



INTERNATIONAL

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I N T E R N A T I O N A L

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International Journal of Wilderness

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

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Editorial Perspectives

IJW Joins U.S. Forest Service in Recognizing Excellence in Wilderness Research

BY ALAN E. WATSON
EXECUTIVE EDITOR (SCIENCE AND RESEARCH)

For many years the United States Forest Service has promoted excellence in wilderness management through national awards for primitive skills, wilderness education, and leadership. Recipients have represented the most creative and dedicated USFS employees and teams working for wilderness, as well as public organizations working with the USFS on restoration, maintenance, and education projects. This year the USFS invited the *IJW* to referee nominations and cooperatively issue its national award for excellence in wilderness research.

The "Call for Nominations" in the December issue (vol. 4, no. 3) of the *IJW* announced the objective of recognizing "individual or team wilderness research accomplishments that directly benefit the wilderness resource in the United States." Employees of federal or state governments, any private or public organizations, or private individuals are eligible to receive this award. But more important, the award recognizes significant scientific contribution to understanding and protecting the benefits related to wilderness anywhere, or everywhere, in the United States. The *IJW* is proud to represent the interests of all federal wilderness management agencies, all cooperating sponsors, and the public in jointly soliciting nominations, selecting a recipient, and recognizing the award winner this year.

The effects of this award are far greater than simply recognizing people who conduct excellent wilderness research. Through these awards we are acknowledging

that the wilderness resource and the decisions we are making about managing it are worthy of the best science possible. Managers need to understand wilderness ecosystems and their dynamics, threats to those ecosystems, and how human impact can be mitigated. They also need to understand how wilderness experiences benefit humans today and the tremendous value of such places to future societies. We hope this award stimulates more and better wilderness science.

The recipient of the Award for Excellence in Wilderness Management Research will be announced during 1999. We hope the wilderness science and management community will honor the recipient and work with us in the future to make sure the best wilderness research is nominated for this annual award. We urge everyone to think of this award as interagency and interdisciplinary recognition of valuable science. Hopefully, someday we will also recognize wilderness research at the international level. **IJW**



Article author Alan E. Watson.

Soul of the Wilderness

Who Needs Wild Philosophy?

BY DAVID ROTHENBERG



Article author David Rothenberg.

Environmental activists, wildland and wildlife managers, environmental policy makers, and politicians have every right to ask what place philosophy has in the heated discussion on the future of wilderness. Every philosopher ought to ask herself the same question, so as to avoid being caught in the conceptual spirals that can be the hallmark of the discipline of which D. T. Suzuki once said, “This is what I love about philosophy—no one wins” (quoted in John Cage, *Silence*, [Middletown: Wesleyan University Press, 1961], p. 193). It is Hermann Hesse’s glass bead game of concepts, the free flow of the test of ideas. Fun, frustrating, endless, beautiful at best, nitpicking and cold at worst. “Philosophers,” warned Keats, “are the kind who would pull off angels’ wings.” We are not satisfied with belief. We claim to want to explain things, but we remain best at asking questions.

But environmental philosophy is applied philosophy, which means it uses this questioning approach ostensibly to help solve real-world problems; in this case, the clarifi-

cation of how humanity should relate to the natural world. We need to examine the fate of wilderness as an idea. We need to help define the wild place as something that can be understood and cared for in all parts of the world, as a concept that may change fluidly as it is reinterpreted inside many cultures and many political systems, to hopefully emerge as something not that all people can agree upon, but something that can be thought about and saved in so many ways.

I will quickly admit my biases: I believe in the value of wilderness. The wild has a place in the hearts of all living beings, somewhere, and that includes all humans. The idea of the wild includes a sense of danger as well as purity, of ultimate naturalness as well as fragility. There are people who can live inside of it, but to love it is to acknowledge a value more than the human—something wider, something larger—that we must work hard to participate in while it is so much easier for the rest of nature to inhabit it. That is the fate of humanity—to have to struggle to fit into nature, after our own nature has thrust us out.

The love of wilderness and the desire to maintain it is part of humanity’s rise toward a less selfish state. It is a sign of our growing ability to look beyond ourselves, to expand our care to aspects of nature that are important not because they are useful to us, but because we respect them beyond the limitations of use. The love of wilderness as something precious and worthy is part of the march of civilization and should never be opposed to culture.

“Wilderness” is probably not the most important way humanity should look at nature, though it is one of many important ways we can relate to the world around us. It is important to say this because as much as wilderness itself has been under siege by those forces in our culture that want to see all of nature as something we can use, the idea of wilderness has come at the same time under conceptual siege, sometimes from very surprising places. It is often

historians and philosophers who say they are “for” the environment but “against” wilderness. They see the wild as a narrow and very exclusionary perspective on the natural world, not representative of the real and diverse ways human beings work with and reunderstand the land.

In environmental history we have seen William Cronon decry in the pages of *The New York Times Magazine* and in his big anthology *Uncommon Ground* (1955), the idea of wilderness as something naive and unrealistic to those people who actually work with the land. He asks for an environmental ethic and aesthetic based on respect, not for the wild reserves thousands of miles from our homes, but for the trees in our backyard, for the health of the family farm, for the understanding of exactly where our food comes from. For him, wilderness exists only as an idea, an idea developed for those who live in cities isolated from nature, where they can imagine of the mountains whatever they will.

Environmental philosopher J. Baird Callicott has been pushing for several years now the argument that believing in wilderness is a kind of old-time religion, based on backward and original colonial American ideas of separating humanity from nature. As such, it is an extremely limited notion on which to found the discipline of environmental philosophy, and because of this, it is a darn shame that it has got so much attention from environmental philosophers in the first century of our discipline. It's time to move beyond this naive separation between ourselves and our surroundings and replace it by sustainable development and biodiversity.

Callicott believes that “implicit in the most passionate pleas for wilderness preservation is a complacency

about what passes for civilization” (1998). This is an interesting notion, though I don't believe it for a second. It is only a somewhat enlightened civilization that could believe saving some wild country out there for its own sake has value. This desire is a civilized notion, something from our era, and is a step in the right direction. It should be brought into the wider debate of the kind of relationship humanity should have with nature, not cast aside as a deviant direction.

When it comes to saving wild country, Callicott believes that we should stop talking about something as woolly as wilderness and instead set up “biodiversity reserves,” saving endangered species and whole ecosystems in the name of science (1998). That is all fine and good, but I would not call the notion of biodiversity any less culturally constructed than the idea of wilderness. I still suspect the notion of the wild, which might need some renovating, is more inspiring and compelling than the idea of biological diversity, but I might be just the kind of hopeless puritan romantic that Callicott wants to dismiss.

Yet the suggestion that sustainable development might somehow replace concern for wilderness is even more perplexing. The Brundtland Commission said sustainable development is “meeting the needs of the present without compromising the ability of the future to meet its own needs” (World Commission for Environment and Development, *Our Common Future*, New York: Oxford University Press, 1987). This is as wishy-washy an avoidance of our moral responsibility to future generations as anything I could imagine. If we believe in the future, we have to decide things for that future and not let the future take its own path. If we decide to preserve wilderness in perpetuity, as our fore-

bears in conservation had the insight to do, we take the risk of claiming to know what's best for the future. Modern United Nations and World Bank schemers are too slippery for such real moral commitment.

