in South Africa 1977; Australia 1981; Scotland 1983; the United States 1987; and Norway 1993.

Each congress has been unique and imbued with the working style and culture of the host country. Timely global matters and important conservation issues of the adjacent region are the focus, especially as they concern wildlands. Although cooperation is emphasized, sometimes tension is inevitable. For example, the 5th WWC in Norway convened around a theme of sustainability issues in the polar regions. Not surprisingly, whaling and fisheries in polar seas and nature conservation in nearby Russia were important but sensitive topics. The 6th congress will also bring important issues to the fore, such as the means by which developing nations can increase their environmental protection efforts, including wilderness, which is not easy when faced with the fundamental challenges of population growth and poverty.

The congresses were the brainchild of South African conservationist Dr. Ian Player, and his longtime Zulu friend, guide, and mentor, Magqubu Ntombela, who suggested that diverse interests surrounding wilderness protection could only be resolved through an *Indaba*—a great gathering of all the interested and involved people. This vision continues to guide the congresses, which provide a forum for all conservation perspectives, including science, education, resource management, and cultural, literary, and artistic expressions, as well as citizen concerns and political views.

Article author and *IJW* managing editor John Hendee.

Wilderness in the literal sense is not the only focus of the congresses, as associated environmental concerns are also heard. But wilderness stands as a symbol of what might be lost, and what might be saved, by countries wanting to provide protection for the most natural of their remaining lands. Through participating in the last three congresses, I've been inspired and encouraged by the opportunity to hear the views of people from so many countries, and working toward effective solutions with them to address important issues and concerns. A collective sense of commitment and the spirit of positive action pervade each congress.

Read about the 6th WWC in this issue of *IJW,* and I hope you choose to be a delegate. Those interested in the events and views expressed at the previous congresses can order proceedings from The WILD Foundation at The International Center for Earth Concerns, 2162 Baldwin Road, Ojai, CA 93023, USA. Telephone: (805) 649-3535; fax: (805) 649-1757. **IJW**

The Bob Marshall Great Wilderness

The Adirondack Council, a group dedicated to the preservation and enhancement of New York State's Adirondack Park, has proposed the creation of "The Bob Marshall Great Wilderness" within the existing six-million-acre park. This park is a complex mix of public and private land. The public land (42%) has been protected since 1894 by a "forever wild" clause in the state constitution. The clause forbids the sale or lease of any public land and the removal or destruction of timber.

The park currently contains 16 distinct wilderness areas, ranging in size from 7,000 to 220,000 acres. These areas contain no human-made structures or roads and are characterized by solitude for visitors and protection of sensitive wildlife. The Bob Marshall Great Wilderness would incorporate existing Adirondack Wilderness and private lands. This would include 408,000 acres of lakes, rivers, and forest, making it the largest wilderness in the eastern United States north of the Everglades. The Adirondack Council is encouraging the state to purchase private lands within the park as they become available from willing sellers.

The Adirondack Council is an 18,000 member nonprofit organization dedicated to enhancing the natural character of the Adirondack Park through research, education, advocacy, and legal action. For more information, contact The Adirondack Council at Church Street, P.O. Box d-2, Elizabethtown, NY 12932-0640, USA. Telephone: (518) 873-2240.

Material for this article came from *A Gift of Wildness: The Bob Marshall Great Wilderness,* by Michael G. DiNunzio. The Adirondack Council, 1992. (Summary provided by Greg Friese.)

SOUL OF THE WILDERNESS

Wilderness Wisdom to Save Our Souls—and the Planet

By Tom Pinkson

Article author Tom Pinkson.

A FRIEND OF MINE, a philosopher of sorts, remarks occasionally on the absurdity of NASA's attempts through sophisticated monitoring equipment to pick up signs of transmissions from intelligent beings from other galaxies. Isn't it ironic, he states, that we spend all these millions of dollars trying to find weak transmissions from somewhere far off in space, when there is a field of intelligence that we are actually embedded within and that surrounds us at all times. A "seamless web," as social scientist Gregory Bateson, author of *Steps to an Ecology of Mind* (1972), calls it. An interactive wave system of multilevel, multidimensional connectedness that constitutes a field of consciousness that is to be found in the water, vegetation, earth, mountains, and the very air that we breath for our lives. Indigenous peoples worldwide have believed in it for 40,000 years, for understanding it guided their lives—and such beliefs evolved and survived based on their success. This is the living world of "Gaian Mind" that regulates and sustains our planet in a homeostatic balance through the billions of years of its existence.

It is precisely this Gaian wisdom-nature from which we are so alienated that results in our looking out into space for signs of intelligent life when it abounds within and around in all directions in profundity and magnificence. We fail to see how we are imprisoned in linguistically based boundaries of yours and mine, inside and out, predicated on identification of ego-self as differentiated from environment and field—the sea in which we live. These boundaries are socialized into us by conditioning so successful that we are unaware of the distortions through which we perceive so-called reality. These distortions lead to the values of Western civilization that are polluting the world—white male Christian dominance; private property; corporate capitalism emphasizing profits and economic efficiency over people and life on this planet; violence and arrogance toward indigenous peoples and peoples of color; valuing the material world over the inner world; and the rational, versus the intuitive, way of knowing via dreams, vision, and receptive, resonant attunement with the living mind, soul, and spirit of nature. These beliefs and their attendant behavior patterns have all arisen as a result of establishing and maintaining our identification of self as separate from this field of nonhuman intelligence in which we are embedded. As a result we have lost our soul and don't even know it. The boat is sinking and, like Nero fiddling as Rome burned, we are caught up in the show.

Pockets of Indigenous Wisdom

The broader view of nature is still alive in a few remnant indigenous cultures. For example, the knowledge of surviving elders among tribal people such as Native American Huichol elders, a shamanic people of north-central Mexico with whom I have worked since 1981, still follow their traditional ways dating back to the Paleolithic past. They say we are *perdido,* "lost," that we have forgotten that Earth is alive, that all life is sacred, and that it consists of an extended kinship involving mutual, reciprocal responsibility to care for one another and maintain balance and harmony of the whole. They believe in the broader fields of consciousness of nature and communicate with it through belief, ritual, ceremony, and other cultural practices.

In modern, developed cultures we have forgotten our oneness with nature, our ultimate dependence on nature's rhythms and cycles, and so treat it, and ourselves, as separate and removed from one another. Our very designation of undeveloped land, of nature as "out there," as "wild," as "wilderness," is indicative of the depth of our alienation from that which we are.

Yet it is "out there" that we find our best teacher for reconciling our relationship with nature, because it is there that we most easily discover that we are not separate from it, that we are part and parcel of its—our—very existence. It is in the undeveloped, "wild," natural world, where the only input is what nature creates, that we can experience on all levels of our being the encompassing dance of inter-relatedness. On the summits, in the desert, the forest, the ocean, we most easily can see we are but a small part of the whole, compared to the vast cyclic rhythms of creation. Ego is humbled, boundaries begin to break down, and we begin to understand that we are nature, united with all of existence and no

more important in the great scheme of things than a tree, a cloud, a rock, an animal, or a plant.

Each has its portion, which is its essence or soul, of the larger presence, Gaian Mind, or spirit, if you will. For the Lakotah People it is "Wakan Tanka," Great Mystery. The soul is the part of the whole present in the specific: the specific person, flower, tree, rock, animal, valley, mountain range, ecosystem, etc. People throughout history have gone into the wilds of the natural world— the wilderness as we call it— to attune, commune, discover, reconnect with, and cultivate the relationship of their deeper being (i.e., soul) with the greater entity of numinous mystery. It is present, always, everywhere, yet usually blocked from our awareness due to our alienation and atrophied senses with which to know it. But many who enter the sanctuary of wilderness have sensed the broader connections that were reality to most humans for 40,000 years or more.

From Wilderness Comes Wisdom

Wilderness is the ultimate setting for experiential learning to rekindle our alienated awareness. For the laws of nature reveal themselves to anyone who takes the time to open to their teachings. Reflective inquiry, receptivity, patience, respect, and attentive mindfulness serve as a key to open the door to "wilderness wisdom" and its compelling lessons for strategic stewardship and sustaining healthy biodiversity on our planet. The historical prevalence of transcultural vision questing and emergence of wilderness experience programs worldwide are evidence of the pragmatic effectiveness of humanity's research and design to discover the deeper truths of who we are, where we came from, why we are here, and what are the wisest choices on how to live a good life. Paying attention to nature and living in accordance with its dictates pays off. It provides a win-win outcome.

The spirit of nature speaks to us, not in human language of course, but it does nevertheless communicate. I see

this every time I take a group of people out into a wilderness setting for a period of time. Over the days and nights of living in accordance with natural rhythms, people gradually become entrained to them and get more relaxed, more peaceful, slower, more sane, more open, more visual, enjoy just being, become kinder—the list goes on. It is so interesting to notice that as it comes time to hike back out and we get closer and closer to the signs of civilization, the group starts to get tighter again and complains about noise, too many people, and the obtrusiveness of so much technology. I think they are starting to go through withdrawal symptoms from the natural state of biological entrainment they experienced in the wilderness environment. In the wilderness the truths of birth and death, balance and harmony, the interconnectedness of all beings, and the sheer miracle of ongoing creation speak out their messages to all our senses, our deeper psyche, and to our very soul. The dialogue takes place, and sometimes we are not conscious of its impact until it is disturbed (e.g., on the hike back out), and the anticipation of re-entering western Eurocentric culture.

Twenty-four years of diverse wilderness experience has imbued me with an open ear, and I want to close by offering a voice, one that comes out of listening in wild places ranging from cold, star-filled nights on high peaks, to steaming hot jungles of the Amazon, to voices that cannot speak directly through the cultural artifact of human language. The voice says simply,

On the summits, in the desert, the forest, the ocean, we most easily can see we are but a small part of the whole, compared to the vast cyclic rhythms of creation.

> *Hear me Two Leggeds, I speak the truth. You are my children, but so too is all that live. You must relearn to live in respectful harmony with all your relations or by your own hand, not mine, you will destroy your only home and take many others with you. Hear me Two Leggeds, come out here to what*

Please see **PINKSON** *on page 48*

INDIA

A Wildlands and Recreation Overview

By Krishnan Kutty

INDIA IS A DIVERSE NATION. Though slightly smaller than the United States, it has 15 different major languages (with 200 to 300 dialects), each with its own traditions, music, and fine art. With a population estimated at 930 million (with one billion forecast within the next 10 years), India also has a continuing struggle to eliminate poverty. However, as a result of the Green Revolution in the 1970s, the incidence of starvation has been considerably reduced and, in some cases, India is a net exporter of food.

Favored with a unique geographical location and varied land forms, India is the home for about one third of known life-forms in the world. There are over 500 species of mammals, and the checklist of birds includes over 2,060 species that are truly Indian. India also boasts the 1,800-mile Himalayan range, a 1,600-mile coastline, deserts, rivers, and a culture and religion that is more than 2,000 years old.

As in Africa and elsewhere, India's natural resources have been greatly affected by colonization, especially in the areas of ownership and management. During British rule (the British Raj ended in 1947), all forests, wildlife, and other natural resources were the property of the Crown, effectively removing any meaningful involvement by rural people in their management. Though it has taken over 40 years and is yet evolving, one of the most significant accomplishments since independence has been the reinvolvement of rural people in the stewardship of wildland, natural, and reforested areas. For example, the concept of "social forestry" originated in India, encouraging and training villagers to maintain and manage woodlots and forests, thereby saving wildland resources and increasing watershed. Today, NGOs, like the National Tree Growers Co-operative Federation in northern India, successfully work with the village and state authorities to transfer the "ownership" back to the village people. In addition, since 1980, the famous Chipko Movement (saving Himalayan forests in the north) and the Silent Valley Campaign Campaign (protecting rainforest in the south) were citizen-led movements to maintain wildland areas for local and cultural uses.

At the national level, environmental legislation has also constantly progressed and is more characterized by protectionism than in other developing nations. Though lacking specific legislation for wilderness per se, India is one of the few countries whose constitution (1950) makes specific reference to protecting the natural environmental and promoting ecological security. Repeated use in the constitution of such words as "protection," "safeguard," and "compassion" when referring to wildlife, forests, and rivers is unique. This is reflected, for example, in the dramatic increase in the number of national parks from 45 in 1960 to almost 450 today.

Article author Krishnan Kutty. Photo by Don Goodman.

Further, in contrast to most other countries, India's national wildlife policy does not encourage economically sustainable use. However, the demands of such a large population for natural resources and crop land are inevitable. Rapid growth of human and livestock populations since the turn of the century has been harsh on the environment. This century alone has seen the extinction of many species of wildlife. Chief among them are the hunting leopard and the white-winged wood duck. Today, just like in the West, recreational use of these lands has added pressure to their sustainable management, and has given a new twist to the term coexistence.

Wildland Recreation

Among India's wildlands, the most popular are the Himalaya to the north, probably the only area similar to the American concept of wilderness. For obvious reasons, the Himalaya sees much recreational use, mainly mountaineering and trekking and of late, river rafting expeditions. In 1995 there were 92 foreign and 115 Indian expeditions to the Himalaya. From originally being an activity mostly for foreigners, mountain and adventure sports are now attracting Indians in large numbers.

Unfortunately, the impact of mountaineers on the environment is a matter of great concern. For example, in 1982 the Government of India "closed" the Nanda Devi Sanctuary to all climbers and trekkers due to an extremely high level of degradation of the land in that area. The sanctuary remains closed today. As mountaineers become more conscious of their impact, new ideas are being discussed to create proactive strategies to help stem degradation.

River running in kayaks and rafts is becoming increasingly popular. At present, both these activities are offered commercially, mainly in the north. The high cost of equipment and their seasonal nature have kept them out of reach

for the individual enthusiast. However, in the South, "water sports centers" and private clubs make these activities affordable. Mountain biking is still in its infancy, but it's just a matter of time before bikers, too, demand their own wildland space.

Southern India also has mountains and wildlands, and is less utilized than the north. Here, the land rises to a high plateau known as the Deccan, and is bordered on both sides by mountain ranges that run parallel to the east and west coasts. The western mountains are higher; they have a wider coastal strip than the east and continue to the southern tip of India. The highest point on the western range is Anai Mudi at 2,695 meters. Because of their relative lower elevation and tropical climate, these areas have been inhabited by communities for centuries.

Southern India sees more Indian rather than foreign recreationists, primarily for rock climbing, trekking, camping, fishing, birding, and wildlife viewing. Some of the finest national parks are found in the South, such as Bandipur Elephant Sanctuary and Nagarhole—one of the 16 "Project Tiger" sites set up by the World Wildlife Fund (India). The Kabini River offers some spectacular sport fishing of the species known as the "Mahseer," which weigh up to 25 kilos.

Rock climbing is fast becoming a popular activity in south India. Ramnagaram, a town about 35 miles from Bangalore (in south central India) offers world-class climbing. Overseas climbers regularly visit the area accompanied by their local counterparts. Interestingly, Bangalore boasts of India's first "climbing wall," and sport climbing competitions are regularly held.

In India's west lie the famous deserts of Rajasthan, the only area in India that has camel-back safaris. A superb location for birds is the Keoladeo National Park, which has more than 330 migratory birds from Asia, the Middle East, Siberia, and Europe. In central India are great wildlife sanctuaries tucked away in the Aravali and Vindhya ranges. Further to the east and north is the state of Assam which has been in the forefront of wildlife preservation in India. It is here that the rare, Indian one-horned Rhino was brought back from the brink of extinction. Finally there are the Garo, Jaintia and Khasi hills inhabited by the tribals named after them. Due to relative inaccessibility, these forests and foothills of the Himalaya have been spared the impacts suffered in other parts of India.

The Users

In the years since independence, most noticeably during the administrations of prime ministers Indira Gandhi (1966–1977) and Rajiv Gandhi (1984–1989), an aggressive campaign of environmental education was launched at local and institutional levels. Much of this work is continued today by experienced NGOs such as the World Wide Fund for Nature (India), the Bombay Natural History Society (one of the world's oldest, continuously operating environmental organization), and many local groups. There is also a continuing and noticeable increase in wildland recreation. Many of the big cities have organizations and clubs that cater to the needs of "adventure seekers" by providing information, equipment, and guides. In the north there are mountaineering institutes set up and funded by the government to provide training for those with serious interest. Since the early 1990s, skiing has been added to the skills being taught at the institutes.

Because of the relative low per capita income and the prohibitive cost of quality equipment for the recreational user, most activities are undertaken at the "club" or university level, in which these organizations collect funds to buy the necessary gear and make them available (usually shared) among their members. Unfortunately, this leads to large-sized groups undertaking outdoor activities, which can potentially have a negative impact on the land. The overseas visitor also often travels in a large group. In each segment, however, there is always a small percentage of people who challenge themselves and "discover India" on their own.

In keeping with a tradition in the British Commonwealth, another group of wildland users are the National Defense personnel. Each of the three services (i.e., army, navy, and air force) have their own "adventure cell" and organize outings for their staff. As an establishment funded by the government, they have access to good equipment and training. These services actively encourage their staff in these pursuits.

An endangered tiger in Jim Corbett National Park. Photo by Kirshnan Kutty.

Questions Remain

As the Indian population heads toward one billion, with the world's largest middle class, challenges are mounting exponentially. The rural populations continue their increasing need for agricultural land, and city dwellers look more and more to the wildlands for their recreation. India has faced many challenges in its long history, but the rising tide of human numbers will be its greatest hurdle if wildlands are to remain for wildlife, recreation, biological diversity, and as a haven for solitude and reflection. **IJW**

KRISHNAN KUTTY lives in Bangalore, India, with his wife and two-year-old son. He started trekking and climbing in India in 1976. An honorary local secretary of the Himalayan Club in Bangalore, he has led or taken part in more than ten mountaineering expeditions in the Himalaya. He is a visiting faculty member at the Himalayan Mountaineering Institute in Darjeeling. An NOLS instructor since 1989, he has worked for NOLS at Lander, Wyom., Palmer, Ark., Chile (South America), and Kenya (Africa). Mr. Kutty started the NOLS India program in 1991 and continues to run it.

WILDERNESS STRATEGIC PLANNING

Results from the Sixth National Wilderness Conference, USA

By Christopher V. Barns

Abstract: Strategic planning groups were an integral part of the Sixth National Wilderness Conference (NWC) at Santa Fe, New Mexico, in November 1994. Planning group results were then integrated in a conference-wide process to develop planning direction. Recommended actions reflect a growing concern that wilderness be managed as a biophysical resource rather than merely a recreation resource, recognizing the need to broaden the scope of wilderness education and reinforce agency commitment to wilderness stewardship. The recommended actions contributed to the formulation of an Interagency Wilderness Strategic Plan (IWSP) adopted by the four wilderness-managing agencies in the United States.

IN NOVEMBER 1994, OVER 700 PEOPLE GATHERED in Santa Fe, New Mexico, for the Sixth NWC. Those in attendance were a mixture of federal agency wilderness specialists and managers, students and academicians, and others. In addition to celebrating the 30th anniversary of The Wilderness Act, they participated in a strategic planning exercise designed to develop consensus on the actions needed to guide wilderness stewardship over the next decade.

Given a list of issues generated by early registrants (Barns and Krumpe 1995), 600 of the conference attendees participated for two afternoons in a Nominal Group Technique (NGT) (Barns 1996) to develop actions that were forwarded to address these issues. The top priority actions for each of seven topic areas were distributed to the attendees in ballot form. On this ballot, respondents were asked to apportion time by deciding what percentage of wilderness stewards' time should be spent on each of these topics, and within each topic, what percentage of time should be spent on each action. In addition, the ballot asked background questions: "Do you work for a federal agency? If so, which one? If not, what is your primary involvement with wilderness?", etc. Respondents were also asked to identify the physiographic regions of the United States containing the wilderness areas they were most familiar with.