Why should sustainability be opposed to the identification of, concern for, and preservation of wilderness? I have never been able to understand this fallacy. Perhaps it's because we all like to extrapolate, or inflate, the primacy and completeness of whatever point of view we are championing as the true “right” way. Callicott wants sustainability, and for him it supersedes all that came before. Many environmental philosophers, not so interested in people and their problems, put forth wilderness as what matters most. Even William Cronon, when pressed to stop all the nay-saying and announce just what it is that he does believe in, couldn't have agreed with the old naive view more when he said in the pages of *Environmental History* that “wilderness is my religion” (1996).

It is easy to see why the wilderness can be a source of spiritual experience and challenge for so many through history. From Moses to Muir, many have needed to be out there, away from the civilization that created them, to catch a glimpse of the God who so often slinks from the details of the constructed human world. Yet it has never been the only place to see God, and no one should put the wild forth as the only part of nature that matters. It is one of many places to touch the greatness that is inherent in the fabric of this world.

But wilderness philosophy is not wilderness religion, and the philosopher who wants to support wilderness should not turn away in disgust from critiques of the idea of wilderness, crying blasphemy. Wilderness is much

more interesting as philosophical possibility than as religious icon. The responsible philosopher of the wild won't simply love it in silence but will be able to combine his or her own support with relentless questioning. I support the intention behind the critical efforts of Cronon and Callicott, to caution against the totalizing tendencies of some all-or-nothing wilderness demagogues, but I protest the negativity of their tones. It is so much easier for intellectuals to say "no" than to say "yes" to anything, for that is the way we are trained to think. It is harder to turn skepticism into support, so that we may refine possibilities and honestly change the world. Yet this approach is so much more important.

Therefore I believe it is imperative to question the idea of wilderness in order to defend it more forcefully rather than hasten its conceptual destruction. Following are three basic critiques of the idea of wilderness that deserve thoughtful consideration by all supporters of the wild:

1. Wilderness comes from civilization, and it is not an idea that makes much sense to the history of human cultures. I agree. There was never any need to worry about preserving the wilderness when it was something formidable and dangerous, against which humanity defended itself feebly in order to subsist. Times have changed. We have proliferated across the planet. We no longer fear the wild, by and large, but we lament its passing. This is no mere romanticism. It is an achievement. We are now able to care about what is not primarily of use to us. We may love it for its difference. Sure, this makes nature something separate from the mainstream of

human slash-and-burn mentality and activity. But it is a nature still part of nature, a place we came from after a long and hard cultural evolution. The wild will surely win in the end, long after humanity has been rendered irrelevant, so we need not worry about its ultimate survival. Our challenge is to see if we are compatible with its present health and that it is flourishing. I sincerely hope we are up to the task. That being said, we must be careful not to make the model of humans separated from nature that identifies wilderness to be the only way, or even the most important way, we as a species relate to the environment.

2. Wilderness is not everything. Its preservation has never been the only goal of the environmental movement, or even the most important goal. True, it may seem to be the most dramatic, the most obvious, or the most photogenic goal, but it should always be seen as one extreme of a diverse movement that exists to encourage our species to reflect carefully on our dependence on and attitude toward the vast world around us. It is essential that we never use concern for wilderness to distract us from concern for the more immediate ways human beings depend on the environment: using it for food, resources, and designing our habitations so they do not cumulatively pollute and degrade the surroundings. These other areas are perhaps far more directly important for most of us in day-to-day life than the saving of wilderness. Knowing the wilderness is safe may be more symbolically important.

I hope that more nations see the realism inherent in designating wilderness. It does not mean a declaration of the rights of nature before the rights of people. It only means the people as a whole decide that sometimes nature must be given its own chance. But the problems the many diverse countries of the world will face when describing wilderness may be quite different from what the United States had to face.

3. Wilderness does imply conflicts between nature and people. For as many examples of indigenous peoples that can be brought up to show that humanity might live in a simpler form of harmony with nature, there are as many instances where it is only the fact of a small population that prevents a people from overharvesting its land. There is much we can learn from the world's traditional subsistence peoples about how to live closely with our surroundings. But in one sense we avoid the real issue by talking too much about indigenous rights when we are pitting humanity against nature in search of the wild.

More often people are agrarian or traders. They work closely with the land, and they buy and sell what they find there. Saving a few places does not mean calling for an end to all commerce. Setting a place aside as wilderness does take it out of the marketplace, and whether we like it or not, this often sets it against the interests of people who live nearby and have had to earn their living from the land. They should be compensated, and they should be brought into discussions of why wilderness can matter to all of us. They

should not be punished for having used the land. Sometimes they may be put in charge of the newly demarcated places, but sometimes they are not the ones who know how to manage best.

Indigenous primal people are changing. Hunters and harvesters are changing. It is not in our interest to halt this change. Their histories may include original and clear ideas about respecting nature, and they may not have needed a word for wilderness. If they need it now, it is our job to teach them. To discuss it, not to preach or inflict. Cultural identity is a fragile thing. Every group wants to maintain it, but they rarely realize how easy it is to lose. Setting cultures aside as museums will not work. Inspiring a care for the wild may bring humanity together once in a while around a common goal, but it should allow each group of people to find its own way through the problem.

In some places wilderness will admit the presence and activities of people who have tended the land responsibly for generations. In other places the fragility of the situation might mean that the old ways must go. Each case deserves separate consideration. No proclamations will make easier the difficult choices minority cultures must face amidst pressures of development and preservation of their inherited lands. There is no easy way to save the wild as well.

Science is not going to save the wilderness. Biodiversity may be very important, and its value may be clearly established by conservation biologists. But it remains a specialized concept. In contrast, the wild is an idea that will be compelling to far more of us: It is pure, sensual, dangerous and alluring. We cannot

resist it. Science can only support our love. It will not replace it because its language is more exact.

Economics will not save the wilderness. The wild may need a place in the nations' budgets and expenditures, but it cannot be quantified, and above all it cannot be reduced to dollars and sense. You cannot make enough money on wild places to justify their existence in cost-benefit analyses unless you sincerely bend the rules to put

find the wild in these planned-out wildernesses, its presence will be there in spite of the rules. So take us out there, to breathe in the alternative. Even so, experience is not going to save the wilderness. You can go there and love it, or even refuse to come home and instead live there, but its safety will still be in danger. There is so much to do, both back home and across the world.

Setting a place aside as wilderness does take it out of the marketplace, and whether we like it or not, this often sets it against the interests of people who live nearby and have had to earn their living from the land.

a price tag on the priceless, attempting to buy what is not for sale: Beauty, purity, survival of the beyond-human right in our midst, reminding us to turn off the running total of calculation in order to truly perceive where we are, and what kind of world it is that we live in.

Management is not going to save the wilderness. It may be practical and possible to draw a line on the map and say, "Look, this side is wild and is governed by rules, and that side is tame and there you can do what you want." Something is backward there—legislation cannot set boundaries in which wildness is supposed to be confined. True, we have to set up such laws because we people seem to need codes to keep us in check. But this is a sad fact of human irreconcilability with nature: We don't on our own fit in. Yet if we

Philosophy is certainly not going to save the wilderness. Especially if it only pokes thorns in the sides of everyone else's faiths and arguments. Ideas have through history changed the world, but I doubt that they have saved the world. Will humility save it if we just dare to step back and tread lightly but seriously across this planet that is all we honestly have? Will education save the wild if we simply teach more and more people to consider, to care? Will poetry save the wild if we learn to bend language as far as it can go so that it will be its most beautiful? As Swedish poet Tomas Tranströmer writes, "The wild does not have words" (*Selected Poems*, ed. Robert Hass, Hopewell, NJ: Ecco Press, 1987, p. 159). We don't have much time. We have to do everything, and nothing, acting always with both passion and care.