Results

Four hundred twenty-four people filled out usable ballots. To a large extent the collective votes of the attendees reflect consensus priorities for wilderness stewardship. To the nearest whole percent, voters felt wilderness stewards' time should be apportioned among the seven topics as follows:

Natural and biological policy (18%)
Administrative policy (11%)
Interagency/intergroup cooperation (11%)
Management of nonrecreation resources (14%)
Recreation management (13%)
Education and training of agency personnel (13%)
Education of the public (20%)

Following is a list of the actions for each topic as developed and worded by the conference attendees. Within each topic, the actions are listed in the priority given to them by those who worked on that particular topic. Following each action is the percent of each topic's time that the conference attendees as a whole voted to spend on that action.

Natural and Biological Policy

A. Acquire legal authority and funding to aggressively purchase and retire nonconforming uses (26%).
B. Establish a natural interagency group to develop and implement a wilderness health monitoring system (16%).
C. Translate the definition of naturalness for each wilderness into management goals/desired future conditions statements (12%).
D. Restore the natural process of fire in ecosystems by creating prescribed fire plans, both natural and management-ignited (21%).
E. Establish exchange programs with our international counterparts at the technical, professional, and management levels to spread the ideals of wilderness and to preserve international biodiversity (7%).
F. Acquire areas and develop proposals for acquiring areas that contain unrepresented ecosystems to be included under the National Wilderness Preservation System (NWPS) (16%).

Administrative Policy

A. Convene interagency panel to review existing wilderness management policy and guidelines and to recommend uniformity (17%).
B. Request the assistance of the National Biological Service (NBS) in developing standards for biological

resources that all agencies can use for monitoring. From this, develop data analysis systems that are easy to implement and understand (17%).
C. Establish positions with "wilderness" in the title at all agency levels and develop career ladders for those positions (18%).
D. Restructure the budget process to emphasize wilderness management (20%).
E. Amend or revise the executive order regarding the Federal Advisory Committee Act (FACA) (14%).
F. Institute mandatory wilderness management performance elements for managers (13%).

Interagency/Intergroup Cooperation

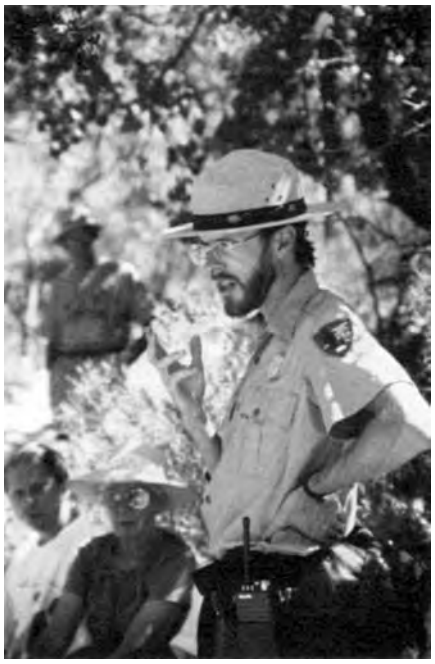
A. Establish and empower a formal national level interagency group (19%).
B. Establish federal interagency (including tribal) workgroups at the local level (20%).
C. Establish a federal interagency (including tribal) work group at the bioregional level (18%).
D. Establish a uniform State of the Wilderness report for land management agencies to report to Congress, and include agency wilderness needs (19%).
E. Standardize position descriptions and evaluations for wilderness managers, and create an Office of Personnel Management wilderness management series with accreditation requirements (23%).

Management of Nonrecreation Resources

A. Implement exotic plant management that includes prevention, detection, and quick control of spot infestations as well as public education (21%).
B. Develop public education programs (e.g., media campaigns) to stimulate acceptance of natural processes, the management-ignition of prescribed fire, and to recognize and promote nonrecreational values of wilderness (19%).
C. Develop a comprehensive monitoring program that utilizes measurable objectives to assess impacts within wilderness areas as well as outside threats (15%).
D. Educate wilderness managers, resource specialists, nonrecreation users, and any other affected or interested parties about wilderness management philosophy, policy, and objectives (12%).
E. Evaluate existing data, assess and identify needs, and establish methods and guidelines for inventory and monitoring of nonrecreation wilderness values on an interagency basis for biogeographical areas (10%).
F. Research, develop, and implement interagency Geographic Information Systems (7%).
G. Complete both prescribed natural fire and minimum impact fire suppression plans by the year 2000 (10%).
H. Develop wilderness personnel exchange program between agencies (6%).

Recreation Management

A. Continue to fund field-based work force (30%).
B. Establish national public electronic network to provide better pretrip information both inside and outside of wilderness (11%).
C. Provide Leave No Trace (LNT) training for all commercial users and require teaching of wilderness ethics to clients (16%).
D. Develop fee legislation where fees are returned to wilderness management programs (15%).
E. Establish a national interagency action plan for agency-outfitter relationships (6%).
F. Develop consistent strategies between agencies to address new user groups, technologies, and nontraditional users (9%).
G. Link interpretation of heritage and cultural resources to wilderness values (7%).



Article author Chistopher V. Barns addresses a group of visitors to Zion National Park in Utah.

H. Develop, identify, and distribute information on new recreation management tools and techniques (e.g., conflict resolution models, experience time slot systems) (6%).

Education and Training of Agency Personnel

A. Have a liaison or point of contact and adequate representation from U.S. Forest Service (USFS), Bureau of Land Management (BLM), National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS) at Carhart Training Center and Aldo Leopold Institute with direct link to other national training centers (16%).
B. Develop a formalized interagency training program and budget to institute for all levels of personnel, including seasonals and volunteers (17%).
C. Identify specific wilderness training needs and build an awareness of what training is currently available between agencies (8%).
D. Incorporate wilderness training, which includes wilderness values,

in existing training for ecosystem management and for functions such as fire, natural resources, cultural resources, orientations, etc. (17%).

E. Expand line officer training to include midlevel staff, specialists, and others affected by or involved in decision making that affects wilderness (13%).
F. Retain trained seasonals to educate others and maintain continuity of expertise (15%).
G. Encourage different agencies (microregions) to focus on a vision and strategy to achieve the vision for education and training (6%).
H. Provide more accessible interagency information sources (e.g., internet, electronic publication of abstracts of current wilderness research, National Biological Survey) (7%).

of wilderness within the larger landscape and incorporate it into the larger process of ecological education (15%).

F. Use a national clearinghouse organization to identify or recruit private sector funding partnerships for ecological education (7%).
G. Work with national environmental education organizations to add wilderness education to grades kindergarten through 12 (17%).
H. Utilize private sector marketing expertise and techniques to identify and test message effectiveness (6%).

It should be remembered that these figures represent the average of respondents' priorities. Individually, there was great variation in assigning percentages of effort that should be spent on any given item. For the most part, this can be attributed to the differences in the problems facing the varied units in the NWPS. In addition, a few ballots opted to emphasize only one action. For instance, one person voted to spend 100% of the time to "implement exotic plant management … ." Rather than representing what they felt was a realistic or absolutely appropriate balance of our efforts, such respondents may have skewed their one ballot hoping to gain a little more weight for their specialty. Perhaps these biases canceled each other out in the aggregate.

The formal commitment of the four wilderness managing agencies, plus the National Biological Service, to a national wilderness stewardship plan and its implementation is a major, positive step for United States wilderness.

Education of the Public

A. Develop a coordinated national strategy to address nationwide wilderness education, including interagency and external organizations, the public, and the media (22%).
B. Identify strategies appropriate to diverse audiences (e.g., cultural, rural, urban, and nontraditional groups) (15%).
C. Take front desk personnel to the wilderness (9%).
D. Establish and fill permanent interagency positions for wilderness information and education specialists by January 1, 1997, for wilderness units (9%).
E. Develop a consistent wilderness curriculum that includes the role

Identifying the Highest Priority Actions

By multiplying the percentage of votes for each topic by the percentage of votes for each action within that topic, we produced a ranked list of all the top actions proposed. Though this slightly undervalues the topics having more actions in them, the results are still telling. No matter what subset of respondents is analyzed (e.g., Forest Service employees, eastern wilderness specialists [Barns 1996]), the same seven actions come out on top, although the order among those seven may change. These top seven actions are:

1. Acquire legal authority and funding to aggressively purchase and retire nonconforming uses.
2. Develop and commit to a coordinated national strategy to address nationwide wilderness education, including interagency and external organizations, the public, and the media.
3. Continue to fund a field-based workforce.
4. Restore the natural process of fire in ecosystems by creating prescribed fire plans, both natural and management-ignited.
5. Work with national environmental organizations to add wilderness education to grades kindergarten through 12.
6. Identify strategies appropriate to diverse audiences (such as cultural, rural, urban, and nontraditional groups).
7. Develop a consistent wilderness curriculum that includes the role of wilderness within the larger landscape and incorporate it into the larger process of ecological education.

Of these top seven actions, numbers one and four (retiring nonconforming uses and restoring fire) directly address issues concerned with manage- ment of the natural and biophysical values of wilderness, rather than the recreational and social values of wilderness (which are not represented in the top seven actions). This result reflects the reported trend of increasing concern over such issues (Barns and Krumpe 1995).

In addition, actions two, five, six, and seven are all concerned with wilderness education. But, whereas

wilderness education in the past has focused on LNT or other programs geared toward on-site recreationists, the need is now apparent for wilderness education to concern itself with the value of wilderness to society as a whole and to be directed at a much more diverse audience.

The remaining action, "continue to fund a field-based workforce," is one possible response to the number five issue reported overall prior to the conference (Barns and Krumpe 1995): "lack of understanding or commitment by agency hierarchy."

Developing the Interagency Wilderness Strategic Plan

As a consequence of these planning groups in Santa Fe, the four wilderness-managing agencies resolved to develop an IWSP to focus and coordinate stewardship efforts for the next several years. In the months following the Santa Fe conference, representatives from the USFS, NPS, USFWS, and the BLM worked to compile a list of actions for this plan.

The priority of the actions listed above was generated at the Santa Fe conference by a mix of federal employees, educators, students, nongovernmental organization representatives, and other interested members of the public. To keep within the bounds of the FACA (Mergliano and Krumpe 1996), it was necessary for the agency representatives working on the IWSP to look at only the priorities from the subset of the 351 federal employees who filled out the ballot. Remarkably, their priorities were almost identical to the conference as a whole; the only striking difference was among the top seven actions where federal workers favored "continue to fund a field-based work-force" as the top priority.

In addition to the actions voted on through the conference ballot, the agency representatives considered actions generated through the NGT that did not get carried forward, as well as actions suggested from agency sources not connected with the Santa Fe conference. The composite list of actions went through numerous reviews by the four wilderness-managing agencies and the NBS as well.

The resulting IWSP contains 33 actions grouped into five broad topics. The plan has been signed by the chief of the USFS, and the directors of the BLM, NBS, NPS, and USFWS, for the purpose of "re-dedicating and focusing our agencies' efforts [in wilderness stewardship]." No priorities are assigned, because, as was noted above and reported elsewhere (Barns 1996), needs vary from region to region, and may even vary between neighboring wilderness areas. It is assumed the managers closest to the resource will know best what is needed to improve the stewardship of their particular units. But, as the introduction to the strategic plan states, "our commitment to progress in each of these areas is unequivocal. America's 'enduring resource of wilderness' is too important for anything less."

Summary and Conclusions

Consensus of wilderness managers' and others' views of wilderness stewardship priorities and action items among those priorities were developed through a NGT at the 1994 NWC. Consensus views are not the last word on desirable directions and needs for future wilderness stewardship, and—due to FACA—only the views of federal employees could be officially considered in developing policy. However, this nominal group exercise generated critical information and impetus for developing a national wilderness stewardship plan. Therefore, this nominal group exercise generated critical information and impetus for developing such a plan. The formal commitment of the four wilderness managing agencies, plus the NBS, to a national wilderness stewardship plan and its implementation is a major, positive step for United States wilderness. **IJW**

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HOW DO YOUR PERSONAL WILDERNESS VALUES RATE?

By Kendall Clark and Susan Kozacek

A PERSON'S PERSONAL PHILOSOPHY ABOUT WILDERNESS and its management can be an important factor in their perception of what are appropriate policies and actions for wilderness stewardship. We've found that helping wilderness managers identify their personal orientation and philosophy toward wilderness is helpful in wilderness stewardship training. Just recognizing that one's colleagues may have a slightly different philosophy contributes to understanding that wilderness stewardship is not a cut and dried business; rather, there is a lot of room for interpretation in what the right decision to make is. So we constructed a Personal Wilderness Values Test and have used it now in several interagency wilderness stewardship training sessions.

Put Your Values to the Test!

How do your wilderness values rate? Take the test and see. It's easy—and you may be interested in seeing where you fit compared to some others who have taken the test. Remember, answer these questions based on your personal values—not what you think The Wilderness Act or agency policy requires.

Stop here and answer the questions on page 13. When you have finished the test, count your number of "yes" answers and then continue reading below. There you will find the rest of the story and see how your score compares. We suggest you take the test *before* seeing how your score compared with others.

Biocentric and Anthropocentric Philosophies

Two contrasting orientations are often used to characterize philosophies of wilderness stewardship: biocentric and anthropocentric. A biocentric philosophy "emphasizes the maintenance of natural systems at the expense of recreational and other human uses, if necessary, because wilderness values depend on naturalness and solitude. The goal of this philosophy is to permit natural ecological processes to operate as freely as possible … ." (Hendee et al. 1990, p. 531). An anthropocentric philosophy "sees wilderness primarily from a human-oriented perspective. The naturalness of wilderness is less important than facilitating human use and convenience. Programs that would alter the physical and biological environment to produce desired settings are encouraged." (Hendee at al. 1990, p. 531).

The Wilderness Values Test

To devise our wilderness values test we developed 35 questions that could be answered "yes" or "no," such as question 9: "Do you feel we should be suppressing any fires in wilderness?" A "yes" answer would place a person on the anthropocentric end of the wilderness values scale, and a "no" answer would reflect a biocentric philosophy. The test is scored by tabulating the number of "yes" answers recorded after all 35 questions. Of course the questions present choices that are oversimplified compared to the real world, so you have to respond in a generalized way. And you must keep in mind that it is your "personal" wilderness values that are being measured—not The Wilderness Act or an interpretation of policy.

Our experience is that most of the managers we've tested respond with between 15 and 25 "yes" answers—and we would characterize them as being ecocentric, "in the middle" of the anthropocentric-biocentric continuum. We always find a few who respond with fewer than 15 "yes" answers, which we believe puts them on the biocentric side of the continuum. And there are always some who have more than 25 "yes" answers, reflecting an anthropocentric view.

We haven't used the test on populations of wilderness users, but at the interagency wilderness stewardship training session at Eagle Lake, California, in September 1996, the lowest score by several points was nine "yes" answers by a wilderness vision quest guide who was at the session to participate in a user panel. We think it will be interesting and valuable to try the test on wilderness user populations in the future. **IJW**

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Wilderness Values Questions

1. Do you feel hunting is an appropriate activity in wilderness?

2. Do you feel it is OK to stock native fish in lakes that historically have not had fish?

3. In an area that has established wildlife watering devices (e.g., guzzlers), do you feel it is appropriate to maintain these and leave them in wilderness?

4. Do you feel it is appropriate to control predators in wilderness that are killing a substantial number of livestock?

5. Are low-level aerial-game surveys in wilderness acceptable to you?

6. Do you feel we should be protecting known threatened and endangered species habitat from Prescribed Natural Fires (PNF)?

7. Is it acceptable to you to have Managed Ignited Fires (MIF) in a wilderness area?

8. Do you feel it is appropriate to have technologically advanced data collecting stations in wilderness to monitor temperature, moisture content, wind, and other factors that would allow better information for PNF and MIF?

9. Do you feel we should be suppressing any fires in wilderness?

10. In your opinion, is it OK to maintain historic cabins in wilderness?

11. Do you feel that there is a point when air quality is more important than allowing extended periods of PNF?

12. Is it OK to interpret in a publicly available book historic structures and cultural resources that are in wilderness?

13. Do you feel that cattle or sheep grazing is an appropriate use for wilderness?

14. Do you feel grazing permittees should be allowed to use motorized equipment for maintaining water developments in wilderness where this has been a historical method of maintenance (for example, using a dozer to clean out a dirt stock tank in wilderness)?

15. Do you feel a hazard tree along a well-used trail should be cut to protect public safety?

16. Do you feel that cutting logs in trails to facilitate passage by pack strings is appropriate in wilderness?

17. Do you feel we should be placing signs by natural caves in wilderness that pose safety hazards?

18. Do you feel it is appropriate for a visitor center to be giving users more information about hazards in wilderness so we can lessen the potential of search-and-rescue operations?

19. Do you feel that signs should be placed at historic structures to warn people of the potential for hantavirus?

20. Do you feel we should rescue a person with a broken leg (but not in a life-threatening situation) in wilderness with a helicopter?

21. Do you feel it is OK to use llamas or pack goats in wilderness?

22. Do you feel that it is appropriate to leave some established rock-bolt routes for climbers in wilderness areas?

23. Does the value of having the number of users controlled by a permit system outweigh the value of unregulated use and freedom in wilderness (i.e., do you believe permit systems should be used in wilderness?)?

24. Do you feel it is OK to allow people to collect crystals in wilderness?

25. Do you feel it is OK to allow people to collect antlers in wilderness?

26. Do you feel that recreation opportunities are the dominant value of wilderness?

27. Do you feel it is OK to have trail signs in wilderness?

28. Do you feel it is OK to put mileage on signs in the wilderness?

29. If a free one were available to you, would you take a cellular phone into wilderness with the intention that it would only be used to help in an emergency situation?

30. Do you feel OK about burying decomposable garbage in wilderness?

31. If you had a well-behaved dog, would you feel OK about taking it with you to the wilderness?

32. Do you think it is appropriate for outfitters to have business operations dependent on wilderness?

33. Do you feel it is OK to film in wilderness a movie about wilderness values?

34. Do you feel it is appropriate to allow a one- or two-week window for chain-saw use to open trails after an intense blowdown event?

35. Do you feel it is OK to apply a mandatory party size or limited permits to promote solitude in wilderness?

WILDERNESS AND NATURAL AREAS IN EASTERN NORTH AMERICA

Symposium Highlights

By John Burde and Michael Legg

Article coauthors John Burde (above) and Michael Legg (below).

IN 1974, AS THE UNITED STATES Wilderness Act (P.L. 88-577) passed its 10th anniversary, it became apparent that a geographical imbalance existed between wilderness acreage (mostly in the West) and U.S. population (a majority in the East). The so-called "Eastern Wilderness Act" of 1975 (P.L. 93-622) was then passed to help remedy this situation by amending the qualifying criteria for admitting smaller and previously impacted lands in the eastern United States into the National Wilderness Preservation System (NWPS). Thus, additional lands in the East were added to the wilderness system, which, combined with existing wilderness roadless and other natural areas in the national forests, national parks, and national wildlife refuges, have become extremely important in meeting needs of the large population centers of the eastern United States.

Managing wilderness and natural areas in the East offers unique challenges. Many of these areas reflect past human occupation and some have established traditions of use that are not wilderness dependent. Wilderness areas in the East tend to be smaller than their western counterparts, which makes them more vulnerable to both on-site and external human activities. Lands adjacent to wilderness are often highly desirable for development. Hence, the need to coordinate all land-use planning with wilderness is acute, and many questions about wilderness benefits and impacts of use await further research.

In 1985, a major symposium, Wilderness and Natural Areas in the Eastern United States: A Management Challenge, (Kulhavy and Conner 1986) in Nacogdoches, Texas, provided for information exchange on the topic among wilderness professionals. The latest findings in physical, biological, social, and spiritual aspects of wilderness in eastern North America, combined with informal discussions and field trips, gave participants an extensive overview of the status of wilderness and natural areas in the East at that time.

The next decade, 1986–1996, brought continuing change in the wilderness system and the social and economic conditions that affect it. Demand for wilderness-related recreation continued to increase, though some user characteristics changed. The role of government changed too, as support and financing for specific programs, including wilderness, were re-examined. These and other changes mean wilderness professionals today are challenged with managing wilderness everywhere with additional complexities, including greater use and less money to do the job.

Thus, a decade after the first symposium on wilderness in the East, a second symposium was held in May 1996 in Gatlinburg, Tennessee, entitled Wilderness and Natural Areas in Eastern North America: Research, Management and Planning. Plenary and concurrent sessions focused on preservation of natural and biological values, management of social values, policy and agency coordination, training of agency personnel, and public awareness and understanding. The major themes of the plenary and concurrent sessions are described below with highlights from selected authors.

Wilderness: A Review

U.S. Forest Service (USFS) Deputy Chief Grey Reynolds reviewed 30 years of federal wilderness management and anticipated some future changes. Traditional management techniques will remain but may be augmented by new tools such as Management-Ignited Fires. Users will face changes as well. For instance, fees for wilderness entry and payment for parking at trailheads are being pilot tested for more widespread application.

Ed Zahniser, National Park Service (NPS) historian and son of Howard Zahniser, president of The Wilderness Society (TWS) and principal author of The Wilderness Act, provided an emotional review of his father's efforts in creating a federally protected wilderness system, especially as it applies in the East. His father saw as a model for wilderness in the East, the "forever wild" clause used in the preservation of the Adirondacks of New York state. Such wilderness continued to be a source of inspiration to the elder Zahniser

throughout his life. Zahniser saw a wilderness system as part and parcel of the holistic notion of a Great Society, and its protection part of the national social conscience. Such values underlie wilderness stewardship today.

Wilderness Management Issues

Representatives from each of the agencies managing U.S. federal wilderness discussed current issues. Jerry Stokes of the USFS summarized the "Diamond Bar decision" at the Gila Wilderness in New Mexico, which "defined and refined the wilderness resource regarding (livestock) grazing." In the Boundary Waters Canoe Area Wilderness, new legislation is pending for expanded motorized use. Stokes stressed the "changing of the guard politically" and its potential effects on wilderness. As the interface between human settlements and wilderness increases, expanded pressures on wilderness will occur.

The NPS has a long history of preservation of natural areas and values. Wes Henry described the NPS's expanding wilderness program, creation of an intra-agency wilderness steering committee and expanded training, including participation in the interagency Arthur Carhart Wilderness Training Center (ACWTC). Wilderness is becoming more embedded in the structure and functions of national parks. Fire management and interpretation functions will increase in NPS wilderness stewardship.

Jeff Jarvis, wilderness program leader for the U.S. Bureau of Land Management (BLM), discussed proposals for and growth of wilderness on BLM lands, using the Utah wilderness bill as an example. There are now 139 wilderness areas on BLM administered lands, averaging 40,000 acres, most typically located in lowland areas of the West. BLM management will focus on creating unique wilderness experiences, primitive even by wilderness standards, without trails or interpretation.

Peter Jerome, wilderness coordinator for the U.S. Fish and Wildlife Service (USFWS), described U.S. Wildlife Refuge System wilderness as being under siege by public use and recreation. Jerome cited air quality degradation in wilderness as a major concern. In a companion paper, Ellen Porter reporting on air quality measurements on the 75 units of wilderness on the wildlife refuges, found that air pollution is more serious and widespread in the East.

Each speaker stressed that downsizing and reorganization in government is forcing more cooperation among agencies, a good side effect manifested by such things as (1) the creation of the ACWTC, (2) the establishment of the Aldo Leopold Wilderness Research Institute (ALWRI), and (3) the preparation of a National Wilderness Strategic Plan. Though the USFS has historically led the way in these initiatives, the other agencies are becoming more deeply involved.

Wilderness Monitoring

Future management decisions must be based on data from wilderness monitoring, but current monitoring data describing most aspects of wilderness are minimal, outdated, or nonexistent. For example, the Sipsey Wilderness in Alabama was not classified by landform or vegetation until nearly 20 years after its designation. Superintendent Ron Switzer of Mammoth Cave National Park described the complexities of managing wilderness and the wide variety of information needed. Stan Coloff of the National Biological Service, commending a proposed monitoring framework by Cole, Landres, and Watson of the ALWRI, called for more coordinated monitoring to protect wilderness character, to assure provision of the beneficial uses described in The Wilderness Act, to provide ecological baselines for comparison purposes, and to determine national trends. Switzer concluded that a national conference on wilderness monitoring strategies is needed.

Ecosystem Management

Monitoring needs are paramount in the current trend toward ecosystem-based management, in order to document natural conditions. If one adopts ecosystem-based management in wilderness decision making, questions arise concerning current naturalness and desired future conditions in the area. Should ecosystem-based management always lead to climax ecosystems?

A hiker on a foggy morning on the Appalachian Trail near Mount Collins, Great Smoky Mountains National Park. Photo by John Burde.

Most wilderness areas in the East were not pristine at the time of their designation. What, if anything, should management do next? Ron Billings described the situation in Texas where wilderness was designated on lands with second-growth loblolly and shortleaf pine stands. Due to a policy of limited interference, subsequent pine-beetle infestations caused several undesirable results. Pathologist Steven Oak pointed out that native insects and diseases occur naturally in all ecosystems. Though many have neutral or even positive effects, unforeseen or undesirable results are possible if insects and disease are allowed to take their course in wilderness, especially the small wilderness areas in the East.

Saddle Creek in the Charles C. Dean Wilderness Area in Hoosier National Forest, Indiana. Photo by John Burde.

Fire Management

An analogous situation exists with fire. Allowing natural fires to burn, or implementing planned ignitions in wilderness, may cause unintended consequences. Francis Mohr stated that wilderness managers must take a proactive role by providing direction to implement wilderness fire suppression tactics that will avoid unnecessary adverse impacts or wilderness resource damage.

Applying ecosystem-based management to wilderness involves asking the correct questions and enumerating alternatives for consideration by those affected. Such an application was described by William Stephenson of Parks Canada. Four small national parks in Ontario are being managed using ecosystem-based management concepts, illustrating how small natural areas can exist among human developments. This model could be widely applied throughout eastern North America.

Wilderness in Society

Wilderness is only one of several possible uses for public lands. Jon Roush, then president of TWS, described the political context for eastern wilderness that includes a shift in action from federal to local, from public to private, and from piecemeal conservation to a focus on whole systems. He suggested a new model for wilderness—community-based conservation, based on consensus among diverse stakeholders from agreement on perceived needs, mutual respect, and the use of science and technical support to solve disagreements. "A spirit of cooperation for the good of all parties must replace the adversarial approach which consumes valuable time and resources," Jon said.

Wilderness managers can be a positive force in making this happen. Jerry Stokes of the USFS urged wisdom and courage by managers to make decisions where "wilderness wins." Peter Jerome of the USFWS noted that such decisions are supported by an American public that cares, such as in the Arctic National Wildlife Refuge in Alaska, where grassroots support has prevented development to date, and bipartisan support exists for continued protection.

Karen Wade, superintendent of Great Smoky Mountains National Park, summed up the agency view when she stated: "Solutions to the problems in eastern wildernesses and national parks have to come from three things: an educated and activist public, an intelligent and diligent press, and strong leadership … all, sustained over time on behalf of those values held in common interest. Without this, advocacy for private interest will always prevail and great places like Great Smoky Mountains National Park will be lost forever."

Wilderness Communication

The most frequently mentioned solution to wilderness stewardship problems was communication, including pubic environmental education to create a more enlightened and supportive populace, and interpretation, which, as an indirect management tool, is extremely useful in directing and improving the wilderness experience.

Tom Rillo, in a keynote address, highlighted the role of communication. He stressed the need for environmental education in general by stating: "The environmental condition of planet Earth is threatened with severe imbalance and only environmental literacy can ensure a harmonious balance … . Environmental literacy is a prerequisite to wilderness and other natural open space preservation." Rillo further suggested that schools are the best way to achieve such literacy, stating: "The public and private school as an educational institution has the greatest responsibility for environmental education because of mandatory attendance." He went on to say that "all institutions, agencies, and organizations dealing with people should accept responsibility for environmental education and, consequently, wilderness education."

The application of environmental education and interpretation to protect wilderness can be found throughout the East. Steven McCoy of Great Smoky Mountains National Park described the Parks As Classrooms program, a partnership with the Pi Beta Phi Elementary School in Gatlinburg. Parks As Classrooms seeks to help students and teachers learn about the role of the park and its resources. In return, the park hopes to create a local populace that will continue to support the park throughout their lives.

Another technique described was the Wilderness Box, an environmental education tool to develop an awareness of wilderness and its significance to society among students from kindergarten through high school. Redesigned by the ACWTC, the Wilderness Box has been made available for national distribution by all agencies in the NWPS.

Mary Arnaudin was instrumental in creating a Wilderness Box team on the Pisgah Ranger District of the Pisgah National Forest in North Carolina. She described a three-phase plan to get the program into local schools. The first phase was to assemble a team to introduce the box to schools and make modifications to meet local conditions, redesign it to meet state curriculum requirements, and structure it so that a part of the program is allocated to each grade. The second phase is a pilot program in partnership with a local school

system, then actually conducting the 10-hour workshop. The final phase consists of continuing support and expanded partnerships. Each Wilderness Box costs about $600 and cooperative funding is required for workshops and production of additional boxes.

A less traditional use of environmental education was Wilderness Discovery, a seven-day backpacking program for disadvantaged youth, designed to enhance their self-esteem, cooperation, and social skills. This was described in a paper by Keith Russell and John Hendee of the University of Idaho, and Lonnie Hall, director of the Atlanta Federal Job Corps Center. Wilderness Discovery participants from the Atlanta center were predominantly young African-American women who were taken on trips to wilderness in the Nantahala and Cherokee National Forests in North Carolina and Tennessee. Analysis of journals, exit interviews, and focus group results showed that Wilderness Discovery is a positive adjunct to the ongoing vocational, educational, and social skills training that Job Corps students are already receiving. The students liked Wilderness Discovery and endorsed its value. Not only did Wilderness Discovery result in enhanced self-esteem, personal insights, and improved social skills, it also planted the seed for wilderness support among a population having little direct experience with natural environments.

On-site interpretation can also be a useful tool in wilderness management when funds are available. Two papers described the application of interpretation on the Charles C. Deam Wilderness in Indiana. Les Wadzinski of the Hoosier National Forest described how interpretation was used to help protect wilderness values and better direct use of the wilderness. Doug Knapp of Indiana University described the partnership arrangement between the university and the agency that put students in the field as interpreters, giving them valuable experience and allowing the agency to reach its interpretive goals within budget constraints.

Conclusions

It is clear that wilderness in the East is no longer business as usual. There are changes in how society views wilderness, how politicians view wilderness, and how agencies function. We will see continuing change in program support and funding. Agencies must respond proactively if wilderness is to maintain its role in society. Managers must seek better interagency coordination; better information about the wilderness resource and the social, physical, and biological context within which it exists; and improved relationships with the public through environmental education and interpretation.

We should not assume that, based on their designation, wilderness areas are secure. More effective management, an expanded research agenda, and better integration of wilderness into land-use planning will increase the likelihood that wilderness will continue to play a primary role in our nation's well-being. As Karen Wade said: "Without this, advocacy for private interest will always prevail and great places … will be lost forever." **IJW**

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Michael Legg was cochair, with David Kulhavy, of the symposium. He is assistant dean at the College of Forestry, Stephen F. Austin State University, Nacogdoches, TX 75962-6109, USA. Telephone: (409) 468-3301; e-mail: mlegg@sfasu.edu.

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Conference proceedings are available from the College of Forestry, Stephen F. Austin State University, Nacogdoches, TX 75962, USA, attention Dr. David Kulhavy. Fax: (409) 468-2489; e-mail: dkulhavy@sfasu.edu. Conference papers referred to in the text follow.

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WILDERNESS @ INTERNET

Indonesian Protected Areas on the Web

By Charles Burgess

THE WORLD WIDE WEB (WWW) OR "THE WEB" is fast becoming an important source for wilderness information exchange throughout the world. Its importance is due to two factors. First, the public demands high quality, up-to-date information. Second, public access to the internet is increasing. At the end of 1995 there were 55 million internet users, with a growth rate of 100% every nine months (PCS 1996; Hoffman and Novak 1994). The web is an ideal medium for land managers to disseminate up-to-date information at a reasonable cost. It has been suggested that a wilderness information network could facilitate dialogue among many different audiences (Freimund and Queen 1996). Creators of protected area web sites should be aware of and take advantage of this potential.

In accordance with the theme for this issue, I searched the web for protected areas in Asian countries. While there were numerous sites to view, with the exception of Malaysia (http://tourism.gov.my/ga.html) and Indonesia, most currently contained minimal substantive information. The Ministry of Forestry in Indonesia should be commended for their efforts at providing information on the web, which are the focus of this review.

Ministry of Forestry Home Page
{http://mofrinet.cbn.net.id/rm.htm}

This page contains the most information about protected areas in Indonesia. It consists of links to information about the mission of the agency, department divisions, types of land managed by the agency, and a few research links. The following descriptions are of pages contained within this site.

Tropical Rainforest Conservation Areas
{http://mofrinet.cbn.net.id/conser.htm}

This page does an excellent job of explaining the distinctions between the different types of conservation areas in Indonesia. These consist of production forests, nature reserves, recreation forests, national parks, and conservation forests. Indonesia's 24 national parks are listed with a very brief description of their creation.

National Parks
{http://mofrinet.cbn.net.id/m_np.htm}

Indonesia currently has 24 national parks, though they hope to have 40 by the year 2000. Only the following parks are represented on this page: Bahorok, Baluran, Bromo, Halimun, Gunung Gede Pangrango, and Manusela. Each park listed is linked to its own page(s). Park-specific information is text-based and consists of most of the following information (depending on the park): climate, geology, flora, fauna, interesting places to visit, directions to the park, and rules and regulations.

Summary

The Indonesian Ministry of Forestry home page represents a good beginning to the use of the WWW to convey information about protected areas in Asia. The reviewer can gleen a great deal of valuable information about the Indonesian system in a short period of time.

For more Indonesian protected area information on the web, check out these sites:

http://www.geocities.com/TheTropics/2097/index.html
http://www.indonesiatoday.com/forest/parks/summ.html
http://www.footventure.co.uk/indoinf.html

This review was provided by **Chuck Burgess,** a graduate research assistant at the University of Montana's School of Forestry. His major research interests are protected area management, using the internet as a tool for the transfer of wilderness information, and tourism sustainability. Contact: Wilderness Institute, the University of Montana, Missoula, MT 59812, USA. Telephone: (406) 243-6933; e-mail: cburgess@selway.umt.edu. **IJW**

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ACHIEVED PRIVACY IN WILDERNESS

By William E. Hammitt and William M. Rutlin

Abstract: Outstanding opportunities for solitude and privacy are characteristics that are supposed to distinguish wilderness from other types of outdoor recreation. This paper reviews how researchers have studied the influence of human encounters on wilderness experiences and proposes an improved approach. Results of a survey of visitors to Ellicott Rock Wilderness in the southeastern United States indicate that (1) the number of actual groups encountered in wilderness is inversely related to the amount of privacy achieved; (2) when privacy is plotted against both ideal and maximum acceptable encounter levels, inverse "J" curve relationships are found; and (3) the degree of privacy achieved was negatively affected when ideal and maximum encounter levels were exceeded by actual encounters, showing a high degree of congruency between visitor tolerance limits for encounters and achieved wilderness privacy.

SOLITUDE SHOULD BE A MAJOR ATTRIBUTE OF WILDERNESS, and "outstanding opportunities for solitude" are legally required in designated wilderness by The Wilderness Act of 1964. This law specifically requires that congressionally designated wilderness "provide outstanding opportunities for solitude." Although The Wilderness Act of 1964 prescribes outstanding opportunities for solitude, it does little toward providing an understanding of what constitutes a solitude opportunity, the functions these opportunities serve, or the factors that impact (positively or negatively) these opportunities. Thus, providing "outstanding opportunities for solitude" is a major challenge of wilderness management, but managers and researchers have not agreed on methods for determining if outstanding, or even adequate, opportunities for solitude exist (Watson 1995). Many factors may influence opportunities for achieving solitude, but encountering other visitors is considered a major factor. It has typically been assumed, and seems even trite to say, that opportunities for wilderness solitude decrease as crowding increases. But an important question in the management of wilderness is, "What are the tolerance limits for use encounters before outstanding opportunities for solitude are lost?"

Solitude is commonly defined as being alone, or as complete isolation from all other people. However, observations and studies of wilderness users in the United States indicate that they mean something different than complete isolation when they refer to wilderness solitude. Many visitors seek solitude and privacy in their wilderness experience, but studies indicate that most (97% to 98%) users go with others when visiting wilderness areas. They also tend to concentrate at popular destinations where encounters with other user groups are most likely. Rather than complete escape or isolation from other people, wilderness solitude seems to be more a matter of "being alone together" with members of one's group (Lee 1977; Stankey 1989). Solitude in the context of wilderness is more an issue of being away or having temporary freedom from certain social structures and environments than it is being isolated from individual people.

Research into the broader dimensions and functions of wilderness solitude indicate that solitude is only one dimension of the privacy that wilderness users seek, and that wilderness privacy is a more meaningful concept than wilderness solitude (Hammitt 1982; Hammitt and Brown 1984; Hammitt and Madden 1989). Privacy is not a permanent state of being, but a voluntary and temporary withdrawal of a person from general society through physical and psychological means, either in a state of solitude or small-group intimacy or, when among larger groups, in a condition of anonymity or reserve (Westin 1967).

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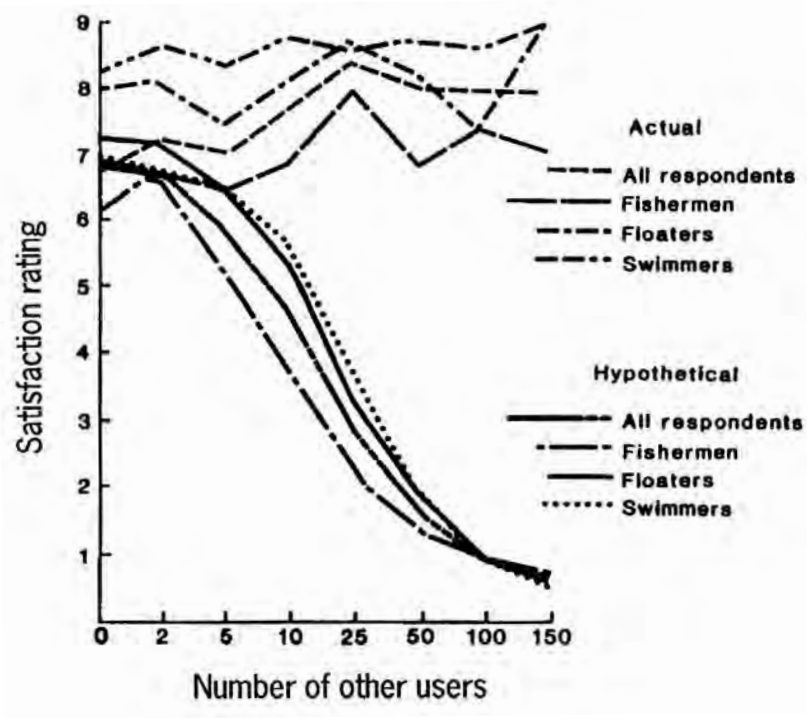
"Wilderness represents an environmental setting in which privacy—the ability to withdraw voluntarily from unwanted contact with others—is traditionally associated" (Stankey 1989). However, satisfaction with encounters, preferences for encounter levels, and crowding perceptions, rather than privacy, have dominated manager and research efforts to understand this aspect of wilderness experiences. As has been theoretically argued elsewhere, it is felt that the privacy component of the wilderness experience is more directly related to encounters with others than are crowding measures previously used (Hammitt and Rutlin, 1995).