Go out there. See what you know. Come back with more. But don't forget to come back. We need all of you somehow, in the midst of this fight. None of these approaches alone will do enough to save the wild, but if they all respect their own limitations and the contributions of other, quite dif-

ferent ways of seeing the wild, then hopefully something can be done. There will be disagreements and incompleteness, but all we can hope for is to work together, and although the wild will surely win in the end, perhaps it can include us in the victory as well. **IJW**

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This paper is the edited version of the 6th World Wilderness Congress presentation (Bangalore, India, October 1998). Proceedings are in press with Fulcrum Publishing (Golden, Colo.) and The WILD Foundation.

EXTRA

News from the Aldo Leopold Wilderness Research Institute Relevant recent publication Supported by the Leopold Institute include:

- Landres, P. B., P. S. White, G. Aplet, and A. Zimmermann. 1998. Naturalness and natural variability: definitions, concepts, and strategies for wilderness management. *Wilderness and Natural Areas in Eastern North America: Research, Management and Planning*, ed. by D. L. Mulhavy and M. H. Legg. Nacogdoches, Texas: Stephen F. Austin State University, Arthur Temple College of Forestry, Center for Applied Studies in Forestry: 41–50.
- Gutzwiller, K. J., H. A. Marcum, H. B. Harvey, J. D. Roth, and S. H. Anderson. 1998. Bird tolerance to human intrusion in Wyoming montane forests. *The Condor* 100: 519–527.
- Gutzwiller, K. J., E. A. Kroese, S. H. Anderson, and C. A. Wilkins. 1997. Does human intrusion alter the seasonal timing of avian song during breeding periods? *The Auk* (114) 1: 55–65.
- Riffell, S. K., K. J. Gutzwiller, and S. H. Anderson. 1996. Does repeated human intrusion cause cumulative declines in avian richness and abundance? *Ecological Applications* (6) 2: 492–505.
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The Role of Legislative History in Agency Decision-Making

A Case Study of Wilderness Airstrip Management in the United States

BY SHANNON S. MEYER

Abstract: The Wilderness Act, which established the United State's National Wilderness Preservation System in 1964, contains both a clear definition of wilderness and multiple "nonconforming" exceptions to this definition. Managers are given discretion to manage these nonconforming uses within the framework of wilderness that the Act sought to preserve. This article presents a process for assessing congressional intent by closely examining legislative language and legislative history, especially as it relates to wilderness airstrips.

In some remote wildernesses in the United States, visitors may be surprised to encounter airstrips, motorboats, houses on private inholdings, and cattle grazing. These uses are permitted in some places under special provisions in The Wilderness Act (P.L. 88-577) (TWA) of 1964. The compromises necessary for passage to occur led to the persistence of some preexisting uses that do not conform with the common perception of wilderness.

Wilderness managers are responsible for deciphering and carrying out Congress's intent for the management of wilderness. Normally, when a manager is faced with a controversial issue they turn to their agency's wilderness policies, manual, and handbook. While some managers are cognizant of the relevance of legislative history to their decision-making process, the administrative use of legislative history is neither consistent nor always correct.

Airstrips in Wilderness

TWA's prohibition on motorized transport is clarified by an exception that states; "Within wilderness areas designated by this Act the use of aircraft or motorboats where these practices have already become established may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable (sec. 4[d][1])." The debate over how

these airstrips should be managed has repeatedly brought managers, pilots, outfitters, environmentalists, and other wilderness users into conflict.

Three wilderness areas outside of Alaska have active airstrips on federal land, with a total of 16 airstrips in Idaho and Montana. These airstrips are used by agency personnel, private pilots, and outfitters for myriad purposes, including hunting, fishing, boating, wilderness administration, and scientific research. In addition, "touchdowns," where pilots land on backcountry airstrips for the challenge of the landing rather than for access to the wilderness, are popular among some pilots.



Article author Shannon S. Meyer.

The Analytical Process

When a manager is faced with an ambiguous situation (Meyer 1998), a structured analytical process is needed: (1) Use statutory construction to determine whether ambiguity exists and attempt to resolve it; (2) if the ambiguity still persists,

(PEER REVIEWED)

determine whether the use of legislative history is appropriate; and (3) use legislative interpretation to clarify congressional intent. For the first step, the reviewer must determine whether the ambiguity is real or only perceived by using statutory construction to carefully examine the letter of the law. Initial ambiguity can sometimes be eliminated through a closer reading of the law and the application of common rules of grammar and sentence construction to the provision(s) in question.

If statutory construction fails to eliminate the confusion, Stephen Breyer, a current Supreme Court justice, lists five circumstances where the use of legislative history is appropriate. These are: (1) to avoid an absurd result, (2) to discover and correct drafting errors, (3) to determine whether a special meaning exists for a word within a statute, (4) to determine the purpose of a word in the statutory scheme, and (5) to help choose between reasonable alternative interpretations of a politically controversial statute (Breyer 1992). If any of these five circumstances apply, Breyer suggests turning to legislative interpretation.

The third and final step involves analyzing the appropriate legislative history. Legislative history has been defined as the “explanations of the legislators themselves, or the documents officially used

Figure 1—Significance of Legislative Documents in Descending Order of Importance

- I. Committee Reports
- II. a. Statements of sponsors to the whole chamber
b. Explanations of the committee chair
- III. a. Committee hearings
b. Statements in general debate
- IV. a. Statements of members of the opposition
b. Amendments or language rejected in committee or on the floor

by them, in the course of making a specific law” (Folsom 1972). All legislative history, however, is not created equal, and the weight given to different aspects of legislative history varies. Figure 1 provides a hierarchy of the relative importance of these documents. This was created from a variety of sources including scholarly writings and the standard legal guide to statutory construction, and it reflects common usage by the courts (de Sloovere 1940; Dickerson 1975; Folsom 1972; and Singer 1992). When attempting to interpret legislative history, these documents must be analyzed in order of importance.

Committee reports are generally given the most weight (Mc-Donald 1991). On an equal footing are the explanations of the committee chair when reporting a bill out of committee. In the process of explaining a bill to the full legislature, a committee chair must answer specific questions about it and defend it against opposition. They must be familiar with both the bill and the situation in need of remedy (Singer 1992).

Statements made to the whole chamber by the legislative sponsors of a bill are next in importance. They reveal a legislative intent more significant than that re-

vealed by those of a more casual legislative adherent (Dickerson 1975). In contrast, the views of opponents are rarely assigned much importance, as their statements may tend to overstate the reach of the provision opposed (Folsom 1972).

Committee hearings are given less weight because they are generally “concerned with the more diffuse matters of ulterior legislative purpose” (Dickerson 1975). However, issues may be discussed in hearings that are not revisited in other documents. Amendments or previous bill language that were discarded also play a role. The elimination of words or phrases from a draft bill indicates that the meaning in question was not intended or was no longer acceptable to the majority. Finally, testimony given by noncongressional parties during committee hearings have little value other than to provide context (Singer 1992).

Applying the Process to Airstrips

To apply this process to airstrip management, the legislative history of both TWA and the legislation establishing a particular wilderness must be examined. Two out of three of the wildernesses in the coterminous states that contain aircraft landing strips, the Frank Church-River of No Return Wilderness (FC-RONRW) and the Great Bear Wilderness, were not designated by TWA.



Indian Creek Airstrip, Frank Church-River of No Return Wilderness, Idaho. Photo by Shannon Meyer.