Previous Research

Various approaches have been taken by scientists in trying to understand the relationship between wilderness recreation enjoyment, solitude, and use levels or encounters. In most cases, the number of people encountered during a trip, or each day of a trip, has been compared to various measures of user enjoyment or satisfaction in search of inverse

Figure 1—Relationship between use encounters and satisfaction under hypothetical and actual conditions.



(Source: Manning and Ciali 1980, p. 337)

relationships and encounter limits. Following is a brief summary of this research, organized according to the specific recreation experience variable emphasized.

Satisfaction Curves

Early research looked at the relationship between satisfaction level and number of users encountered. The idea of satisfaction curves was derived from accepted economic models, grounded in the evaluative criteria of maximum marginal return (maximum aggregate benefit) and willingness to pay (Alldredge 1973; Fisher and Krutilla 1972). Satisfaction curves from at least two studies (Stankey 1973; Cicchetti and Smith 1973) showed that wilderness users will have lower levels of satisfaction or reduced willingness to pay when asked their reaction to increasing hypothetical encounter levels in wilderness areas. Thus, hypothetical satisfaction curves have demonstrated the inverse "J" curve predicted by economic theory.

However, actual satisfaction curves have not demonstrated an inverse relationship between satisfaction level and encounter levels (Shelby and Nielsen 1975; Shelby 1976; Manning and Ciali 1980). There is little to no evidence that these satisfaction curves apply to real recreational settings (see Figure 1). Explanations for this apparent discrepancy between the hypothesized and actual relationship have centered around the fact that satisfaction is a multideterminant phenomenon and actual encounter levels are only one contributing factor to overall satisfaction level (Shelby and Heberlein 1986).

Encounter Preference Curves

Based on the return potential model (Jackson 1965) and normative models for perceived crowding, researchers next developed encounter preference curves. For example, canoers were asked their reaction to seeing one, two, three, five, seven, nine, fifteen, twenty, or twenty-five other canoers, inner-tube floaters, or anglers. There were five response categories: very pleasant to very unpleasant (Shelby and Heberlein 1986). From these data, encounter preference curves were developed to describe canoer norms for contacts with other canoers, inner-tube floaters, and anglers. However, these encounter preference curves are based on hypothetical use levels and potential user responses rather than actual response to encounters.

Tolerance/Acceptability Curves

Most recent research has evaluated visitor tolerance for contact levels to determine tolerance limits. Essentially a measure of maximum acceptable contacts, visitors are asked to identify the highest contact level they believe would be tolerable on a wilderness trip (Shelby and Heberlein 1986). Tolerance standards have been derived for various types of encounters (at campsites, along trails, with horses, with backpackers) and in various wilderness settings. In addition to asking recreation users for the maximum level of encounters/contacts they will tolerate, users have been asked for the use level that would be preferred.

Although tolerance/acceptability encounter curves are useful for understanding reactions to various use levels and offer a means of formulating management standards for tolerable or preferred use levels, these standard values still involve hypothetical situations rather than actual reaction to real conditions. Some researchers have criticized the procedure because it forces respondents to formulate tolerance standards when in fact they may not care about encounter levels and thus have not formulated valid opinions (Roggenbuck and Williams 1994). Only limited evidence exists concerning how these individuals react to actual encounters compared to these hypothetical standards.

Privacy Encounter Curves

Although The Wilderness Act of 1964 speaks of solitude in its definition of wilderness, actual measures of solitude have not been developed and analyzed in relationship to encounter levels, at least not in the research literature.

Investigation of the role human encounters play in achieving privacy, of which solitude is only one dimension (Hammitt 1982), also is limited in the recreation literature. In addition, privacy standards based on encounters experienced are nonexistent.

This Study

This article reports a study of the relationship between on-site encounter numbers at three site locations in wilderness and the level of achieved privacy. The premise underlying the study approach is that the achieved level of desired privacy received at various locations in wilderness is related to the number of user parties encountered at the locations. Thus, the research approach differs from most previous solitude research in primarily two ways: (1) achieved level of privacy is the experience variable, and (2) visitor estimations of actual encounter numbers is the influencing variable. The ultimate goal of this line of research is to arrive at tolerance limits for acceptable levels of encounters, with the ability to provide opportunities for wilderness solitude experiences.

Methods

Study area. Wilderness visitors were surveyed at the Ellicott Rock Wilderness during the fall of 1992 and spring, summer, and fall of 1993. Ellicott Rock Wilderness is located in the Sumter National Forest in northwestern South Carolina, the Nantahala National Forest in western North Carolina, and the Chattahoochee National Forest in northern Georgia. The wilderness area covers 9,015 acres, with the majority in South Carolina. Use is estimated at about 10,000 annual recreation visitor days, with about 75% of it occurring between May and November. Types and amounts of use are estimated as follows: day hiking, 40%; fishing, 30%; backpacking and overnight camping, 27%; and hunting, 3% (U.S. Forest Service 1992).

Sample size. A total of 607 respondents were surveyed during the yearlong study through use of an initial on-site contact survey and a follow-up mail questionnaire. Visitors were contacted at the wilderness area near one of four major trailheads. The sampling time spent at each trailhead was proportional to the use estimates provided by the U.S. Forest Service for the trailheads. Four-hour block sampling periods per day and sampling days were randomly assigned to the four trailheads. Everyone over the age of 16 was included in the survey. Thus, both day and overnight users were sampled during the 38 days of field sampling. A usable return rate of 71% was received on the mail questionnaire.

Operationalizing privacy. Wilderness encounters were defined for respondents as "number of other groups (parties) you saw regardless of size, or type of activity." Respondents were asked to report the number of groups encountered at three specific locations: trailhead, along the trail, and at campsite or other wilderness destination (e.g., for day use destinations). For each of the three wilderness locations (trailhead, along the trail, and at campsite or destination), respondents were asked to respond to the three following questions: (1) What was the actual number of groups you saw at each location?; (2) What was the maximum number of other groups you could tolerate at each location before your desired level of privacy was lost?; and (3) What is the ideal number of groups you would like to see at each location?

Wilderness privacy was operationalized by asking visitors about their "degree of desired privacy achieved while in the wilderness." Respondents were instructed to indicate on a 10-point continuum scale (1 being a low degree of desired privacy and 10 being a high degree of desired privacy) the "extent you achieved your desired level of privacy while in the wilderness."

Development of encounter standards and privacy response curves. Average values and variation measures were computed for actual, ideal, and maximum encounter levels at the three locations. Privacy encounter curves were formed by plotting levels of desired privacy achieved against levels of encounters.

Results

Privacy encounter standards. Table 1 shows the average number of ideal, actual, and maximum group encounters for the three wilderness site/locations investigated. Actual numbers of encounters typically exceed the ideal number and fall short of the maximum limit. Encounter standards increase in magnitude from destination to trail to

Encounters with others are more disruptive to achieving privacy when they occur at unique or remote destination sites. Photo by William E. Hammitt.

Table 1: Ideal, actual, and maximum group encounter standards for privacy achieved at three setting locations in Ellicott Rock Wilderness.

Use Encounter Standards (Means)

Location	*Ideal*	*Actual*	*Maximum*
At Trailhead**	3.76[a]	5.71[b]	8.68[c]
On Trail**	3.19[a]	4.12[ab]	6.58[c]
At Destination Site**	1.03[a]	2.24[bc]	2.46[c]
All Three Sites Combined	2.67	4.12	5.94

[abc]Mean pairs with different superscripts were significantly different (Duncan's Multiple Range Test), $p < 0.05$.

**Mean encounter values for each location were significantly different (ANOVA), $p < 0.001$.

trailhead locations. Thus, the privacy encounter standards vary in a pattern predicted by the conceptual literature, where actual encounter standards should fall between ideal and maximum standards, and where encounters are likely to have their greatest influence on privacy at campsite/destination locations. The amount of difference between the ideal and maximum encounter levels serves as a tolerance range for encounters at each of the wilderness locations. For example, the tolerance range for encounters at the trailhead is between three and eight parties, but at the destination it is a more conservative range between one and two parties. Of course, the maximum values can serve as the tolerance limit for each of the three locations; the maximum encounter level "before the desired level of privacy is lost."

The tolerance range values, as expressed in Table 1, are only average values. Although the "average ideal" encounter value for trailhead is 3.76, resulting in our suggested tolerance range of three to eight parties, one could assume that a range of zero to eight parties would be acceptable, as zero is less than the "average ideal" stated value. Some researchers have used percentile of respondents stating use encounters, instead of average encounters, to arrive at use encounter standards (Shelby and Heberlein 1986).

Wilderness privacy is not complete escape or isolation from all other people, but rather a matter of being alone with members of one's group. Photo by William E. Hammitt.

Actual encounter-privacy achieved standard curves. When the level of desired privacy achieved was plotted against the number of actual groups encountered, inverse "J" curves resulted (see Figure 2). These curves, based on privacy achieved and actual reported encounters, resemble the hypothetical satisfaction curves of Stankey (1973), but which have not been producible with actual encounter values (Shelby and Nielsen 1975; Shelby 1976; Manning and Ciali 1980). Thus, privacy appears as a more specific and sensitive measure than does satisfaction for determining the influence of encounters on wilderness solitude opportunities.

Two observations are evident from the curves in Figure 2. First, the level of desired privacy achieved increases as the number of actual groups encountered decreases, until the privacy level reaches about five. After this point, encounter levels appear little related to privacy achieved. This limited relationship between encounters and privacy achieved serves to remind us that encounters are likely to be only one of many factors that probably influence opportunities for achieving privacy in wilderness. Second, the pattern of influence of actual encounters on privacy achieved is similar for all three wilderness locations; only the magnitude of encounters varies. The curves in Figure 2 can serve as a basis for setting use encounter standards. For example, because the level of desired privacy achieved tends to level out at about five in Figure 2, one could use this point for determining associated use encounter standards, which in this instance would be: destination (two), trail (three to four), and trailhead (five) groups of users. However, using a desired privacy level of five, instead of four or some other value, for determining appropriate encounter standards is a management value decision.

Privacy Achieved When Ideal and Maximum Encounters Are Exceeded

If encounters are to affect the degree of privacy achieved, they are likely to have the greatest influence when ideal (preferred) and maximum (tolerance limit) encounter levels are exceeded by actual encounters experienced. To test this hypothesis, actual encounter levels were subtracted from ideal and maximum encounter levels for each of the three wilderness locations. This process resulted in six measures of how well ideal and maximum preferences were met by actual encounters. Then, for each of the six new measure comparisons, each respondent was classified into one of three groups: (1) less than (<) , meaning that their actual encounters were less than their ideal or maximum levels; (2) equal to (=), meaning actual encounters were equal to ideal or maximum levels; and (3) greater than (>), meaning that actual encounters exceeded ideal or maximum levels. For example, when comparing maximum versus actual destination encounters, the number of maximum encounters for an individual could be <, =, or > the actual number. After the classification, privacy means were calculated for each of the three groups within the six comparison measures (as in Table 2). Analysis of variance (ANOVA) and Scheffe's paired comparisons were used to test for mean significance differences.

Table 2 summarizes data for the encounter-exceeded measures and privacy achieved values. Privacy achieved was significantly different for all six of the encounter measures. For those individuals whose actual destination encounters exceeded their maximum destination tolerances, the amount of privacy achieved was only 5.77 out of a possible high of 10. Visitors whose actual encounters equaled their maximum tolerances for destination indicated a privacy level of 7.13; those whose maximum tolerances were not exceeded at the destination indicated the highest level of achieved privacy at 7.67. The amount of privacy achieved when maximum encounter tolerances are exceeded is significantly different from privacy achieved when tolerances are not exceeded (Scheffe's paired comparison, p = 0.05).

The same general pattern of congruency existed for both the trail and trailhead comparisons, where privacy achieved was greatest when actual encounters were less than ideal (<) and maximum levels of encounters, and least when actual encounters exceeded ideal (>) and maximum encounter levels. Of all the encounter comparisons, the trailhead differences showed the least amount of variance in privacy achieved (see Table 2).

Implications

The encounter-achieved privacy curves provide some relevant implications for managing specific opportunities for wilderness solitude. The privacy curves for actual, ideal, and maximum encounters, at three different types of locations in wilderness, serve as tools for determining tolerance zones for acceptable encounter limits. For example, if management wanted to designate specific sites or zone of wilderness for certain solitude opportunities, the ideal and maximum encounter values provide boundaries for determining encounter tolerance ranges for various levels of achieved privacy. This application of tolerance ranges for acceptable encounter limits is similar to the Limits of Acceptable

Figure 2—Level of desired privacy achieved for different levels of actual group encounters at three within wilderness settings. Privacy measured on a 10-point scale, where 1= low and 10=high.

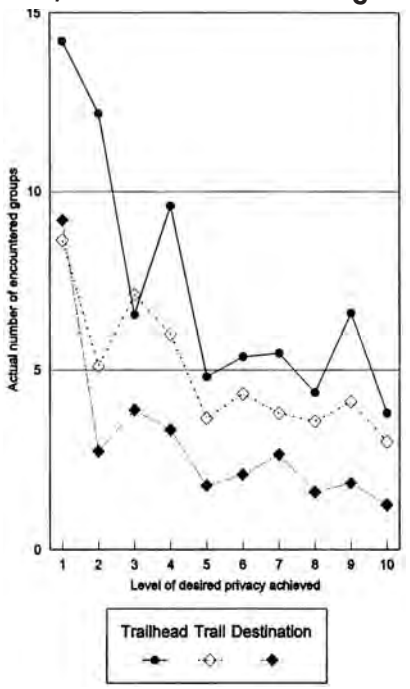


Table 2: Amount of privacy achieved when actual encounters are less than (<), equal to (=), or greater than (>) ideal and maximum levels of encounter.

	Privacy Achieved[1]			
Encounter Comparison	<	=	>	*Significance Level*
Maximum destination vs. actual destination encounter	7.67	7.13	5.77	0.001
Maximum trail vs. actual trail encounters	7.58	7.03	5.16	0.001
Ideal destination vs. actual destination encounters	7.57	7.53	6.38	0.001
Ideal trail vs. actual trail encounters	7.86	7.30	6.46	0.001
Maximum trailhead vs. actual trailhead encounters	7.41	6.60	5.75	0.001
Ideal trailhead vs. actual trailhead encounters	7.62	6.56	6.69	0.004

[1]Privacy achieved on a 10-point scale, where 1=low degree of desired privacy achieved, and 10=high degree of desired privacy achieved. < means that actual encounters were less than ideal or maximum, = means actual encounters were equal to the other two, and > means that actual encounters exceeded them.

Change (LAC) concept (Stankey et al. 1985). However, the LAC concept emphasizes the setting of limits, or the maximum encounter value in our case. By using both the ideal and maximum encounter values as boundaries, a tolerance range for sites, user types, or other designations can be estimated. As long as actual use encounters are within the tolerance zones, opportunities for solitude/privacy-related experiences should exist, at least as related to use encounters.

The use of achieved privacy and tolerance zones of use encounters as indicators of opportunities for wilderness solitude makes sense from a conceptual point of view, also. For example, privacy is not the opposite of crowding, per se. Crowding encounter studies emphasize the maximum encounter limit. Privacy emphasizes the tolerance zone between ideal and the maximum encounter values. Privacy is seen as a means to control situational environments from becoming crowded. Crowding occurs when privacy maintaining mechanisms break down (Altman 1975), when the tolerance zone for encounters has been exceeded. According to Altman, privacy is an "interpersonal boundary-control process" that regulates social interaction with others to provide a person with a desired level of privacy. Thus, in the case of providing opportunities for wilderness solitude/privacy, the ideal and maximum encounter values for achieved privacy can serve as indicators of the boundaries necessary for maintaining a desired level of achieved wilderness privacy.

A final conclusion involves a cautionary note concerning the role that use encounters can be expected to play in level of desired privacy achieved. Though it has been argued in this article for privacy as a dependent measure in encounter studies, we certainly realize that privacy is a complex concept that involves more than number and place of encounters. The degree of need, motivation, and desire for privacy among hikers and backpackers is likely to influence the specificity of encounter responses and the influence of encounters on privacy achieved. **IJW**

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THE INFLUENCE OF ADJACENT LAND ACTIVITIES ON WILDERNESS RESOURCES

U.S. Wilderness Manager Perceptions

By Aaron R. Kelson and Robert J. Lilieholm

Abstract: Wilderness resources are often influenced by external conditions, yet managing resources across boundaries is a difficult challenge for wilderness managers. A survey of U.S. wilderness managers identified the perceived impacts of 60 adjacent land activities on resources within wilderness. Only a few activities were consistently thought to have serious impacts on wilderness. The adjacent land activity with the highest manager consensus about impact is fire management. Military and commercial overflights, exotic plant introduction, air pollution, and off-road vehicle use were also rated highly. Some high-profile activities, such as industry smoke plumes and oil and gas extraction, are perceived to have little impact on wilderness.

THE UNITED STATES NATIONAL WILDERNESS PRESERVATION SYSTEM (NWPS) includes 103.5 million acres in 630 wilderness areas within 44 states. The remarkable growth of the NWPS has been accompanied by an increase in the complexity of wilderness management issues. One of the most challenging issues facing U.S. wilderness managers today is the impact that activities located beyond wilderness borders have on wilderness resources—transboundary issues.

Concerns about transboundary issues were expressed as early as the 1930s, but did not receive serious attention until the late 1960s (Freemuth 1991; National Park Service 1980). When The Wilderness Act was passed, much of the scientific community was still confident that ecological systems could be sustained within the confines of natural "museums" (Christensen 1995). Consequently, wilderness managers rarely considered external conditions when making decisions. The issue was often moot anyway as most protected natural areas in the United States at that time were still surrounded by vast areas of undeveloped lands (Coggins 1987).

As the nation's population and economic activity grew, neighboring development and resource extraction began to encroach upon protected natural areas, reducing the size and effectiveness of de facto buffers. As a result, attention given to transboundary-related issues intensified throughout the 1970s, prompting one study to conclude that adjacent land conflicts are "often built in from the outset, assured by where boundaries are drawn" (Shands 1979).

Today, a growing body of evidence documents the interdependency between protected areas and their adjacent lands. For example, many scientists agree that even the largest national parks in North America have little chance of supporting, within their boundaries, the "charismatic megafauna" that attract many visitors (Lomolino 1994; Soule 1991; Keiter and Froelicher 1993). One explanation given for this conclusion is that habitat dependent upon large-scale disturbances, such as natural fire regimes, cannot be replicated by smaller-scale managed disturbances (Baker 1992).