The airstrips on these wildernesses are governed by additional legislation. In the legislative history of the Great Bear Wilderness Act of 1978, Congress explicitly states its intention to keep the airstrip in this wilderness open (U.S. Congress 1978). The Central Idaho Wilderness Act (CIWA) of 1980 contains language limiting the U.S. Forest Service's (USFS) ability to close airstrips in the FC-RONRW (P.L. 96-312).

Ambiguity in Wilderness Acts

While aircraft landings are permitted in wilderness areas where they occurred before designation, the rest of The Wilderness Act's language defines these areas in terms that do not include motorized travel. Section 2“C” of TWA defines a wilderness as “primarily unaffected by the work of man” with “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” These definitions are further clarified by the legislative history of TWA, which begins with the introduction of the first bill in 1957. Senator Hubert Humphrey, the legislation's original sponsor, clarified his definition of wilderness as “the native condition of the area, undeveloped, . . . untouched by the hand of man or his mechanical products” (U.S. Congress 1957). He saw wilderness as a place “for people to make their way into . . . without all of the so-called advances of modernization and technology” (U.S. Congress 1957). None of the statements defining wilderness in the final law or in its legislative history include motorized uses.

The CIWA of 1980 created the FC-RONRW, the largest contiguous wilderness area in the lower 48 states. This remote area had a long tradition of access by airplanes, and its users wished to ensure that it would continue (U.S. Senate 1979). As a result, the CIWA deviated from the standard language of TWA's section 4(d)(1) to state that

Wilderness managers are asked to make a host of discretionary decisions in a very polarized atmosphere. They are constantly faced with pressures from interest groups demanding opposing interpretations of wilderness regulations.

certain established uses “shall” rather than “may” be permitted to continue subject to the secretary's regulations. It also added that: “the Secretary shall not permanently close or render unserviceable any aircraft landing strip in regular use on national forest lands on the date of enactment of the Act for reasons other than extreme danger to aircraft, and in any case not without the express written concurrence of the agency of the State of Idaho charged with evaluating the safety of back-country airstrips” (sec. 7[a][1]). Compared with the language of TWA, this provision significantly limited the agency's discretion over the persistence of airstrips in the FC-RONRW.

At the time of the bill's passage, only a few of the area's airstrips were receiving active maintenance and some had been closed due to their dangerous conditions. Senator Church emphasized that with this provision “the Forest Service is expressly prohibited from closing airstrips on national forests within the wilderness, which are in regular use at present, except for the reason of aircraft safety” (U.S. Senate 1980, S17780). Now managers are left to decipher what management discretion remains with the USFS and how it should be exercised.

Airstrip Management in the Frank Church-River of No Return Wilderness

The FC-RONRW currently has 31 operational airstrips within its boundaries, 12 of which are found on federal land

(USDA Forest Service 1998). These landing strips vary in condition from small undeveloped areas to graded and maintained runways with tie-downs, wind socks, and user facilities. According to the agency, approximately 5,500 aircraft landings occur on federal airstrips within the wilderness annually. The USFS notes that “[t]he sites and sounds of aircraft operating at or near landing strips and the noise of low level overflights probably disturb the quiet of the wilderness” and “[a]ircraft activities have the potential to affect wildlife species, particularly those at landing sites located on or near key wildlife habitat” (USDA Forest Service 1998: 1–37).

Statutory Construction

The first step in applying the analytical process is to determine whether the statutory issue needs interpretation. To do so, both TWA and the CIWA must be analyzed. The initial ambiguity regarding airstrip management stems from provisions of TWA that govern the entire National Wilderness Preservation System. This ambiguity arises from the exception in section 4(d)(1) that permits the continuation of a use that is incompatible with the definition of wilderness found in section 2 of TWA. The CIWA adds ambiguity by increasing statutory protection for airstrips without resolving the underlying conflict between them and wilderness protection.

In section 7(a)(1) of the CIWA, Congress clearly limits the management



Cabin Creek Airstrip, Frank Church-River of No Return Wilderness, Idaho. Photo by Shannon Meyer.

agency's ability to close airstrips on the FC-RONRW. In doing so, Congress demonstrated that it could reduce the agency's management discretion if it desired. At the same time, Congress did not specifically limit the agency's discretionary ability to restrict use levels. By expressly restricting closures but not restricting other management discretion, Congress indicates that only the ability to close airstrips is limited.

Legislative Interpretation

Legislative interpretation is still necessary to address the ambiguity in TWA. Breyer's fifth scenario applies in this case. Both TWA and the CIWA are politically controversial statutes, and varying interpretations can be made

from both of them about how airstrips should be managed. Although Congress abdicated its right to statutorily terminate the use of wilderness airstrips in the 1964 Act, it did explicitly give the USFS discretion to regulate aircraft access as the agency "deems desirable". The CIWA clearly restricts the USFS's ability to close airstrips on the FC-RONRW except

in the case of extreme danger to aircraft. However, it does not reduce the USFS discretion to manage use levels on, and maintenance of, these strips. The agency is still bound by TWA to minimize the impacts of air access on wilderness character, as explained in agency policy direction. In a 1993 Office of General Counsel decision on a possible closure of an airstrip in the FC-RONRW, USFS attorneys found that when an airstrip is unsafe, there is "nothing in the Act [that] requires the U.S. Forest Service to make improvements to existing airstrips to make them safer ... [and] improving existing airstrips could well violate the Wilderness Act" (Lodine and Campbell 1993: 4).

The legislative history of the CIWA supports the conclusion that closure, not management discretion, was being remedied with section 7(a). The bill's sponsor, Senator Church, wanted to prevent the USFS from arbitrarily closing airstrips. There is no indication in the statute's legislative history that Congress intended to reduce the agency's discretionary ability to manage use levels pursuant to agency regulations and policies.

Conclusion

Wilderness managers are asked to make a host of discretionary decisions in a very polarized atmosphere. They are constantly faced with pressures from interest groups demanding opposing interpretations of wilderness regulations. Where TWA is clear and directive, these requests are easily dealt with; where the Act is ambiguous, the result is often controversy and confusion. Wilderness airstrips are just one example of such a discretionary quandary. **IJW**

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Wilderness Conservation

Through Local Participation in the Cayambe-Coca and Antisana Ecological Reserves, Ecuador

Revisiting the Community Park Ranger Program

BY WILLIAM H. ULFELDER

Abstract: Local communities are playing an increasingly important role in the protection of wilderness areas in the United States and abroad. The community park ranger program in the Cayambe-Coca and Antisana Ecological Reserves, Ecuador, represents an innovative way to involve local residents in protected area management. This article describes changes that have been made in the past two years to make the program participatory, oriented toward abating threats to biodiversity, financially sustainable, and adaptively managed.

In the July 1998 issue of the *IJW* (vol. 4, no. 2) I wrote an article analyzing a Latin American community park ranger program (“The Community Park Ranger Program in the Cayambe-Coca Ecological Reserve: Analyzing the Effectiveness of a Wilderness Protection Strategy in Ecuador”). The article summarized the findings of the Local Participation in Protected Areas Management (Spanish acronym, PALOMAP) study, which was carried out in 1997 by The Nature Conservancy (the Conservancy) and the Latin American Social Sciences Faculty (FLACSO), with support from the Ford Foundation. Since the completion of the study in 1997 several changes have been made to the community park ranger program that make it more effective as a wilderness conservation strategy. Because local communities are participating more in biodiversity conservation, both domestically and abroad, and many national and international conservation organizations are seeking to develop similar community ranger programs, it is worth revisiting the Cayambe-Coca example to learn what changes have been made to improve the program and what additional lessons have been learned. This article provides both an update on the program and a reflection on what lessons it has provided.