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In addition to ecological values, wilderness protects many human values, such as solitude, primitive recreation, and scenic beauty. Human values may also be affected by external activities and conditions. Oil and gas development, timber harvesting, and mining on adjacent lands may lead to dramatic increases in wilderness visitation, because the associated road building improves access to wilderness boundaries (Goldstein 1992; Sax and Keiter 1987). Aircraft overflights degrade the solitude and primitive recreation aspects of wilderness (Tarrant et al. 1995). In addition, visibility impairment from pollution has induced natural area visitors to make economic sacrifices, such as varying trip schedules or traveling greater distances to substitute sites with better visibility (Bell et al. 1985).

The relationship between protected areas and adjacent lands now must be considered in advance of designation. For example, a review of public comments submitted to the U.S. Bureau of Land Management (BLM) for the Utah BLM

Table 1: Adjacent land activity rankings by mean impact and by nonzero responses (n=92).

Activity	MEAN IMPACT Mean[1]	S.E.	Rank[2]	NONZEROS Number[3]	Rank[3]
Fire Management	5.70	0.35	1a	80	1
Military Overflights	4.90	0.35	2ab	75	6
Exotic Plant Introduction	4.34	0.35	3bc	72	9
Air Pollution	4.09	0.32	4bcd	79	2
Off-road Vehicle Use	4.03	0.31	5bcd	76	4
Commercial Overflights	3.99	0.33	6bcde	76	4
Motor Vehicle Noise	3.76	0.33	7cdef	73	8
Hunting	3.60	0.29	8cdefg	78	3
Camping	3.54	0.29	9cdefgh	71	10
Vandalism	3.36	0.33	10defghi	69	11
Timber Harvests	3.32	0.32	11defghi	65	13
Road Maintenance	3.29	0.32	12defghi	64	14
Poaching	3.26	0.28	13defghi	75	6
Second Homes/Cabins	3.13	0.33	14efghij	61	17
Horseback Riding	3.11	0.32	15efghij	62	16
Illegal Outfitting	2.95	0.30	16fghijk	66	12
Grazing	2.86	0.34	17ghijk	55	24
Mountain Biking	2.85	0.29	18ghijk	61	17
Road Construction	2.83	0.30	19ghijk	61	17
Fixed Wing Aircraft Tours	2.79	0.35	20ghijk	52	27
Community Expansion	2.74	0.33	21hijk	53	26
Acid Rain	2.60	0.29	22ijk	63	15
Non-native Fish Stocking	2.52	0.34	23ijk	47	31
Cultural Resource Vandalism	2.41	0.28	24jk	61	17
Fishing	2.30	0.25	25k	61	17
Water Pollution	2.29	0.27	26k	60	22
Helicopter Tours	2.27	0.32	27k	45	33
Retirement Homes	2.25	0.31	28k	48	29
Motor Vehicle Exhaust	2.24	0.29	29k	55	24
Global Warming	2.23	0.27	30k	56	23

[1]Activities were rated on a "0 to 10" scale with "0" being "no impact" and "10" being "serious impact" on wilderness resources.
[2]Rankings followed by the same letter are not statistically different from each other at p=0.05.
[3]Number of responses out of 92 that indicated that the activity is having at least a minimal impact on wilderness resources (i.e., a rating of "1" or higher).

Statewide Wilderness Final Environmental Impact Statement found that transboundary management concerns were arguably more significant to the BLM wilderness debate than wilderness designation itself (Lilieholm 1995; Lilieholm and Kelson 1996).

Despite the importance of the issue, legal authority for federal land management agencies to manage resources across administrative and ownership boundaries is tenuous, even if the wilderness and its adjacent lands are managed by the same agency. Most U.S. wilderness legislation passed since 1983 contains "buffer zone preclusion language." Such language in the Utah Wilderness Act of 1984 (P.L. 98-428, 303) is typical: "Congress does not intend that designation of wilderness areas in the State of Utah lead to the creation of protective perimeters or buffer zones around any wilderness area. The fact that non-wilderness activities can be seen or heard within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area." This language recognizes that adjacent land activities could be regulated from the application of environmental laws other than wilderness legislation.

The courts have been reluctant to interpret existing environmental statutes as giving federal land managers explicit authority to manage resources across administrative borders (Keiter 1990). This has led some to conclude that to address transboundary issues, resource managers will need additional legal support or clarification (Coggins 1987; Keiter 1994). Thus, with minimal legal support for addressing transboundary management concerns, yet faced with growing evidence of their importance, wilderness managers face a dilemma. They can address transboundary issues directly at legal and political risk, or they can ignore them and risk continuing resource damage and perhaps legal challenge.

Wilderness managers need a broader understanding of the relationships and linkages between external activities and wilderness resources (Cole 1994), as a basis for changes in transboundary-related laws and policies. An important first step in formulating solutions is to identify the most serious transboundary problems in order to focus research and management efforts. That was one purpose of this study.

Methodology

A questionnaire was developed to measure wilderness managers' perceptions of the impact of 60 adjacent land activities on the wilderness resources they manage. The activities were identified from a thorough review of literature, comments from U.S. Forest Service (USFS) wilderness managers, and a phone survey of BLM wilderness managers in the Intermountain region of the United States (Lilieholm 1995; Lilieholm and Kelson 1996). The activities identified represented a wide range of transboundary wilderness issues, including such diverse activities as open-pit mining, cross-country skiing, and predator control.

A stratified random sample of 101 (n=493) wilderness managers affiliated with wilderness areas that were established prior to 1990 was selected for the study. Sample size was determined from the response variance found in the preliminary BLM phone survey (Lilieholm and Kelson 1996). The 1990 establishment cutoff date was used because it was felt that many of the issues included in the questionnaire required several years to emerge in wilderness. The sample was stratified across four wilderness size categories: (1) less than 10,000 acres, (2) 10,000 to 49,999 acres, (3) 50,000 to 249,999 acres, and (4) 250,000 acres or more. Other stratification methods were considered, including stratifying by agency or geographic region. However, size was used because it is often considered to be the most important factor in determining how successfully a given area can sustain managed resources (Cowling and Bond 1991; Noss 1991).

The 101 questionnaires were mailed in September 1995, with one follow-up mailing in October. A 92% response rate was achieved. Of the 92 questionnaires returned, 67 were from USFS managers, 13 were from U.S. Fish and Wildlife Service (USFWS) managers, 9 were from U.S. National Park Service (NPS) managers, and 3 were from BLM managers. In all, 30 different states were represented.

Respondents rated the impacts of the 60 adjacent land activities on the resources they managed using an 11-point simple-rating scale with "0" being "no impact" and "10" being "serious impact."

Results and Discussion

Table 1 shows the 30 highest-rated adjacent land activities for all the wilderness areas represented in the study ranked according to mean impact ratings and with standard error reported. The number of times an activity was given a nonzero impact rating is also reported, and the activities are then ranked by that measure. The nonzero ranking can be interpreted as the "degree of consensus" among wilderness managers that an adjacent land activity does impact wilderness.

Wilderness areas such as the Mount Timpanogas Wilderness Area in central Utah face a variety of adjacent land pressures. Photo by Larry Rosjer.

Mean impact ratings and their standard errors quantify the relative impacts of the diverse adjacent land activities on wilderness resources. Among the highest-rated activities were fire management, military overflights, and exotic plant introduction. Air pollution, off-road vehicle use, and commercial overflights were also highly rated. However, when one considers that half of the 30 highest-rated activities have a mean impact rating less than "3," it appears that few adjacent land activities were considered really serious across the full geographic range of the study. However, degree of consensus rankings indicate that there is widespread (if low level) concern about the impact of adjacent land activities on wilderness. When measured by the degree of consensus, the 10 highest-rated activities are of at least some concern to 77% or more of the wilderness managers who participated.

It is important to note that 43 out of the 60 adjacent land activities received at least one rating of "10," indicating a perceived "serious impact" to wilderness resources. Further, all activities received at least one rating of "7" or higher. This indicates that perceived impacts of many important adjacent land issues are limited to particular wilderness areas or specific geographic regions. Some adjacent land issues may be more likely to capture national attention because of their emotional appeal, such as wildlife-related issues, air pollution, and acid rain. Others, though not as salient to the general population, may be more important to the preservation of wilderness resources than some high-profile issues. Table 2 shows results for some high-profile, often controversial, activities that managers felt were much less threatening to wilderness.

One of the most challenging issues facing U.S. wilderness managers today is the impact that activities located beyond wilderness borders have on wilderness resources … .

Measuring the perceived impacts of adjacent land activities on wilderness

Table 2: Adjacent land activity rankings for selected high-profile activities not included in the 30 highest rated activities.

	MEAN IMPACT			NONZEROS	
Activity	Mean	S.E.	Rank	Number	Rank
Communication Towers	2.03	0.26	34a	50	28
Industry Smoke Plumes	1.92	0.28	35ab	47	31
Open-pit Mining	1.26	0.26	43bc	24	50
Power Plants	1.15	0.25	46c	26	47
Municipal Water Diversion	0.92	0.23	52c	22	52
Oil and Gas Extraction	0.74	0.22	57c	16	58

resources via managers' qualitative assessments is imprecise. However, despite limitations, qualitative judgments by experts are often used to evaluate natural resource activities when the cost of more precise quantitative analyses are prohibitive. The ranking of activities by nonzero scores provides important additional information that can be interpreted to be the degree of consensus among wilderness managers about which adjacent land activities impact wilderness.

Summary

This study identifies the degree of impact of wilderness as perceived by wilderness managers. Among the highest-rated activities were fire management, military overflights, and exotic plant introduction. Air pollution, off-road vehicle use, and commercial overflights were also highly rated. A review of the highest-rated activities indicates also that many of the most significant adjacent land issues are intra-agency based. Timber harvests, grazing, and off-road vehicle use are examples of multiple-use management objectives that may conflict with wilderness preservation objectives. **IJW**

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ARCTIC RIVER JOURNEY

The Impact of a Wilderness Experience

By David F. Pelly

Abstract: This article follows the transition of 24 young people in their evolving relationship with an Arctic wilderness environment, during a seven-week scientific expedition by canoe on an Arctic river. Through excerpts from the trippers' journals, a moving account of the interaction between people and wild places is offered, with a diversity of surprising elements, including the strength of the team approach, the influence of journal writing, the long-range impact on people's lives of such a deep wilderness experience, and the effect of wilderness isolation on human interaction. Though focused on youth in this example, the central message nonetheless resonates through any wilderness encounter for people of any age.

ABOUT A HUNDRED YEARS AGO, a missionary met an Indian on the edge of the barrenlands in the part of Canada we now call the Northwest Territories. Saltatha was Chipewyan; his people depended on the caribou for their every need, from food to clothing and shelter. Saltatha knew the barrenlands well. The missionary, no doubt a well-intentioned man, was a stranger to this land at the very edge of white people's sphere of knowledge. He was there for a reason; he proceeded to tell Saltatha of the peace and beauty that awaited them in Heaven. Saltatha listened carefully. When the missionary finished, Saltatha spoke: "My father, you have spoken well; you have told me that Heaven is very beautiful. Tell me now one thing more. Is it more beautiful than the country of the musk ox in summer, when sometimes the mist blows over the lakes, and sometimes the water is blue, and the loons cry very often?"

For Abdul Hasnie from Pakistan, or Choi Siu Ping from Hong Kong, or Osama Abdeen from Jordan, or Ashley from Florida, or even Leslie from Toronto, a summer in the land that Saltatha forthrightly compared to Heaven was bound to be a novel experience. For 24 young people, aged 18 to 23, from 11 different countries, it was a challenge, an adventure, an awakening.

They were members of a multidisciplinary scientific expedition in Canada's Northwest Territories. On the Kazan River—one of the wildest, most rugged, and beautiful in the barrenlands—we canoed 350 miles from Angikuni Lake to Baker Lake over a period of 45 days. That is not an impressive rate of travel among canoeists—explained by the fact that along the way we walked 200 miles of transects over the tundra looking for archaeological evidence of Saltatha's people, his predecessors, and their Inuit neighbors. We also conducted other biological and palynological field studies. It was a busy summer of hard work and constant learning for everyone involved—much more than a canoe trip.

These young people experienced the Kazan's environment on many levels: They studied its soils, plants, birds, mammals, and its record of former human habitation, at the same time that they marveled—as Saltatha would have wished—in its isolation and natural splendor. Inevitably, this beauty had quite an impact right from the start:

> The cloud cover has cleared a little and we are having our first glimpse of the Arctic tundra—it looks serene and somehow waiting for us to arrive. Snow still dots the land in places—and the tundra looks a basic brown from this far up. The yellow sun is glinting off thousands of lakes dotted about the land like puddles of water on a concrete pane.
>
> *—Sonia Mellor, Australia, July 1, written in floatplane*

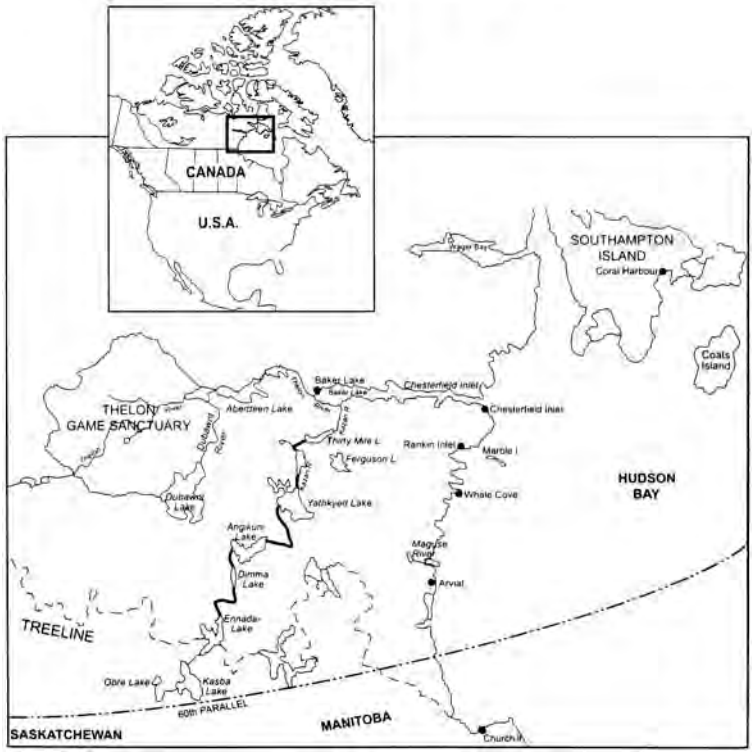
Article author David F. Pelly. Photo by Laurie M. Pelly.

Sudden displacement into the center of the barrenlands—dropped off by a floatplane—was an impressive, somewhat anxiety provoking, but exciting experience for all 24 who had come there from the far corners of the world. That initial camp was on the shores of still ice-covered Angikuni Lake, right beside where the Kazan flows out in a burst of rushing white water. Just a few hundred yards across the tundra was an old Inuit grave, the skull staring up from beneath a pile of boulders. While we were there, grazing caribou ranged over the surrounding tundra, and more than once walked practically into camp.

The land took only a few days to embrace the young people. Very quickly the Arctic barrenlands displayed its varied moods.

> July 7—The rain and wind struck about midnight and stayed all day. The temperature dropped to about 40°F and the wind, at 25 to 30 knots, whipped up white horses on the lake. July 13—Long, hot, still days with temperatures 80°F in the shade and over 90° in the

The Kazan River Region



sun. However, one must share the few shadowy spots with thousands of mosquitoes and black flies."

—Kassie Heath
Australia

This, quite naturally, is the first level on which people adjust to their new environment: physical comfort, or rather discomfort. It is when they become comfortable, physically, in the environment that they are ready to move on to the next level in their relationship with the wilderness.

We had a big advantage, as an encouragement of this development, in that our scientific projects forced everyone to go out and experience the environment itself, to walk on the land, to examine it carefully, document its plant growth, watch for and identify its birds, record its subtle clues of previous human occupation—all of this inevitably put each person in touch with the wilderness around him or her. Leslie Mack-Mumford, a Canadian, wrote in her journal, "I think I'm finding the nothing in this country of miles and miles of nothing." Reflecting back afterward, Sonia Mellor of Australia said, "In my journal, I started to draw things like sunsets, wildlife, or just the land, walking on the tundra, perceptions. To me that was really interesting, because it was the first time the land itself, the environment, touched me so much."

Once people felt comfortable with the barrenlands environment, they could move on to new levels of understanding and relating. Different participants moved, naturally, in different directions, at different speeds. Some, reveling in the scientific fieldwork, found themselves examining the world around them in unprecedented ways.

I saw a wolf on a boulder shore. This was my first experience with the wolf, because my country is a modern commercial centre. I was excited and scared. The wolf stared at me with shining eyes from 10 yards. It went away after about 20 seconds but it was a very long time for the two of us. It had a den underneath the boulders. I heard the voices of the young. I will never forget this contact with the wolf."

—Choi Siu Ping
Hong Kong

For some participants, the archaeological work had the most profound impact, as it transported them back through time, to an era when other people lived along the Kazan River. Finding stone structures and an array of artifacts on the surface led to knowing that someone—50, 100, 300, or several thousand years ago—was responsible for making it and leaving it there, possibly undiscovered through the intervening years. On one occasion we stopped for several days to conduct an archaeological dig, exposing layer after layer of life from within an old tent-ring. "What had been [an empty] landscape when we first walked on it, now became a living environment for the people who were once there. Sometimes I would sit on a high spot and imagine all those people walking around and working and putting meat into caches and smashing the bone to extract marrow. The landscape became something more than just a beautiful place for canoeists. It became somebody's home," wrote Hillary Woodward from England.

Through this sort of experience the expedition felt the impact of Native people who once lived there. An even more profound Native influence came to us in the form of a Dene Indian participant. Betty Ann Betsedea came from Wrigley, a tiny village on the banks of the Mackenzie River, about one-third of the way downstream from Great Slave Lake to the Arctic Ocean. The barrenlands are not her people's traditional territory; she felt somewhat strange in a setting without trees. But the concept of living with the rhythm of the land, the river, and the sky was as natural to her as breathing. Those who traveled closely with her commented on it without exception. I said in the beginning, with some pride, that we had adopted a "multidisciplinary approach" to our scientific fieldwork. To Betty Ann, it seemed perfectly normal. If it must be summarized, I think the perspective that Betty Ann validated for others is best termed holistic. That is how she saw the land, its wild inhabitants, its ancient hunters—all part of a natural system. The message was not lost on those making the journey beside her. By the end of the third week

of the trip, midway in the process, every participant had evolved quite some distance from their earliest relationship with the barrenlands. It had become "home" for them, in some sense. There existed a new familiarity and understanding. Simply staying comfortable, by now, seemed incidental, natural. They had found the rhythm of the land and of their own journey through it. This heightened familiarity shows up in the journals in many ways, but not just in words. In the latter stages of the expedition, most of the participants who were keeping journals began drawing maps, sometimes simple schematics, sometimes complex works of art or detailed site plans. Whatever their form, "maps" aided them in describing their experience and relationship with the land, suggesting a heightened sensitivity to the environment.

"Somehow the people have lost significance, or at least their urgency in my thoughts. The land and its rhythms have gained predominance," wrote Kassie Heath, in a telling entry from her journal.

> *"All landscapes ask the same question in the same whisper: I am watching you—are you watching yourself in me?"*
> —Lawrence Durrell

It is one thing to bring a group of young people into the wilderness—in all probability that process in itself will set them to thinking about the place, developing a "landscape of the imagination." It is quite another to have them empowered by that landscape to look into themselves. Toward that end, journal keeping is at the very least a positive influence. The mere process of writing pushes the participant to appreciate the greater depths of their experience. Perceptions become finer. Journal writing develops eyes that can see and ears that can hear more of what is going on around the writer.