Article author William Ulfelder.

The Cayambe-Coca and Antisana Reserves

Located just an hour from Ecuador's capital, Quito, the Cayambe-Coca and Antisana Ecological Reserves are two of the most diverse and beautiful protected areas in Latin America. Cayambe-Coca's nearly 1 million acres (380,000 hectares) and Antisana's 300 thousand acres (120,000 hectares) form the backbone of the Condor Bioserve. The Conservancy, working with its Ecuadorian conservation partners



San Rafael Waterfall, Cayambe-Coca Ecological Reserve, Ecuador. Photo by William Ulfelder.

and other international conservation organizations, hopes to link these two protected areas with Cotopaxi, Gran Sumanco, and Napo-Galeras National Parks. When joined together these protected areas will form a reserve that is nearly 2.5 million acres in size (one million hectares) and will include three ecoregions of highest priority for conservation: Northern Andean paramo, Eastern Cordillera Real montane forests and Napo moist forest (Dinerstein et al. 1995). The principal threats to the protected areas are road construction, dam construction to generate hydroelectric power and channel water for irrigation and drinking water, colonization, burning of the paramo grasslands, and the clearing of land for agriculture and cattle production.

Ecuador's Community Park Rangers

When the community ranger program began in the Cayambe-Coca Ecological Reserve in 1993 13 local residents joined with support from the Sustainable Use of Biological Resources (SUBIR) Project, a consortium of the U.S. Agency for International Development (USAID), the Conservancy, and the Cooperative for American Relief Everywhere (CARE). In Cayambe-Coca the Conservancy worked

with its partner organizations, the Antisana Foundation and the Ecuadorian park service (INEFAN) to implement the program. The community rangers were hired with three principal objectives: bolster the management of the protected area in threatened and difficult to access places; improve relations between INEFAN and

the communities that depend on the reserve for wildlife, timber, water, and other natural resources; and provide local communities with greater leadership to meet their sustainable development needs.

Since 1993 the program has grown to include the adjacent Antisana Ecological Reserve and now includes 16 rangers. In addition, the Rumicocha Ecological Foundation, a grassroots conservation organization based in the town of Papallacta, located between the two reserves, has developed with INEFAN and Quito's water company (EMAAP-Q) a similar program that employs seven more local residents. This second program relies on community members to protect the resources of three large watersheds that provide the capital city of Quito with approximately 75% of its drinking water. The Rumicocha/INEFAN/EMAAP-Q initiative was modeled after the SUBIR Project community ranger program. Therefore, there are currently 23 community park rangers working in the Cayambe-Coca and Antisana Ecological Reserves.

Improving the Community Ranger Program

In the July 1998 article, four principal weaknesses of the community

ranger program were identified. These included the need to improve local community participation, develop an adaptive management program, perform objective evaluations, and provide greater financial continuity. The strengths of the program were that it provided INEFAN with an on-the-ground presence and additional staff to report activities in the field and address threats such as illegal fishing and hunting. The rangers have dramatically improved communications and relations between the park service and local communities.

During the past two years a number of changes have been implemented to improve the effectiveness of the community ranger program and address its weaknesses. INEFAN, the Conservancy, the Antisana Foundation, and the Rumicocha Ecological Foundation have clarified the community rangers' responsibilities. Their responsibilities are to train community members in conservation and sustainable resource use through workshops, presentations, formal events, and exchanges with other communities; collaborate with INEFAN in the management of the protected area, in the monitoring of flora and fauna, and the implementation of basic scientific research; facilitate communication between INEFAN and his or her community; and help integrate his or her community into the management and conservation of the protected area.

While far-reaching, these objectives have made the community rangers' job more focused and realistic. When the SUBIR Project began, the rangers were expected to serve as community leaders in many fields such as health, education, and development. This placed tremendous expectations on the rangers and made them unable to perform any single aspect of their work well. By keeping their objectives related to

protected area management and directly related themes (community/park communication, monitoring, and basic research) the program is more likely to generate concrete results.

In addition, the program management team developed a “profile” of what a community ranger should be, clarified the steps that should be taken to hire a community ranger, developed a ranger code of ethics, and determined what sanctions should be placed upon any ranger who does not fulfill his or her duties. As the program is still relatively new in Latin America, these documented clarifications provide guidelines for other organizations that wish to establish similar programs. Without going into too great detail, it is worth mentioning that the team clarified that community rangers can be either male or female (the first woman ranger in Ecuador was hired through the program), they must be nominated and approved by their community in an open assembly, and they have management responsibilities related to offenses by both residents and nonresidents alike. During the initial years of the program these issues were not clear, leading to considerable controversy. Providing management staff and park rangers with these guidelines resolved several controversies.

Another important change was the community park rangers’ training. During the first phase of the program many rangers received little or no formal training in protected area management, basic ecology, natural interpretation, first aid, search and rescue, and other related topics. The attitude was that since the community rangers were local residents they could take care of themselves and would be “naturals” at the job. Unfortunately, this was not the case. The complicated aspects of balancing community needs and protected area

management goals often put community rangers in delicate and uncomfortable situations—they were often expected to be in two places at once, felt uneasy speaking with tourists, and did not know whether they should enforce rules among fellow villagers and friends. Through a series of training workshops the community rangers have learned more about these challenges and how best to handle them. Perhaps more importantly, they have had the opportunity to meet one another and share their own personal experiences. These exchanges have allowed them the opportunity to enrich each other and appreciate that they are not working alone. In addition, many of the rangers are taking advantage of a national education program, supported by the World Bank’s Global Environmental Facility, that provides basic education in all subjects to INEFAN staff. The curriculum includes basic subjects such as math and science and is designed to teach these courses in the context of protected area management.

In late 1998 the management team undertook a series of interviews with protected area staff, community rangers, and community members to determine what have been the best and worst experiences, and how the programs could be improved. This was the first objective evaluation of the program by the management team. The management team, after reviewing the results of a 1997 threats analysis, also determined the most important communities for locating community rangers. By analyzing threats to the reserves, identifying community/park conflicts, and



One of the community park rangers from Oyacachi at his post in the paramo. Photo by William Ulfelder.

reviewing where current rangers are located, the team determined the 15 communities that should have rangers. Fourteen now have community rangers in them.

Steps have also been taken to develop a monitoring and evaluation program. Data are being collected on wildlife such as spectacled bears, mountain tapirs, deer, migratory birds, and the Andean condor. While these data are not yet being analyzed by the rangers themselves, the management team is planning to train the rangers in how to use the data to make management decisions such as setting patrol schedules and establishing policies that include closing certain areas and seasons to hunting and fishing (fishing is permitted if a pole is used, and hunting is allowed for the indigenous communities located inside Cayambe-Coca’s boundaries).

Finally, the management team has developed an innovative way to provide greater financial sustainability to the community ranger program, one of its greatest weaknesses. To date the funds for rangers’ salaries, equipment, and training have been provided by USAID and the Conservancy. Now, through a watershed conservation fund, potable

and irrigation water users will finance conservation and management activities in the reserves by paying a small fee for the water they consume (The Nature Conservancy 1998). In the past, water use charges have only covered the delivery of water to homes and businesses, but have not included the protection of the water's source. By paying a fraction of a cent on each cubic meter of water consumed, tens of thousands of dollars will be raised to finance watershed protection activities, community development, and land acquisition. Quito's municipal government has backed the proposal, and soon the water that the reserves generate for consumption and irrigation will pay for the reserves' protection.

Conclusions

The community park rangers have helped make Cayambe-Coca and Antisana Ecological Reserves two of the better protected areas in Latin America. As a result of the program there are more than 35 park rangers working in the two reserves that total about 1.2 million acres (500,000 hectares). INEFAN had only about a dozen full-time park rangers before the program began. This means there is now one park ranger per 35,300 acres (14,300 hectares). This compares very favorably with the Brazilian Amazon, where each park ranger has responsibility over approximately 1.5 million acres (605,300 hectares) and is almost on

par with the United States, where each ranger is responsible for an average of approximately 20,250 acres (8,200 hectares) (Peres and Terborgh 1995).

Numbers alone do not tell the story. Since the program began the community rangers have confiscated hunting rifles, fishing nets, dynamite, and electrical generators. Relations between INEFAN and local communities have improved tremendously, and INEFAN can now discuss management issues with communities that before did not allow them to visit. The biggest threats to the reserves' biodiversity, such as colonization and infrastructure development, also pose threats to local residents. By working to mitigate these threats the rangers are simultaneously protecting the local human communities—protecting both natural and human resources. And the data that are being collected on the reserves' flora and fauna will improve the management of the sites through better field activities and policies, providing locals with a greater understanding and appreciation of what is at stake.

The work, however, is not complete. Though all rangers have received some training, additional training is needed in subjects such as first aid, tropical ecology, and environmental education. Also, local communities must be given an even greater voice in the program's design and implementation. The reserves' communities represent a wealth of knowledge,

experience, and potential support that is not being tapped to its potential. By constantly engaging communities in the ranger program through formal and informal events, the communities will be able to provide additional information on protected area threats, threat abatement strategies, potential and actual conflicts, and long-term sustainable development strategies.

With the progress made in the community ranger program during the past several years, it is clear that the support is there among the protected areas' managers and involved local residents who depend on the areas for their livelihoods. It has taken six years to develop the program and the resulting benefits it has generated. Perhaps one of the most important lessons the program has provided is the need to be patient and flexible in the implementation of community-based conservation initiatives such as the community park ranger program. Fortunately, all involved are committed to the long-term success of the initiative as it meets the needs of the reserves and the residents who inhabit them. **IJW**

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Protected Areas and Aboriginal Interests

At Home in the Canadian Arctic Wilderness

BY ERIN E. SHERRY

Abstract: An alliance in the Canadian Arctic between aboriginal and conservation interests through agreements that combine aboriginal entitlement, national park creation, and cooperative management is giving new dimension to wilderness preservation goals and is enriching protected area values. This article explores the historic roots and contemporary character of aboriginal and nonaboriginal views of wilderness. A case study analysis of Vuntut National Park, Yukon, Canada is presented to exemplify a new type of protected area establishment and management that promises to support both ancient aboriginal lifeways and national conservation objectives.

Differing Perspectives on Wilderness

For Canada's first people, wilderness protection is part of larger political and legal questions, those "bound up in the thorny issues of treaty rights, aboriginal title, and Land Claims" (Erasmus 1989). Through aboriginal eyes the Canadian Arctic embodies many pervasive and enduring connections, family ties; seasonal cycles of activity, a spirit of place, sacred spaces, and ancestral homeland (Klein 1994; Davis 1994). During the past three decades aboriginal land claims and self-government negotiations have altered the political, legal, and cultural face of the North. The exploration and development of energy, mining, water, and timber interests have affected traditional aboriginal lifestyles and the health of northern ecosystems. In the context of this contested terrain, aboriginal groups, resource managers, and conservationists are endeavoring to define common goals and mutual understanding.

Changing Wilderness Concepts

Northern First Nations, through the Land Claim process and self-government negotiations, are seeking both a land and resource base sufficient to support their communities and recognition of their inherent right to autonomous government. The role of protected areas in relation to northern aboriginal communities is being redefined through international documents such as the "World Conservation Strategy" (IUCN 1980) and "Our Common Future" (WCED 1987). These vision state-

ments link the aesthetic, utilitarian, and ecological traditions of western wilderness protection with the broader processes of social development, economic development, and cultural survival (Sadler 1989). This global movement highlights the importance of self-sufficient communities and sound environmental management practices that reflect the cultural values, belief systems, and aspirations of indigenous people. Particular attention is focused on the rights and interests of aboriginal users directly affected by protected area creation and management.



Article author Erin Sherry beside the Mendenhall Glacier, Alaska. Photo by David Stuart.

ments link the aesthetic, utilitarian, and ecological traditions of western wilderness protection with the broader processes of social development, economic development, and cultural survival (Sadler 1989). This global movement highlights the importance of self-sufficient communities and sound environmental management practices that reflect the cultural values, belief systems, and aspirations of indigenous people. Particular attention is focused on the rights and interests of aboriginal users directly affected by protected area creation and management.

Aboriginal Perspectives

Wilderness protection that supports the diversity and productivity of northern ecosystems is a common western and aboriginal goal. However, dissonant perceptions of wilderness and discordant attitudes toward formalized wilderness protection still echo between the two cultures. While there is no one aboriginal viewpoint, for many the land is synonymous with community and survival.

(PEER REVIEWED)



Gwich'in Elders, such as Charlie Thomas, emphasize the importance of integrating aboriginal use and occupancy within national park boundaries to ensure cultural survival and community well-being. Photo by Roy Moses.

Examine a map of aboriginal land use in the Arctic and misconceptions of untouched landscapes vanish. Instead, another face of the land appears—a traditional territory that is intimately known, traveled, used, and named. As Hrenchuk (1993) cautions, it is “illusory to think that others have not gone before us nor [use] these areas today.” Aboriginal groups hold a large stake in “preserving areas as close as possible to their original state . . . for without renewable resources to harvest, aboriginal people lose both their livelihood and their way of life” (Erasmus 1989). However, in the pursuit of this goal, many First Nations remain skeptical of alliances with governments and conservationists who have too often violated their aboriginal rights in the name of parks and environmental protection.

Aboriginal Relationships to Protected Areas

Historically, the establishment of Canadian parks meant the imposition of rules and regulations that jeopardized aboriginal ways of life by restricting or eliminating the people’s legal rights (Hrenchuk 1993; Press et al. 1995). The freedom of First Nations to practice their cultures in harmony with nature was

often abruptly overridden by state authorities: “We were told we may no longer take certain plants for medicines and food . . . we may no longer pitch tents in certain places in which we had gathered for generations . . . we may no longer start fires . . . we may no longer carry firearms” (Erasmus 1989). Setting park boundaries alienated First Nations, divorcing people from their homeland. The creation of most wilderness-oriented protected areas in Canada involved the exclusion of aboriginal people. The Keeseekoowenen were evicted and their homes burnt in Riding Mountain National Park, Manitoba. Blackfoot and Stoney groups were expelled from Banff National Park, Alberta, and their hunting rights suspended. The Ojibway were prohibited from hunting, trapping, and fishing within Quetico Provincial Park, Ontario. It is an unequivocal truth that First Nations have heavily borne the costs of “protecting” natural areas in the “public” interest for the benefit of future generations (Hrenchuk 1993; Kassi 1994; Njootli 1994; Morrison 1995). The interests of the new dominant society were placed above those of minority aboriginal groups, making “an ancient way of life subject to the apparent modern-day whims of an alien culture, all in the name of conservation” (Erasmus 1989).

Will the persistent differences between western ideals of wilderness and aboriginal perspectives make the simultaneous protection of wildlife, unique landscapes, functioning ecosystems, and indigenous lifeways an impossibility? This difficult question remains unresolved; however, the northern Yukon contains a protected area, Vuntut National Park (VNP), which provides a promising working model of joint action in wilderness protection.