Journal keeping during a wilderness experience develops one's ability to express "wonder," the inevitable response to something large and spiritual, such as the wilderness. It is the manifest power of geography, of the land. On some level, just as the physical journey stands as a metaphor for life's quest, the writing of a journal becomes the search for meaning. That searching is most apparent in the final pages of a few of the participants' journals. "There is such a loving, soft vulnerable part to me—but I lose it when I lead. I lose my softness to a self-disciplined monster. It's why I dropped out of university the first go round, because I thought it would lead me to a tough, business type character. I became frightened of that tough, lonely person."

"As this journey is drawing to a close, I am just starting to realize that as one episode closes, so many doors open up. I will carry with me, for the rest of my days, my experiences on the Kazan. Already [new] plans have been laid for the future, different plans to the ones I began with."

Asked afterward to comment on what value the journal-keeping process had for them, several responded:

"I think my journal's made me really aware that I was learning lessons."

"I felt it was a great outlet for my emotions. Sometimes I would read back those writings and learn a little bit about myself and why I was feeling like that. It was a tool, in a way."

"There's a lot in my journal that I haven't even told my family or friends. So it was quite a step for me to actually write down what I was really feeling."

The experience of merely writing a journal added to the impact of the expedition itself. Not only did the journal-keeper create a record of their journeys, both physical and spiritual, but the journals themselves became an instructive "tool," as one put it. There are elements of the wilderness experience, and of the individual's personal growth, that could not have emerged had they not been keeping a journal. The journal is not a guarantee of success—real personal success—in a journey, but it is arguably a necessary component.

Summer canoeing in the Arctic—a canoe on the Kazan River in early July. Photo by David F. Pelly.

> *The completed journey always ends with a return, a homecoming to the ordinary world of conventional reality that was left behind. This world has been transformed, if our journey has been successful, into a new world, seen with fresh eyes. The end of the journey is the beginning of a new, empowered way of life.*
> —Ralph Metzner, *Opening to Inner Light*

It is now eight years since all these journal entries were written, since these 24 young people canoed down the Kazan River. The questions inevitably arise: What has happened to them since? What power did the land exert upon them that has affected their lives?

It's best to answer that by citing a few examples. Jeremy Tate returned to England after the expedition, left his job at British Telecom to enroll at university, an option he had not previously felt possible, and three years ago he graduated with an Honours BS in oceanography and now works on projects around the world. Leslie Mack-Mumford from Toronto has spent the last

Some of the young participants standing in a circle, sharing their thoughts—in the foreground is Betty Ann Betsedea, a Dene Indian from the Mackenzie Valley in the Northwest Territories. Photo by David F. Pelly.

few years variously studying environmental science at McGill University in Montreal and learning about organic farming and shiatsu in northern British Columbia. Eddy Chong returned to his ad-copy writer's desk in Singapore, lasted a couple of years, then decided he needed to find a more "human" field of endeavor. He recently graduated from a university in the United States with a degree in physiotherapy. Simon Cremer began environmental studies in England then spent his practicum year in Honduras, as a volunteer with a development project on the Miskito coast. Sonia Mellor, in Australia, wrote to me the year after the expedition, with a report of her progress:

> To the trip's credit, I have become a lot more environmentally aware. My thoughts were the first things to change after my journey through the barrenlands—then followed an evaluation of what was important to me. So much that I had taken for fact I questioned—and continue to do so. I have the self-confidence in my convictions that I lacked before. I started volunteer work for a conservation foundation, where I got heavily involved in a campaign to save some virgin Eucalyptus forest in the southeast corner of New South Wales—the area has trees over 300 years old, up to 200 feet tall and supports a huge range of wildlife and flora—all this beauty and the state government can justify chopping it down and sending it as woodchips to make paper in Japan—ARGHH!!

She went on, eventually describing her plans to do graduate work in environmental science. She now has her MS and works for the National Parks Service in Australia.

The Kazan River experience gave each of the participants a heightened environmental awareness and concern … lent each one of the young people a new-found confidence in themselves … offered them, because of our multicultural composition, a new view of their place on the planet … allowed them to probe within themselves … enriched them with a profound respect for the value of close human contact … and gave them the courage to set their sights high. All of these phenomena emerge in the letters that have accumulated from the many corners of the globe in the past eight years.

One line in one letter, from Kassie Heath in Australia, perhaps sums them all up: "Dreams can be made to come true—my summer taught me this." The unspoken question at the outset was "What impact did an expedition in the Arctic wilderness have on these people and how was it achieved?" The answer is evident in their own words. That is how it should be. We, the leaders, did not preach or lecture. We simply led the horse to water and invited it to drink. We gave these young people an exposure to the natural world, in its finest barrenland glory. They decided to let it impact upon them—they decided how, they decided when, and in what way. The barrenlands left an impression on them all—not unlike that expressed by Saltatha.

If there were lessons learned and values acquired—and I think there were—then it is the great teacher that we have to thank: the land. **IJW**

David F. Pelly has been writing about the Arctic for 20 years, focusing on wilderness themes derived from thousands of miles traveled by canoe and foot in summer and dogsled in winter. He has been widely published in magazines and is a frequent lecturer in Canada, Britain, Germany, and the United States. His fifth book on the Arctic, its history, the land, and its people was published in 1996. Titled *Thelon: A River Sanctuary,* it is about the largest and oldest wilderness preserve anywhere in North America (see book reviews, p. 45). Pelly currently lives in Ikaluktutiak on Victoria Island, 200 miles north of the Arctic Circle.

He has delivered an expanded version of this paper, "Arctic Journey—The Impact of a Wilderness Experience," to several thousand people in Canadian audiences for outdoor education conferences, teachers conventions, wilderness groups, and public lectures. The slide show-talk draws effectively on the voices of young wilderness travelers, accompanied by stunning images of the Arctic, to present an inspirational message. David can be contacted at Box 1097, Cambridge Bay, Northwest Territories, Canada X0E 0C0. Telephone/fax: (403) 983-2648; e-mail: pelly@internorth.com.

THE INTERNATIONAL APPALACHIAN TRAIL

Spanning a Two-Nation Bioregion

By Wilfred E. Richard

THE APPALACHIAN TRAIL (AT) IS A NATIONAL FOOT PATH created more than 50 years ago and follows the natural landscape of the most prominent inland feature of the eastern United States: the Appalachian Mountains. Its length, running from Springer Mountain, Georgia, to Mount Katahdin, Maine, is approximately 2,200 miles (3,540 kilometers). However, the International Appalachian Trail (IAT) or the Sentier International des Appalaches (SIA) is a more recent creation, first begun only in the mid-1990s. In the United States it picks up in northern New England near the northern terminus of the AT and runs north and east, following the Appalachian region into Canada through northwestern New Brunswick and into the central Gaspé region of the province of Québec. This additional length represents another 435 miles or 700 kilometers, though the exact length is still to be determined. The interesting story, however, is following the complex process through which two sovereign nations, two languages, two cultures are constructing a footpath onward, north and south, through North America's Appalachian Mountains. It is this process that I discuss here.

Proposed route of the Sentier International des Appalaches/International Appalachian Trail. Map by Geo-Systems.

A Man and an Idea

In the 1950s and 1960s, a young Maine resident, Richard B. "Dick" Anderson, avidly fished the salmon rivers of northwestern New Brunswick and the "Gaspésie" region of Québec. This place became Dick's "special place." Dick went on to earn a degree in fishery biology at the University of Maine at Orono, became executive director of the Maine Audubon Society, and, in the early 1980s, Maine's commissioner of conservation. Thus his orientation to this cross-border region of Canada was given an outlet at a policy level, and he provided leadership to several initiatives, such as establishment of the St. Croix International Waterway Commission, a cross-border river planning authority (Richard 1991), and the attempted reintroduction of caribou into northern Maine from herds in Newfoundland. These cross-border initiatives came in a region where cross-border dialogue has traditionally been the way of doing things—even back to the War of 1812 when both Canadian Maritimers and Maine Downeasters provisioned the British Navy with food and other stores (Davis 1970), and onto the joint initiative that established and manages Roosevelt–Campobello International Park on a New Brunswick island located off the coast of Maine (Richard 1992, 1993).

The international border between Maine and the Canadian provinces of Québec and New Brunswick was established through the Webster–Ashburton Treaty of 1843 to avert a war by separating Loyalists and Americans along with forest and agricultural resources. A century and a half later, the IAT/SIA is envisioned as a bioregional means to bring people together in a peaceful manner within a recreational and economic context.

During the gubernatorial campaign in April 1994, Dick's idea of the IAT/SIA was publicly supported by then-candidate

The proposed route would connect with an existing trail in the 802-kilometer Parc de la Gaspésie. Photo by Wilfred E. Richard.

Brennan who on Earth Day stated "this narrow trail connecting the special wild places in each of our political jurisdictions will serve as a reminder that the mountains and the rivers and the forests are our real heritage, our common biological and geological bond." The concept and proposal were picked up, and media from Boston to Los Angeles ran stories on the trail.

One Trail: Two Cultures

At the northern end of the AT is the state of Maine, which shares a border, about evenly, of 630 miles (roughly 1,000 kilometers) with the Canadian provinces of Québec and New Brunswick. Maine has the unique distinction among the "lower 48" of having the greatest percent of its land border with another nation. As a consequence, Maine has long been both a transit point and place of migration for both English and French Canada. Much of the Canadian land mass contiguous to Maine is represented by the French culture and language. As the IAT/SIA also traverses this French region, communications along it are expressed in two languages: English and French. And the trail has two official titles: The International Appalachian Trail (IAT) and The Sentier International des Appalaches (SIA). The IAT/SIA utilizes these two acronyms in the form of a "T" with SIA as the horizontal member and IAT as the vertical member. This is the official trail logo of the IAT . All publications of the trail and trail signs are printed in both French and English and the metric system is used to convey distances. The 700-kilometer trail is scheduled for completion on Earth Day in the year 2000.

The Appalachian Bioregion

The region is defined by the Appalachian Mountains. If one were to conduct an on-the-ground examination of this Maine-Québec-New Brunswick corner of North America, one would find many more similarities in geological composition, vegetation, and wildlife than dissimilarities. The Appalachian chain, as the geological backbone of this region, runs to the north through Maine, New Brunswick, and then continues to the tip of the Gaspé where it submerges under the Atlantic Ocean before re-emerging on the island of Newfoundland, which with Labrador was the 10th and last province to join the Canadian federation.

The weather and climate of this bioregion, from sea level to the heights of the Appalachians, are dramatically influenced by the north Atlantic Ocean. Vegetation is similar, represented by large stands of spruce and fir forests, which serve as the basis of the Northeast's pulp and paper industry; species of wildlife are also similar. However, there is a greater incidence of animal life that is higher up in the food chain as one goes farther north where eagles, moose, deer, bear, coyotes, and even wolves and caribou are found. Agriculture practices have resulted in large potato fields and dairy herds, spring peas, winter broccoli, and impressive stands of rye, wheat, and barley. And, most recently, the growing of flax for linen has been reintroduced.

But the central unifying factor in the region is one geological feature—the Appalachian Mountains. Each one of the three political entities of Maine, Québec, and New Brunswick are represented in the trail by a prominent point of reference. The highest point in each of these three IAT/SIA states are: Katahdin (5,268 feet; 1,606 meters), Jacques-Cartier (4,160 feet; 1,268 meters), and Carleton (2,690 feet; 820 meters), respectively. Actually, the trail constitutes a somewhat forced geological configuration in order to fit these three jewels as the center pieces of the trail. Mount Carleton is a geological feature, a few miles removed from the contiguous Appalachian massif.

The Trail Sine Qua Non: A Shared Cross-Border Endeavor

There are other regional considerations—primarily economic. Northern Maine, the Gaspé, and northwestern New Brunswick share an economy that is largely natural-resource based. An often experienced consequence of this "end of the road" border location is a lack of economic activity. Thus, a cross-border trail could serve as an international draw of tourist-recreationists and their dollars—both Canadian and U.S.

Trail Politics

To quote then-gubernatorial candidate Brennan, "The International Appalachian

Trail/Sentier International des Appalaches is a symbol of U.S.-Canadian commitment to work together as neighbors, to sustain our common environments, and to celebrate the grandeur of our common landscape. It connects mountains, crosses rivers, threads through spruce and fir forests, and connects the people and cultures of the state of Maine and the provinces of Québec and New Brunswick." (Maine Chapter of the IAT, no date).

And from the *SIA/IAT Newsletter* (summer 1995), the general philosophy of "SIA/IAT Rules of the Trail" is: The SIA/IAT is an international footpath traversing the Appalachian chain of mountains from Mount Jacques Cartier, Quebec, in the north, to Mount Carleton, New Brunswick, and on to Mount Kathadin in Maine. The goal of the SIA/IAT is to create tangible evidence of U.S.-Canadian cooperation and interdependency, to celebrate the interconnectedness between the cultures and bioregions through which the trail passes.

Trail officials make a point of stressing the IAT/SIA philosophy to the public of "thinking beyond borders" as the guiding principle of the trail. On both sides of the border, community support has been critical to trail clearing (*SIA/IAT Newsletter,* spring 1996).

Initially it was assumed by IAT/SIA leadership that a 700-kilometer two-province addition to the 14-state AT would be welcomed by AT leadership. It was further assumed that the most logical place to link the trails would be at the summit of Mount Kathadin. Neither assumption would prove to be valid. Though the governing body of the AT, the International Trail Conference, welcomed the IAT/SIA "as a new or side connecting trail, we were reluctant to making it an extension of the traditional AT" (*AMC Outdoors,* September 1996). Then the Baxter State Park Authority, governing body of the park in which Kathadin is located, indicated a lack of support because of a perceived threat of further population pressure upon the park's natural environment. At this point, the most likely place that the two trails will connect is the Abol bridge on the southern perimeter of Baxter State Park (*The Register,* April 1996).

In Canada there was some discussion, made available through e-mail and the web page (*The AT Goes North,* no date), as to whether the trail would best serve eastern Canada by proceeding north through Maine, New Brunswick, and Québec, or simply proceeding north from Maine through Québec with the intent of resurrecting the tourist economy of the lower St. Lawrence and Gaspé. It was held by the unidentified authors, writing in French, that if New Brunswick was part of the route, the trail would deviate south of the Appalachian chain, which traverses the Gaspé. Further, it was contended that there is a greater concentration of under-utilized recreational tourist facilities adjacent to the Allagash Wilderness Waterway in both Maine and Québec. Whether one accepts this line of economic-based reasoning or whether we are seeing a manifestation of Québec sovereignty involves a bit of speculation.

U.S.-Canadian Differences

Two essential differences exist between the United States and Canada as they bear on the trail's completion in the year 2000. First, the provincial governments in both Québec and New Brunswick are active supporters of the trail in terms of investing money and other resources into it. Second, crown land, or land owned by a provincial government, is being made available for trail location. Much of the land and trails are located in extant parks. In the state of Maine, neither of these conditions exist. Neither money nor land is being made available by the state or federal government.

There are other factors. On the U.S. side, Maine has one of the smallest proportions of its land contained in parks or otherwise controlled by government. Though property rights in the United States are enshrined within the Constitution, this is not the case in Canada where all land is held by the crown, with individual land rights being residual (Friedenberg 1980; Lipset 1990). Further, crown land is not held by the federal government; it is held by provincial government, which again sets Canadian and U.S. land-use patterns apart. Another factor involves a heated debate over the future of clearcutting in Maine, a debate that has resulted in a "ban clearcutting" referendum. Consequently, paper companies are not eager to engage in ventures that could be perceived as further compromising land rights.

The Trail: A Guided Tour

Although some of the details are still being worked out in terms of actual trail

The proposed route would proceed from Parc de la Gaspésie to the Chic-Choc Mountains, a cluster of mountains exceeding 900 meters in elevation. Photo by Wilfred E. Richard.

siting, the trail will generally follow a route that will begin at a point outside of Baxter State Park, the location of Mount Katahdin. It will angle east and north along the park's eastern boundary and then along the east branch of the Penobscot River where it will continue northeast over peaks such as Mount Chase, along rivers, and through rolling farm country to Mars Hill Mountain, which is just inside the Maine border. Mars Hill Mountain (elevation 1,660 feet, 511 meters) is the first place in the United States that the sun's rays fall between March 29 and September 15. The trail then proceeds up the mountain along an Alpine ski run (Big Rock) and then goes due north to Fort Fairfield on the Maine border with New Brunswick. Much of this section of the trail has been completed. The trail then crosses into Perth-Andover, New Brunswick, not only into another nation, but into a different time zone from eastern to Atlantic. The rolling landscape continues, but logging seems to be more of an economic mainstay than farming.

In Canada, starting with the Tobique River, the trail traverses the Atlantic salmon-river country of New Brunswick. It then turns northeast toward Mount Carleton Provincial Park containing Mount Carleton, a string of lakes, other trails *(sentiers),* and various amenities. Next, the trail heads west from the park to the small city of Saint-Quentin at which point it turns due north through the "Restigouche" fishing region of New Brunswick.

Then, near the head-of-tide of Baie des Chaleurs on the Atlantic Ocean, the trail crosses into the Province of Québec in the salmon-fishing mecca of Matapèdia. It then travels northward by way of an abandoned power line and through the mountains of the central Gaspésie, where it connects with the existing trail system of the third jewel of the IAT/SIA, the 802-square-kilometer Parc de la Gaspésie, and the Chic-Choc Mountains, a cluster of mountains all exceeding an elevation of 900 meters. From west to east, the trail proceeds from Mounts Logan, Jacques Ferron, du Blizzard, Ernest Menard, Albert, Comte, and finally onto the IAT/SIA terminus, Mount Jacques Cartier. There is some discussion that the trail could be extended all the way to the end of the Gaspé Peninsula to Le Vieux Cap Gaspé.

The center of the park is actually not the 1,268-meter Mount Jacques-Cartier, but the 1,150-meter Mount Albert. Situated in the valley at the base of the mountain is a very impressive (in terms of architecture and quality of service) park information center with a gift store, a campground, and the very well-appointed "Le Góte du Mont-Albert," a sumptuous lodging and dining place where one may retire after time on the trail.

Perhaps the most stunning landscape of the entire AT/IAT trails system is Mount Albert with a tree line of about 2,000 feet (660 meters). Above tree line, is a tundralike plateau ("Table Moise") which emits an inspiring orange-brown glow replete with Arctic flowers, including the trilliumlike diapensie, armèrie du Labrador, and bunchberry—even a herd of caribou. There is a glacial tarn near which the park maintains a hut for hikers.

"Table Moise," a tundralike plateau above the treeline of Mount Albert. Photo by Wilfred E. Richard.

Side Trails and Attractions

Other landscapes, activities, and amenities abound in this Appalachian region. Although not an exhaustive list, some are referenced below:

Northeastern Maine and western New Brunswick—rolling farm country with an abundance (in season) of rye wheat, potatoes, broccoli, flax, peas, and corn.

Houlton—urban experience; supplies.

Restagouche—French and English naval engagement that began termination of French empire in North America(slide); world-renown salmon fishing.

Carleton Provincial Park—four-season recreational activity.

Gaspésie Provincial Park—excellent cross-country skiing.

Gaspé Peninsula—coastal sightseeing, beachcombing, bird-watching, whale-watching, and rock-hounding.