Vuntut National Park: Enriching Aboriginal Cultures

VNP bridges the divide between protected and utilized areas and gives new

dimension to mainstream wilderness preservation goals. It lies within the Yukon, a region of internationally significant cultural and natural heritage, rich in its diversity of fish and wildlife, vegetation, landscapes, and lifeways. Here, the federal and territorial government have successfully negotiated comprehensive claims with aboriginal organizations such as the Inuvialuit, Tutchone First Nation, Champagne and Aishihik First Nation, Trondek Hwech’in First Nation, and the Nacho Nyak Dun First Nation (Morrison 1993; Peepre 1994; Morrison 1995). These agreements have emerged as a positive force for both the expansion of northern national parks and the recognition of aboriginal people’s stewardship role.

VNP was established in the context of cooperation and shared responsibility as a provision of the Vuntut Gwich'in First Nation Final Agreement (VGFA) (DIAND 1993). The creation of VNP provided not only for conservation of this remote wildland, but fully integrated the traditional lifestyle, culture, knowledge, and spiritual values of the Vuntut Gwich'in First Nation (VGFN). Sitting north of the Arctic Circle and encompassing Old Crow Flats, the new park contains wetlands of international significance, critical portions of the Porcupine Caribou Herd range, important migratory waterfowl habitat, and archaeological and paleontological resources of global concern (DIAND 1993). Consequently, the park is a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Site candidate, the first to be recognized for its combined natural and cultural resource wealth.

A Vuntut Gwich'in Viewpoint

VNP is part of the Old Crow community’s conservation strategy. Under the direction of community elders, VGFN attempted to establish a park to “protect the wildlife, protect the land, and to have

some authority given to Indian people so that we can exercise our rights and carry on with our way of life" (Njootli 1994). Through the land claims process, VGFN has secured several park co-management rights and responsibilities: harvesting rights, advisory obligations, park planning and management duties, and employment and economic opportunities (DIAND 1993; Njootli 1994).

VNP is closely linked to the aboriginal ethic of conservation through sustainable use rather than wilderness preservation per se (Sadler 1989). Both traditional and current aboriginal uses of the park are recognized and protected under a cooperative management agreement. This is a significant provision since it respects the right of aboriginal cultures to build on the experience of earlier generations by adapting to the technological and socioeconomic changes of the present (e.g., firearms, snow machines, a cash economy). The Vuntut Gwitchin have exclusive rights to hunt, trap, and gather in the park for subsistence purposes and have priority access over sport fishers (Morrison 1993). VGFN has rights to give, trade, barter, or sell edible fish, wildlife, and plant products harvested within the park for domestic purposes (DIAND 1993). This is a critical recognition of the importance of informal aboriginal economies based on reciprocity and communal sharing.

Co-management of Park Planning

Designed to ensure VGFN shares significantly in decision-making and implementation processes, the VNP's comanagement committee is composed equally of representatives of VGFN and Parks Canada. This advisory body makes broad management, administrative, and planning decisions that involve heritage and cultural resources; travel routes, harvest limits, locations, and seasonal restrictions; development and revision of

the park's management plan; and the management of transboundary fish and wildlife (DIAND 1993). The minister of heritage and parks does retain the ultimate authority to accept, reject, or vary the comanagement committee's recommendations and alter VGFN park use (DIAND 1993).

Cooperative management is described as "both a cornerstone and a barometer in the relationship between aboriginal and non-aboriginal society" (Hawkes 1995). The comanagement of VNP is an approach designed to "combine the best of both worlds," blending aboriginal and state management approaches. This arrangement entails sharing responsibility and balancing power between local resource users and government agencies. An environment is created where payoffs are greater for cooperation than for competition, and where actors optimize their mutual good by planning jointly with long-term vision. Kofinas (1993) specifies three ways comanagement can contribute to economic development: (1) confronting external competing demands and values that threaten the resource base of subsistence economies; (2) creating new and appropriate economic opportunities; and (3) redirecting the flow of resource benefits to local communities. The government-Gwitchin partnership also enhances several park management functions including data gathering and analysis; logistical harvesting and allocation decisions; resource protection; enforcement; long-term planning and enhancement; and broad policy decision-making. Currently the Old Crow community and government agencies are jointly implementing a project focused on mutual learning, cultural research, and park resource management. This community-based investigation into Vuntut Gwitchin traditional ecological knowledge and oral history has the potential to overcome the cultural,

perceptual, and disciplinary barriers conventionally impeding sustainable resource management endeavors.

Barriers to Progress

Despite an encouraging outlook, several unresolved issues are acting as barriers to progress in the application of comanagement principles throughout northern Canada. First, shifts in the balance of power and control away from government agencies are typically met by reluctance. A second obstacle is learned dependency, resulting from the appropriation of local authority and responsibility by centralized resource management agencies (Hawkes 1995). The breakdown of traditional aboriginal management structures has many causes: loss of resource access and control; disruption of social systems defining property rights, stewardship responsibilities, and community obligations; interference with intergenerational patterns of education and information transmission; and the introduction of cash economies and wage employment. Reintroducing local level control will require the reversal of centuries of dependency and distrust.

Economic and Employment Opportunities

The VGFA ensures Vuntut Gwitchin involvement in park design, tourism



Barren ground caribou of the porcupine herd filter through Vuntut National Park by the thousands en route to their wintering grounds. The pervasive spiritual and cultural connections between Vuntut Gwitchin and porcupine caribou will endure only if the herd is protected against threats to their natural existence. Photo by Wayne Lynch, Parks Canada.

ventures, and facility construction on the Old Crow town site (DIAND 1993). A Vuntut Gwitchin “community impacts and benefits analysis” must be completed under the terms of the VGFA for any proposed development. This is critical since those who best know local landscapes, wildlife, and natural processes can best assess the potential for overdevelopment (Morrison 1993; Morrison 1995). Local people receive priority in park employment, contract tendering, and business ventures (DIAND 1993). This is highly appropriate since Vuntut Gwitchin have the experience, skills, and interest required to play key roles as park managers, park wardens, park rangers, tour guides, and interpreters.

Vuntut National Park—A New Type of Protected Area

The establishment and comanagement of VNP represents an end to policies and practices based on exclusionary prin-

ciples that have subverted aboriginal rights and destroyed traditional lifestyles. This regime transfers a large measure of control over decisions affecting park planning, use, and management to Vuntut Gwitchin. It emphasizes the underlying importance of integrating traditional aboriginal use and occupancy within park boundaries. VNP has the potential to emerge as a model of how government and aboriginal people can work together to preserve natural areas vital to cultural survival and the achievement of national wilderness conservation goals.

The Future of Protected Area Creation and Management

Recognition of wilderness as a cultural construct will revolutionize our belief in the existence of uninhabited, primordial landscapes. Wilderness preserved need not be wilderness dispossessed from the aboriginal people who view it as homeland. Development of the contemporary

concept of usable occupied wilderness expands not only our view of humanity's place in nature, but adds new dimensions to western conservation goals. The alliance between conservation and aboriginal interests can bridge the gulf between wilderness preservation and sustainable development, enriching protected area values. The emergence of a new type of protected area, one that incorporates aboriginal use, interests, and wisdom, has the potential to ensure both the protection of unique functioning ecosystems and the preservation of ancient lifeways. **IJW**

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Persuasive Communication and Grade Level Effects on Behavioral Intentions within a Wilderness Education Program

BY WILLIAM W. HENDRICKS

Abstract: In investigating the effects of persuasive communication sources and messages and student grade levels on low-impact camping behavioral intentions, the impact monster skit was utilized. This wilderness education program employs a quasi-experimental design (pre-test/post-test). First, third, and sixth grade students ($N=574$) were randomly assigned to treatments. There was a significant difference between pre-test and post-test scores in the short-term behavioral intentions of students following exposure to the program. When considering pre- and post-test scores, a wilderness hiker was more effective than a wilderness ranger as a positive message source, and third and sixth grade students' scores were significantly higher than first grade students' scores. Chi-square tests for 15 of 17 potential behaviors were significant and in the expected direction.