Status of the Trail Today

The establishment of the trail is progressing with rigor. Collectively, about one-quarter of the trail is now in place and usable. Québec: Local committees are being formed to cut and maintain

the trail in four locations along the trail route. Through these groups, it is planned to have the entire province's trail cut in 1996 and 1997. With the existing trails of Parc de la Gaspésie, Québec's section of the trail will be complete in 1997. At the time of this writing, either completion or permission to establish the trail has been achieved for 250 of Quèbec's 300 kilometers of trail. New Brunswick: Eight people have been hired under a government work project to scout and mark the 70 kilometers from Mount Carleton Provincial Park to the town of Kedgwick in the Restigouche region. Information on plants and animals is being gathered in order to locate the trail in interesting, nonthreatened areas. The section of the trail south of the park is scheduled to be finished in 1997. A 15-kilometer section of a former railroad bed has been purchased by the provincial government to be used for the trail. Similar to Québec's Parc de la Gaspésie, part of the trail network in New Brunswick's Mount Carleton Provincial Park will complement the IAT/SIA. Between Québec and New Brunswick, better than 122 kilometers of existing park hiking trails have been added as official components of the trail. Maine: The Maine chapter of the IAT/SIA has taken action to become a nonprofit corporation. The International Boundary Commission stated that the use of the international boundary from Mars Hill Mountain to Fort Fairfield, Maine, as part of the IAT/SIA was permissible. This part of the trail was already cleared and has subsequently been marked with the trail blaze. Negotiations continue with major corporate landowners in the area between Katahdin and Mars Hill to assemble parcels of land for trail construction.

Most recently, the Maine Chapter has constructed (October 1996) the first new trail shelter on the IAT/SIA Trail. It is of the traditional "Adirondack Shelter" design and is the first of 10 or so that will be constructed in Maine (there will be one every 10 miles). Working with the northern campus of the University of Maine at Presque Isle, and its Park and Natural Resource Management Program in the Department of Recreation and Leisure Services, an agreement has been reached through which faculty and students will be responsible for maintaining the trail between Mars Hill Mountain and the Border crossing at Fort Fairfield.

The forest products industry is somewhat wary about what they see as a possibility of compromising their rights over their land by extending use to the IAT/SIA. In particular, paper companies fear that National Park Service protection would follow, as was the case with the AT (Fletcher 1996) with purchase of the 2,200-mile (3,540 kilometers) AT corridor by the federal government. Government purchases included wide trail corridors and viewsheds in some areas. Pending federal acquisitions in western Maine have prevented ski trail expansion at Saddleback Ski Resort out of concern for the "viewscape."

Canadian hikers on the trail near Mount Albert (above). Bunch berry can be found in abundance with several other varieties of arctic flowers on the trail (right). Photos by Wilfred E. Richard.

Conclusions

Although the concept for the IAT/SIA developed in the United States, it is in Canada with crown lands and government support where implementation has occurred more quickly. In the United States, support of the large landowners, the timber companies will be absolutely critical to the success of the project. Strong government involvement in the United States is not anticipated. In Canada, both provinces have taken existing trails in both Québec (Parc de la Gaspésie) and New Brunswick (Mount Carlton Provincial Park) and simply assigned them the additional function of being part of the IAT/SIA. And, additional lengths outside of the parks also have been purchased and developed. This dual use strategy has not been accepted on the U.S. side of the border where IAT/SIA organizers had assumed (wrongly) that the international trail would begin within Baxter State Park. But, the IAT/SIA at this point will begin outside of Baxter State Park.

In essence, the IAT/SIA fares better north of the border than it does south of the border. In both Canadian provinces, a collective 138 kilometers of trail are now hikable, with another 30 kilometers in New Brunswick to be completed before the end of 1996. By the end of 1997, all of Canada's 540 kilometers will be in service. In Maine, of its 160-kilometer commitment, 30 kilometers (about one-fifth) have been implemented on the ground. Table 1 summarizes and offers an estimate of trail status as of November 1996. I estimate that at this time about 52% of the trail either has been developed or the land for the trail has been committed. But this is rapid progress in a U.S. public/private development. Bear in

**Table 1: International Appalachian Trail (IAT)
Sentier International des Appalaches (SIA)
Trail Implementation Schedule and Progress, November 1996**

Jurisdiction	Final Trail Length (km)	Developed or Committed (km)
New Brunswick	240	85
T	300	250
Maine	60	30
Totals	600	365 (52%)

mind that it was only 1994 that the concept of an IAT was proposed by Candidate Brennan and Dick Anderson.

Finally, one would hope that by the time the Canadian section of the trail is near completion, the private and public authorities on the U.S. side will have made progress in mobilizing the land and financial resources required to complete the link between the AT and the IAT/SIA—to achieve the vision of one integrated North American footpath. For long-distance trail buffs the IAT/SIA will really expand possibilities by linking the two longest trail systems in North America. These are the combined AT and the IAT/SIA, and the coast-to-coast Trans-Canada Trail, which will be intersected in New Brunswick.

And, developing along the coast of Maine is an expanding "Maine Island Trail Association," which recently has become associated with Canadian islands in New Brunswick. This is an association that provides landfalls for small boat operators. This water-based trail system could eventually stretch from Provincetown, Massachusetts, to Briar Island, Nova Scotia, thus forming another cross-border bioregion recreational alliance, this one focused on water in the Gulf of Maine. **IJW**

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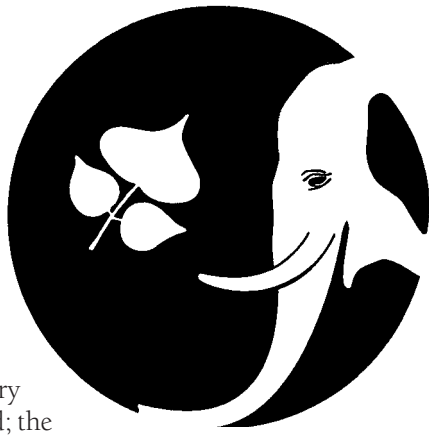
THE 6TH WORLD WILDERNESS CONGRESS

The Call for a Sustainable Future
India, October 18–24, 1997



THE WORLD WILDERNESS CONGRESS (WWC) keeps wilderness at the center of the debate and action on environmental sustainability, with the knowledge that wildland values—biological, cultural, scientific, economic, and spiritual—are intrinsic to a healthy and prosperous future on Earth. Since 1974, the WWC has met in South Africa, Australia, Scotland, the United States, and Norway. The Congress convenes in Asia for the first time in October, when the 6th WWC meets in South India.

The 6th WWC program has three major components. In the morning, plenary sessions will address broad objectives of sustainable living as they relate to wilderness, wildland, and biodiversity topics, including perspectives of policy, science, education, politics, business and economics, recreation, management, and the arts and humanities. In the afternoon, focused working sessions of professionals and interested members of the public will convene to present papers, posters, and discuss specific aspects of wilderness research, education, policy, and management. In addition, an extensive cultural program will provide opportunities to experience the ancient and contemporary cultures and natural areas of India and Asia.

The Action

In the tradition of the WWC, the 6th WWC is a public forum. Individuals *may* participate as delegates. In the WWC program, the perspectives of science, business, and politics are considered equally with the concerns of ethics, philosophy, and culture. Understanding *why* humankind destroys nature is fundamental to activating effective environmental solutions. Delegates will review and act upon issues critical to the Asian environment and wildlands in a global context, including:

- A framework for legislation and policy to further protect wilderness, wildlands, and biodiversity, and their dependent indigenous societies in Asia.

- Case studies of World Bank and other development approaches to fostering sustainability through integrating economic development and cultural enhancement with the biodiversity conservation.

- Corporate Environmental Responsibility in the rapidly developing economic sectors of Asia to encourage exemplary practices and establish feedback with the environmental sector.

- Morning plenary sessions will include updates on wildland conservation progress in all regions, including Australia/New Zealand, North America, Scandinavia/Europe, Asia, Latin America; the first Inventory of Wild Rivers of the World; the first presentation of Wilderness on the High Seas; critical international wetland areas; ecological restoration and more.

- The cultural program in the evenings will include the convergence of music and art from East and West. For example, renowned musician Paul Winter has agreed to play with selected Indian musicians, in celebration of the wildlife and wild places of Asia.

Call for Papers and Posters

Presentations are now being solicited for the following afternoon symposiums (working sessions). Please send a 300-word abstract to the relevant chairperson listed below, which will be considered in the order received.

International Wilderness Designation, Management, and Research—Contact Dr. Alan Watson, Aldo Leopold Wilderness Research Institute, P.O. Box 8089, Missoula, Montana 59807, USA. Fax: (406) 543-2663; e-mail: fswa/s=a.watson/ou=sa@mhs.attmail.com. Co-chaired by Greg Aplet (The Wilderness Society, USA).

Wilderness Inventory: Approaches and Progress—Contact Jonathan Miller, Director, Wilderness and Wild Rivers Unit, Environment Australia, G.P.O. Box 1567, Canberra, Australia 2601. Fax: (61-6) 217-2095; e-mail: jmiller@ahc.gov.au.

The Use of Wilderness for Personal Growth, Therapy, and Education—Contact Dr. John Hendee, Director, Wilderness Research Center, University of Idaho, Moscow, ID 83843, USA. Fax: (208) 885-2268; e-mail: hendeejo@uidaho.edu. Co-chaired by Marilyn Riley (Wilderness Transitions, USA) and Virginia Coyle (Rock River Foundation, USA).

The Tiger Dilemma: Status, Review, and Recommendations (jointly convened by WWF [India] and associates)—Contact 6th WWC chairman, Mr. M. A. Partha Sarathy, Hamsini, 1, 12th Cross, Rajmahal, Bangalore, India 560 080. Fax: (91-80) 334-1674.

The Asian and African Elephant: Status, Review, and Recommendations—Contact Dr. Raman Sukumar, Centre for Ecological Sciences, Indian Institute of Science, Bangalore India 560 012. Telephone: (91-80) 334-3382/334-0985/309-2786; fax: (91-80) 331-5428; e-mail: rsuku@ces.iisc.ernet.in.

Participatory and Local Management to Conserve Wildland Biodiversity—Contact Dr. Madhav Gadgil, Centre for Ecological Sciences, Indian Institute of Science, Bangalore India 560 012. Telephone: (91-80) 331-5453/334-0985/309-2507; fax: (91-80) 331-5428/334-1683; e-mail: madhav@ces.iisc.ernet.in.

The East-West Convergence: A New Paradigm for Nature Conservation—Contact Professor David Rothenberg, Department of Humanities, New Jersey Institute of Technology, Newark, NJ 07012, USA. Fax (201) 565-0586. Co-chaired by Dr. Ramachandran Guha, Bangalore.

Critical Issues in Wetlands Conservation—Contact Dr. Dhrubajyoti Ghosh, 370/1P, NSC Bose Road, Calcutta, India. Telephone: (91-33) 471-9548.

Endangered Species and Oriental Medicine—details to be announced.

Preliminary Registration Information—6th WWC

Contact website www//wild.org/wwc for complete information.

Chairman: Mr. M. A. Partha Sarathy
Secretariat: "Hamsini," 12th Cross, Rajmahal, Bangalore, India 560 080. Telephone: (91-80) 334-0400; fax: (91-80) 334-1674.

In the United States: The WILD Foundation, 2162 Baldwin Road, Ojai, CA 93023 USA. Fax: (805) 649-1757; e-mail: wild@fishnet.net.

Date: October 18–25, 1997; 7 nights.

Registration fee: US $500 for developed nations, less for developing nations; includes all events, lectures, symposiums, lunches on five days, receptions, and banquet.

Accommodations: From three-star (approximately $90/night) to five-star ($190/night) lodgings. All hotels are located within walking distance of the main venue, the Taj West End Hotel.

Annotated Bibliography and Directory of Wilderness Program Use

The University of Idaho Wilderness Research Center has released a 160-plus item annotated bibliography for hard copy and electronic distribution and a directory of 500 wilderness experience programs.

Friese, Gregory, Taylor Pittman, and John C. Hendee. 1996. *Studies of the Use of Wilderness for Personal Growth, Therapy, Education, and Leadership Development: An Annotation and Evaluation.* University of Idaho Wilderness Research Center, CFWR Room 18, Moscow, ID 83844-1144, USA, 103 pp., $30 (plus 5% in-state tax for Idaho orders), hard copy; free electronic. Fax: (208) 885-2268; e-mail: wrc@uidaho.edu.

Friese, Gregory. 1996. *Directory of Wilderness Experience Programs.* University of Idaho Wilderness Research Center, CFWR Room 18, Moscow ID 83844-1144, USA, 34 pp., $5 (plus 5% in-state tax for Idaho orders), hard copy. Fax: (208) 885-2268; e-mail: wrc@uidaho.edu.

ANNOUNCEMENTS AND WILDERNESS CALENDAR

Upcoming Conferences

The Wildbranch Workshop in Outdoor, Natural History, and Environmental Writing is for people with either personal or professional writing interests. The workshop is a week of classes, lectures, discussion groups, and readings in the craft and techniques of fine writing. The 10th annual workshop will be offered June 15–21, 1997, at Sterling College in northern Vermont. For additional information, telephone: (800) 648-3591; e-mail: wldbrnch@sterlingcollege.craftsbury. vt.us.

The 3rd International Conference on the Science and Management of Protected Areas (SAMPA III) will be held in Calgary, Alberta, Canada, from May 12–16, 1997. Participants will consider the linkages between protected areas and the management of whole ecosystems in both terrestrial and marine environments. The theme for SAMPA III is linking protected areas with working landscapes and conserving biodiversity. Look for a link to SAMPA on the worldwide web at: http://www.worldweb.com/ParksCanada-Banff. For more information contact Patricia Benson, telephone: (403) 292-4519; e-mail: sampa3@pch.gc.ca.

Meadows Named New President of The Wilderness Society

William H. Meadows III of San Francisco has been selected as the new president of The Wilderness Society, a nonprofit organization committed to the protection of wilderness, national parks, forests, and other public lands.

Meadows has spent the past four years with the Sierra Club, directing their centennial campaign for capital funds for that organization's future. Meadows, 50, cited the original Earth Day in 1970 as "the catalyst" for his involvement in environmental protection. "It will be a thrill to work alongside the man who founded Earth Day," he said referring to The Wilderness Society's counselor, former U.S. Senator Gaylord Nelson.

Bill Meadows was recently named president of The Wilderness Society.

Meadows' association with the Sierra Club dates back to the early 1970s, when he became active with the Middle Tennessee Group. He held a number of leadership positions in the club's Tennessee organization and also served as president of the Environmental Action Fund-Tennessee.

A graduate of Vanderbilt University in Nashville, Meadows was associate director of Alumni and Development there and then moved up to become executive director of Alumni Relations. Subsequently, Meadows was vice president for college relations at Sweet Briar College in Sweet Briar, Virginia.

Besides volunteering with environmental groups, Meadows has been active with Habitat for Humanity, the San Francisco Network Ministries, and Common Cause. In 1995, Meadows won Sierra Club's Community Service Award.

Founded in 1935, The Wilderness Society is a 310,000-member organization committed to preserving wilderness and wildlife, protecting America's prime forests, parks, rivers, deserts, and shorelands, and fostering an American land ethic.

Updated Wolf Management Plan for Wisconsin

A management plan to outline wolf management in Wisconsin, once the animals are reclassified from endangered to threatened and eventually removed from these categories in the state, is being prepared. At the present growth of the wolf population, reclassification to threatened is possible in 1997.

A wolf recovery plan was developed in 1988 to address mounting evidence of breeding wolves in northwestern Wisconsin. The original plan set a goal of 80 wolves for at least three continuous years by the year 2000. By 1995–1996 the population had grown to 99 to 105 wolves in 31 territories. This year will be the third of maintained population, allowing reclassification by the U.S. Fish and Wildlife Service and the need for a new management plan.

A recent Wisconsin Department of Natural Resources (DNR) GIS study identified about 6,000 square miles of potential wolf habitat that could support 300 to 400 wolves in northern and central Wisconsin. The DNR gathered public opinion in fall 1996 to help develop the wolf management plan that will address things such as livestock depredation, portions of the state zoned to encourage or discourage wolf pack establishment, population management, and cooperative management with state, federal, and county agencies. For more information, send an e-mail to: wolfplan@dnr.state.wi.us.

Wild Rivers a Mainstream Issue

Australia's federal environment minister, Robert Hill, has released the results of a new survey that correlates the strong attachment between the Australian people and their nation's wilderness and wild rivers. The survey, commissioned by the Australian Heritage Commission, confirms that the overwhelming majority of Australians want to see action to conserve wilderness and wild rivers.

Ninety-nine percent of people surveyed believe that wilderness should be conserved, and 97% support the conservation of wild rivers. Ninety-eight percent of those interviewed consider that there is a duty to conserve wilderness for future generations, and 87% believe that wilderness should be conserved for its own sake.

Minister Hill says the results also indicate that Australians respect the cultural association of Aboriginal people with wilderness. "A majority of respondents believed that indigenous people should be consulted on wilderness issues." The $1 billion Natural Heritage Trust will provide the long-term funding base for building the national reserve system and for protecting wilderness and wild rivers. For more information, contact Jane Morrison, Australian Heritage Commission. Telephone: (06) 217-2170

Navigating in the Wilderness

Oh Wilderness! The Game of Backcountry Lore, is a fun way to teach children about the skills necessary to navigate through the wilderness. Players learn how to spot clues and overcome obstacles with this handy game, which is portable and durable. Rules are included, but the game is flexible enough to allow for adaptations for particular group needs and ages. Only $8.95, it is available from Acorn Naturalists, 17300 East 17th Street, #J-236, Tustin, CA 92680, USA, or order toll-free at (800) 422-8886. (Excerpted from *Taproot,* a publication of The Coalition for Education in the Outdoors.)

San Gorgonio Wilderness Volunteers Are Studied

Members of the San Gorgonio Volunteer Association were contacted by mail in 1995 and asked to complete a mailed survey regarding their experiences as volunteers on the San Gorgonio Wilderness. Of the 144 individuals contacted, 91 returned usable surveys.

Volunteers reported an average of 4.6 years of service on the San Gorgonio Wilderness, with about 40 hours of monthly duty. While most worked during the summer months as volunteers, spring and fall seasons were also frequently worked. Many also reported membership in other volunteer organizations.

Slightly more males than females responded to the survey (58 versus 42%), and respondents averaged 46 years of age (ranged between 20 and 79). Household incomes varied widely, and all but three had at least completed high school. Ethnicities represented included Anglos (92%), Hispanics (2%), and Asians (2%).

Volunteers were queried regarding benefits of their experience, and responses included a sense of accomplishment (7%), social interactions (35%), public education (8%), increased physical fitness (6%), opportunity to help (10%), and a chance to relax and be outdoors (20%). The greatest drawbacks mentioned most often were a general lack of personal time (19%), and interference with other activities or commitments (15%). In spite of the drawbacks, 84% intended to continue volunteering. Those who were not planning on continued service had most often moved away from the area. (Excerpted from *Recreation Research Update,* no. 22, October 1996.)

Jim Nelson Receives Olaus and Margaret Murie Award

The California/Nevada office of The Wilderness Society presented the Olaus and Margaret Murie Award to Jim Nelson, a 30-year veteran of the U.S. Forest Service. As supervisor of the Humboldt and Toiyabe National Forests, Nelson is responsible for the stewardship of almost six million acres of public land, including nearly 800,000 acres of designated wilderness. Over the years, he has displayed an unwavering commitment to the balanced management of Nevada's national forests, particularly in reforming livestock grazing practices.

The Murie Award is given to a state or federal employee, usually unheralded,

who has demonstrated a singular dedication to the perpetuation of an American land ethic. (Excerpted from *Wilderness America,* vol. 1, no. 2, July/August 1996.)

Preserving the Chicago Wilderness

Chicago Wilderness is an unprecedented initiative that for the first time will bring central focus to preservation efforts—uniting a virtual who's who of conservation and planning groups and agencies to work in harmony and treat the scattered wilderness as one landscape.

Organized as the Chicago Region Biodiversity Council (USA), the alliance includes the U.S. Forest Service, the Illinois Department of Natural Resources, Chicago-area zoos, the Chicago Park District, county forest preserve districts, McHenry County Conservation District, Northeastern Illinois Planning Commission, Openlands Project, and The Nature Conservancy, which stimulated the initiative.

There are some 200,000 acres in the project area, a patchwork of prairie bits, oak woodlands, glacial lakes and hills, rivers and streams, and marshy wetlands. The groups' ambition is to create a model for managing natural resources in an urban area, pooling their scientific expertise, and mining their potential for funding and organizational expertise to make it work. Much of the land already is owned or managed by council members in parks and preserves, and that will be to their advantage, because the emphasis will be on restoration as much as preservation—returning the holdings as much as possible to presettlement purity. (Excerpted from the *Chicago Tribune,* Sec. 1, p. 28, April 11, 1996.)

Leopold Institute Endorses Recent Wilderness Publications

Scientist David Parsons points out several worthwhile recent publications from the Aldo Leopold Wilderness Research Institute:

- Blahna, D., K. Smith, and J. Anderson. 1995. Backcountry llama packing: Visitor perceptions of acceptability and conflict. *Leisure Sciences,* 17(3):185–204.

- Cole, D., A. Watson, and J. Roggenbuck. 1995. Trends in wilderness visitors and visits: Boundary waters canoe area, shining rock, and desolation wildernesses. *USDA Research Paper INT-RP-483.*

- Cole, D., and Peter Landres. 1996. Threats to wilderness ecosystems: Impacts and research needs. *Ecological Applications,* 6(1):168–184.

- Watson, A. 1995. An analysis of recent progress in recreation conflict research and perceptions of future challenges and opportunities. *Leisure Sciences,* 17(3):235–238.

Located in Missoula, Montana, the Leopold Institute is an interagency program aimed at providing the information necessary to protect and manage wilderness resources and values. (Excerpted from *Park Science,* vol. 16, no. 3, p. 10.)

Russian Conservation News Covers Wilderness Topics

For an update on important wilderness-related topics in Russia, the *Russian Conservation News* is a good read. The summer 1996 issue (39 pages) has three articles on the wolf in Russia, five articles on specific protected areas, four articles on endangered species, and much more. Additional information is available from Margaret Williams, *Russian Conservation News,* RR2, Box 1010, Dingman's Ferry, PA 18328, USA.

BLM Film Regulations for Wilderness Criticized by Alliance

The Southern Utah Wilderness Alliance (SUWA) is critical of the U.S. Department of the Interior's final film regulations issued in June 1996, because they gut public involvement by allowing Bureau of Land Management (BLM) managers to exempt permits from the standard planning process. Though many film projects deserve to be handled expeditiously, others should be subject to public review. SUWA cites some films in which film crews have caused damage to proposed wilderness areas. Under the new regulations, BLM can declare a film project to be "minimum impact" and make the permit effective immediately without any chance for public review. Write SUWA, 1471 South 1100 E, Salt Lake City, UT 84105-2423, USA.

Too Many Bison

Visitors to Yellowstone National Park enjoy the sight of huge herds of bison roaming the prairies adjacent to park roadways, often coming within feet of their cars and cameras. The bucolic view actually represents a growing danger; without checks to their growth, herds have swollen to enormous proportions, leaving sections of Yellowstone heavily overgrazed. In winter snows, hungry bison leave the park in search of forage. That leaves nearby Montana ranchers worried, because many of the animals carry brucellosis, a disease that causes cows to abort their calves. Current policy calls for migrating bison to be shot as they leave the park, in order to comply with Montana's brucellosis-free status. No steps have been taken to restrict the spread of the disease in the park herds. (Excerpted from *Taproot,* a publication of The Coalition for Education in the Outdoors, 1996.)

Wilderness and Spirituality

A new periodical entitled *Earth Light* examines the issues between environment/ecology issues and spirituality. Subscriptions are $15. For information, contact: Paul Burks, editor, 1558 Mercy Street, Mountain View, CA 94041. Telephone: (415) 960-1767. (Excerpted from *Taproot,* a publication of The Coalition for Education in the Outdoors, 1996.)

LETTER TO THE EDITOR

Wilderness Tied to the Past and Tradition Loses Wildness and Biodiversity

Dear *IJW* Editor:

Your *IJW* article on "Local Wilderness Advocacy" and author Noss's "Soul of the Wilderness" raised important, but often overlooked, wilderness topics. You suggested appropriately that local, community-based conservation organizations are going to be more effective advocates for wilderness allocation and management (i.e., the traditional "think globally, act locally" idea).

Noss argues, in part, that wilderness designation is simply not connecting with the broader issues of biodiversity. With biodiversity, we may have to think locally, act globally, a more frustrating concept. Noss's words created for this dichotomy needs more discussion.

Our idea of wilderness is an abstract concept—a cultural context—that we must broaden vastly to embrace biodiversity. Many areas facing a "biodiversity crisis" do not even qualify as wilderness—interestingly and ironically, a strong statement for and against wilderness as being at the crux of the broader ecological view of wilderness.

Like Noss, I am deeply concerned that too many within the environmental community are not looking at the broader ecological issues inherent in the wilderness debate. Acres of wilderness are obviously important, but ecological integrity or protection of biodiversity does not come solely from these acres. Wilderness and natural ecological processes are displaced by many wilderness practices: by non-native, recreational-based fisheries so common in our high mountain wildernesses; by the introduction of exotic terrestrial species such as mountain goats in Utah wilderness; by bear baiting; cougar hounding; heavily outfitted and guided recreational-based hunting; by predator control; grazing; and the bad behavior of far too many recreationists.

We must play politics, we must build coalitions and cross boundaries, but it is becoming clearer every day that we must also confront the deep (philosophical) reasons why protecting wilderness and wildness is important.

Over the years I've been told, heard, and at one time maybe said: "Let's get it designated as wilderness and then later confront these peripheral, management issues." The problem is they aren't peripheral; they are foundational. Social, political, and philosophical expectations are defined by what we accept in wilderness. Is wilderness valuable only as a place in which to catch fish, bag an elk, tree a cougar? Is humanness going to define the processes/purposes of life and the places we call wilderness? Ecological processes and their integrity, biodiversity, is the fundamental issue.

It seems one of the fundamental problems is that our ideas of wilderness are too hooked to the past and tradition at the expense of wildness, ecological integrity, and biodiversity.

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BOOK REVIEWS

By James R. Fazio

Wilderness Therapy: Foundations, Theory, and Research by Jennifer Davis-Berman and Dene S. Berman. 1994. Kendall/Hunt Publishing, Dubuque, Iowa. 282 pp., $26.00 U.S. (paperback).

Wilderness therapy is enjoying an increasing popularity as wilderness and adventure programs continue to grow in both number and variety. The notion that wilderness has therapeutic and soothing effects on the human psyche comes from a long history with roots in many different cultures. Wilderness therapy in the United States has evolved in the past several decades and has grown into a significant field that combines mental health services with outdoor adventure programming. Although an increasing number of programs offer wilderness therapy, little has been written to define and clarify the nature and implications of this type of programming. *Wilderness Therapy: Foundations, Theory, and Research* serves an important role as the first definitive text on this emerging discipline.

As the title suggests, this book covers a lot of ground. Davis-Berman and Berman begin with a discussion of our cultural orientation toward a wilderness ethic and an exploration of the outdoor adventure and mental health origins of wilderness therapy concepts. They discuss the trends in research and the different orientations of outdoor programs ranging from mental health to enrichment. In the second half of the book, the authors present a discussion of the theories informing wilderness therapy, stressing the importance of these theories as the basis for continued research, as well as for program development and evaluation. In addition to the discussion of theory, two chapters contain practical suggestions for designing and evaluating wilderness therapy programs. Finally, *Wilderness Therapy* calls for increased professionalization of the field, including such measures as accreditation of programs and certification of leaders.

The authors' perspective as mental health professionals is clear throughout the book. As part of their counseling practice, Davis-Berman and Berman started the Wilderness Therapy Program, and they use this program frequently as an example. Much of the focus in *Wilderness Therapy* is on the usefulness of these types of programs for troubled youth. There are two particular themes in the book that consistently support the usefulness of wilderness therapy: The first is the idea that the least restrictive environment provides the best forum for confronting psychological problems, and the second is the idea that outdoor environments generally make the consequences of actions more immediate. Further discussion acknowledges the dual influence of mental health and outdoor adventure fields, and the potential for different standards. Though wilderness therapy appears to be a particularly effective medium for addressing some mental health problems, more clarification and refinement of program tenets is needed.

Book review editor, James R. Fazio.

Each of the areas addressed in the book contributes to an understanding of the issues and ideas surrounding the developing field of wilderness therapy. The information imparted is truly significant, but the sequence in which it is presented leads to some confusion. I found the section regarding theory to contain a general frame of reference that I would have appreciated reading earlier as context for the programs and research that are detailed. The clearest definitions of wilderness therapy, including the distinctions between therapeutic programs and therapy programs, emerged far too late in the book to guide the reader's understanding of the issues. Despite these weaknesses, *Wilderness Therapy* is truly appreciable in that it takes on a topic of growing significance and provides us with a forum for debate about the direction and purposes of wilderness therapy. Davis-Berman and Berman have written a book that can serve as the basis for further work in defining the relationship of outdoor adventure to mental health services.

Thelon—A River Sanctuary by David F. Pelly. 1996. Canadian Recreational Canoeing Association, Hyde Park, Ontario, Canada. 202 pp., $24.95 U.S. (paperback).

The namesake of this book is attractively shown on the cover—a broad expanse of wild water curving gracefully through an immense plain of gravel beds, streamside willows, and scattered pockets of spruce. The sky, blue and cloudless, reaches down to the flat Arctic horizon that spreads across the scene like an ocean. Not a human in sight. But superimposed on this sublime image is a photo of canoeists taking a snapshot of a languid musk ox. And on the back cover is the author, sitting proudly in his canoe, adorned in bright yellow Gortex. Could this be yet another adventure book, or a guide to a "secret" place worth revealing for the sake of a royalty? The author quickly dispels these suspicions. Pelly, an Arctic adventurer and author of four other books, writes, "Although this book as a whole is my spiritual response to the place, most of my personal experience of the Thelon is not to be found in these pages." Instead, he says, "wilderness, to survive as wilderness, needs a voice. Its own voice cannot be heard beyond those who enter it as a sanctum. It cannot speak for itself, to defend itself against our intrusions." Pelly takes an interesting and importantly different approach to sharing the story of this wild area. "It is the richness of human experiences, layered on top of the natural splendor of the river valley and its wildlife, that really sets the Thelon apart. The place has a history, both Native and non-Native, which gives it standing beyond the intrinsic value of wilderness itself. That may prove to be the difference between preservation and destruction of the Thelon wilderness; history may be its saving grace." The author proceeds to vividly portray its more recent history. It is a story of successive explorers and it reads like the best of Arctic adventure books. Euro-American interest in the 15,000-square-mile area, sometimes referred to simply as "The Country," began with Hudson's Bay Company traders in 1715. By 1899, David Hanbury was exploring the land by dogsled in search of high adventure—and he most certainly found it. So did surveyor J. W. Tyrrell the following year, especially when he split from his party, which was pinned down with their canoes by a ferocious, barrenlands storm. A simple trek overland to rendezvous with the group farther along their route almost proved disastrous. By the sixth day into what we would call a backpack trip, Tyrrell's clothing and sleeping blanket were soaked, his moccasins worn out, and the vegetation so saturated with water that there was no chance of a warming fire. His food was gone too, except for a small flask of brandy of which he reported, "I gladly availed myself." Tyrrell survived, which is more than can be said of a party of three who entered The Country in 1926 in search of adventure and manhood. Their shallow graves can be seen by modern adventurers next to a crumbling cabin at Hornby Point. The last to survive a winter of dwindling food, 18-year-old Edgar Christian left a diary that virtually tells the tale from his grave.

The story of traders, trappers, missionaries, and finally, biologists, are all in this book. So is the welcome story of how Canadian officials recognized the importance of protecting this wild area as early as 1927. At that time it was set aside as the Thelon Game Sanctuary and was followed three years later with a total ban on mining activities. The result has been that an entire Arctic ecosystem has remained intact and wholly controlled by nature. There, musk-ox numbers have grown and the great caribou migrations move like rhythmic seasonal tides. Wolves, foxes, snowy owls, moose, and grizzly bears are there too, providing an experience that for visitors surpasses "simply viewing wildlife," and instead provides "the privilege of witnessing their life." What, then, is the impending danger alluded to by the author?

The bad news comes near the end of the book and centers on politics. As *Thelon* went to press, the new territory of Nunavut had just been carved out of the great Northwest Territories. The sanctuary lies divided between governing bodies representing the Inuit and Dene Native peoples. Feelings of resentment now surface freely, feelings that stem from being excluded from earlier decisions that created the sanctuary within ancestral hunting grounds. There is also today's strong sentiment in favor of Aboriginal hunting rights, complete with the aid of high-powered rifles and snowmobiles. Depending on the management plan drawn up by the new stewards of the sanctuary, wrong decisions could undo one of the most successful experiments in the history of wildlife conservation.

Perhaps a sequel from David Pelly will reveal the outcome. In the meantime, all who love the Arctic North can only hope that he will be able to conclude as he did in this volume that "The Thelon, still today, is the place where all men and women can go to be as close as possible to the beginning. The untouched pocket we call Thelon Wildlife Sanctuary is the purest wilderness left in continental North America. In our approach to the twenty-first century, it is a sanctum."

Northern Wilderness Areas: Ecology, Sustainability, Values edited by Anna-Lisa Sippola, Pirjo Alaraudanjoki, Bruce Forbes, and Ville Hallikainen. 1995. Arctic Centre, University of Lapland, P.O. Box 122, 96101 Rovaniemi, Finland. 438 pp., $30 U.S. (paperback).*

The comprehensive title of this book promises an odyssey through the wildlands of the Nordic countries. As a great deal of travel in wilderness tends to be, this journey is also a little rugged, brings some surprises, provides contrasting experiences, and leaves the reader with some new insights. The trip could have been better planned, but its worth taking if you are interested in the wildlands of this corner of the world.

In 1990 Finland was the first country outside North America to pass wilderness legislation. Several nations have passed conservation legislation with intentions comparable to The U.S. Wilderness Act, but wilderness has not received specific protection. Through a wilderness research program initiated in 1991, the Finns are attempting to develop a scientific framework for studying wilderness by integrating natural and human sciences. Part of this process was a conference held in Finland entitled Northern Wilderness Areas. This book is a collection of papers by 44 authors from the conference on a wide array of wilderness-related concepts.

The concept of wilderness has gained increasing attention in the Nordic countries over the past decade. This appears to happen within a global trend of concern over the loss of the last patches of wilderness on the globe. Like other global and societal trends, wilderness debates find their own cultural expression in Scandinavia particular to this region. This was well evidenced at the 5th World Wilderness Congress held in Norway in 1993. The wilderness concept promulgated at the conference was predominantly a North American understanding of wild nature. This representation spawned substantial controversy: In many parts of the world, wilderness is strongly associated with people and cultural development. In other parts (e.g., in several aboriginal cultures) wilderness is not an existent or legitimate term.

This text is a valuable contribution to the international debate over wilderness, first and foremost because of its distinct emphasis on the cultural aspects of northern wildland. As the book states: "What we tend to call remote wilderness comprises the home lands and core areas to northern aboriginal peoples." I might add that this can also be said for large groups of nonaboriginal peoples throughout Russia, Finland, Sweden, and Norway. In these cultures, wildlands have been used extensively by hunters, fishermen, farmers, and others for centuries for commercial or production reasons. Entire cultures have developed around the use and integration of untrammeled "wild" nature in daily routines. An outstanding feature of the Finnish Wilderness Act is that it recognizes that preservation of wilderness areas is a necessary basis for sustaining the livelihoods of the Saami and Finnish cultures in these areas.

The book assumes a broad geographical perspective in its coverage of northern wilderness from Scandinavia to interior Russia. Today these vast regions are subject to extensive exploitation of natural resources. Large portions of Arctic and subarctic regions are insufficiently mapped and inventoried in terms of environmental conditions and sensitivity, and major battles over resource use are unfolding. As other wildernesses in the world, the Nordic ecosystems also experience oil and gas exploration, commercial forestry, infrastructure development, and so on, resulting in fragmentation of habitat, diminishing plant and wildlife populations, pollution, disruptions of local cultures, and the like. Consequently, any discussion about wilderness in Russia and the Nordic countries faces a reality of threatened ecosystems, unevenly distributed but heavily impacted, and frequently severe disagreements over rights and access to resources.

Still, some of the more pristine and ecologically intact parts of the world are found within these regions, and a central question arises: What will a Nordic concept of wilderness entail in the context of the particular cultures and global modernity? This issue is addressed from different angles throughout the text. The book is structured in three sections: "Wildlife and Ecosystems," "Use, Culture, and Values," and "Conservation and Management." The book is essentially edited proceedings, and I doubt many will read it from cover to cover. Its strength is primarily as a diverse reference to various wilderness-related issues. The book mostly presents case studies, some of which have general interest beyond the field areas. These include discussions of carrying capacities, general value systems, and ecological dynamics. Other chapters provide a glimpse into a type of cultural geography seldom seen in the wilderness literature, such as values among the vanishing Kama people of central Siberia. For those curious about nature conservation in the former Soviet Union, informative chapters exist on protected area systems and problems experienced during the transformation to market-based economies.

The scope of this book is as broad as the regions it encompasses. There is much to learn here, but the approach also prohibits the reader from getting a synthesized view of how the wilderness idea unfolds in contemporary northern Europe. As a book about wilderness ecology in the widest sense of the term, several criticisms could be raised. Many of the chapters have little or no apparent link to wilderness concepts. With 44 authors, the style of writing varies considerably. The book would have been significantly strengthened by some introductory chapters on the political and cultural geography of North European wilderness, management regimes, and environmental conditions. A concluding chapter on future directions and challenges would also have been useful. However, the book should be read for what it is: A fascinating, although disparate, collection of papers on Nordic wildlands.

The reader will find this is a trip without map and compass. It reflects the premature searching for wilderness philosophy, values, and directions of contemporary Northern Europe. Nevertheless, the many case studies provide salient insights and information worthy of a place in the library of most wilderness enthusiasts. **IJW**

*Reviewed by Bjorn Kaltenborn, research scientist, Eastern Norway Research Institute.

PINKSON *continued from page 5*

*you call the wild places and sit with me a while. I have much to share with you. I can fill your soul with the nourishment it needs for health, healing, wholeness. I can enrich understanding of your true identity and purpose in being here. But I need your help, I need your cooperation, I need your protection. I need, dear ones, your love. Please, for your own sake, hear my call. Save me, and I will help save you.***IJW**

Dr. Tom Pinkson is a psychologist in private practice focusing on spiritual healing and empowerment and is also a clinical consultant associated with the Center for Attitudinal Healing in Sausalito, Calif. He works with children and families facing life-threatening illness. His career practice also includes leadership of "Wakan," a shamanic-based spiritual group dedicated to the highest ideals of community, social justice, and environmental protection, along with periodic vision quests, retreats, workshops, pilgrimages to places of power around the world, and public speaking. He is author of *A Quest for Vision* (1975), and a recent book, *Flowers of Wiricuta* (1995 Wakan Press), describing his 30 years of transpersonal research, including a shamanic apprenticeship with Huichol elders. Tom Pinkson can be contacted at 240 Miller Avenue, Mill Valley, CA 94941, USA. Telephone: (415) 381-3909; e-mail: thomas@microweb.com. Tom and Wakan have a web site that they also invite you to visit: http://www.aonet.com/nierica.

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