Many wilderness managers use educational programs to supplement wilderness management techniques in efforts to influence visitor behavior. Among the wilderness education efforts of land management agencies is the K–8 “Wilderness and Land Ethic Curriculum” distributed by the Arthur Carhart National Wilderness Training Center. The curriculum teaches appropriate land ethics and wilderness values. The impact monster program is one activity within the curriculum (Hendricks and Watson 1999).

Persuasive Communication

Persuasive communication is often used to influence the behavior of wilderness visitors (Roggenbuck 1992; Roggenbuck and Manfredi 1989). Two potential persuasive communication approaches available are the central and peripheral routes to persuasion (Roggenbuck and Manfredi, 1989). The conceptual basis for these routes was derived from the Elaboration Likelihood Model (Petty and Cacioppo, 1981, 1986). The central route to persuasion depends upon message recipients being motivated and able

to process information (Petty and Cacioppo, 1981, 1986; Petty, McMichael, and Brannon, 1992). With the peripheral route, the message recipient may be unable to process the message content and thus little attention is paid to the actual message (Roggenbuck and Manfredi 1989).

One means of distinguishing between the central and peripheral routes of persuasion is within the content of a message. In general, a message that emphasizes questions results in a higher level of central route processing than a message that relies on assertions (Petty et al. 1992). For example, asking an individual why dishes should not be washed in a stream may result in a higher degree of central route processing than telling the person that they should not wash dishes in a stream.



Article author Bill Hendricks. Photo by Tobi Greene.

(PEER REVIEWED)

Prior to and following the presentation of the program, each student was given a color illustration depicting six appropriate and 11 inappropriate low-impact camping behaviors.

The central route to persuasion is generally not recommended as an effective approach with children due to its information processing requirements. When children lack the ability to process the content of a message, peripheral route factors such as the expertise, attractiveness (Roggenbuck and Manfreda, 1989), likability, (Petty, Cacioppo, and Schumann, 1983) or credibility (Petty, Cacioppo, and Goldman 1981) of a source become consequential. Therefore, it is important to determine the appropriate source of a message in children's wilderness education programs.

Grade Level and Learning Development

A wilderness education program may be more effective at one grade level than another depending on learning and cognitive development of program participants. Sometimes a single program such as the impact monster is used for a variety of ages, including children and adults, yet it is unknown if wilderness educators adapt the program for the audience taking into consideration the cognitive development of the participants.

Behavioral Intentions

Wilderness behavior has been of interest to researchers for more than two decades. Although behavioral intentions or attribute choices have been investigated in a variety of environments (e.g. Beaulieu & Schreyer, 1984; McDonough, 1982; McLaughlin, Krumpe, & Paradise, 1982; Schreyer & Beaulieu, 1986) the selection of low impact behavioral intentions by

children in a controlled setting has received little attention. Among the few studies that have been conducted, Dowell and McCool (1986) found that exposure to a minimum impact program improved knowledge, behavioral intentions, and skills of Boy Scouts. Furthermore, Tracy (1995) determined that fifth grade students exposed to the impact monster skit increased their knowledge of wilderness behavior.

Impact Monster Program

The impact monster skit, which was designed to teach low impact camping techniques (Hansen 1990), has been used extensively by wilderness rangers since its development in the late 1970s. Typically, an "impact monster" as the source of a negative message demonstrates inappropriate wilderness behavior and a "good guy" corrects the behavior. For example, the impact monster may litter, pollute a stream, harm wildlife, and destroy other wilderness resources. The good guy as the source of a positive message informs the impact monster of how less impact could be incurred and more suitable behavior is modeled (Hendricks and Watson 1999). Characters previously used to represent the impact monster have included a person in brightly colored clothing, a wilderness user, a trash-covered impact monster, a white-faced impact monster, and a "country western geek." The good guy role is often a ranger, wilderness user, audience peer, or junior ranger (Hendricks and Watson, 1999). Other roles are played by the audience, providing a

hands-on learning experience (Tracy 1995). The skit is often adapted to specific wilderness areas or ecosystems and has been used for a variety of age groups and settings such as campfire programs, special events, schools, and agency training workshops (Hendricks and Watson 1999). Persuasive communication is an integral part of the impact monster program as it relies on message content and sources in efforts to influence wilderness visitor behavior.

Research Questions

This study attempted to answer the following research questions:

1. Does the source of the impact monster skit "positive message" influence behavioral intentions to adopt appropriate wilderness behavior?
2. Does the source of the impact monster skit "negative message" influence behavioral intentions to adopt appropriate wilderness behavior?
3. Does content format (telling versus asking) influence behavioral intentions to adopt appropriate wilderness behavior?
4. Does grade level (first, third, and sixth) influence behavioral intentions to adopt appropriate wilderness behavior?

Methods

The study was a quasi-experimental design employing a repeated measures analysis of variance. The factors were (a) three grade levels (first, third, and sixth) to indicate the ability to process information; (b) two levels of a positive message source who presented appropriate low-impact techniques (wilderness ranger or wilderness hiker); (c) a negative message source with two levels who presented inappropriate techniques (a "cool" impact monster dressed in brightly colored clothing or an impact monster dressed as a traditional wilderness hiker);

and (d) two versions of the program message content (one with an emphasis on asserting behaviors and the other with questioning as the predominant format).

Short-term behavioral intentions were measured prior to and following presentation of the impact monster skit by having each subject view a wilderness setting illustration. The illustration was adapted, with artist permission, from a 1994 National Geographic, Wilderness System publication.

Study subjects consisted of 574 students in 24 first, third, and sixth grade classes from elementary schools located in communities on the California central coast adjacent to the Los Padres National Forest. Schools were selected based on their willingness to participate in the study. The schools were contacted because they were similar in demographics and student composition. Nearly all subjects spoke English as a first language. The schools were located in communities ranging in population from 405 to 6,600 residents. There were 200 (34.8%) first graders, 202 (35.2%) third graders, and 172 (30.0%) sixth graders in the study. Classes in each grade level were randomly assigned to treatments.

Procedures

Scripts for two versions of the impact monster were written based on skits typically used by wilderness educators. One script was written in an “asking” message format, whereas the second script was a “telling” format, thus creating two levels of persuasive messages requiring different levels of processing capabilities. For example, in the introduction of the “telling” version the students were told what they would not find in a wilderness. In the “asking” version they were asked, “What are some things you would not find in a wilderness?” Similarly, at the conclusion of the skit during the “telling” version the students were told how impacts could be prevented. In the “asking”

version they were asked, “How can impacts be prevented?” The same props, roles, and low impact examples were used for each version. Trained research assistants presented the program. The research assistants maintained the same roles for each skit. The program was presented to each class individually during spring 1996.

Prior to and following the presentation of the program, each student was given a color illustration depicting six appropriate and 11 inappropriate low-impact camping behaviors. Students were asked to circle those activities they would do the next time they went camping in a wilderness setting. Inappropriate behaviors were coded negative one and appropriate behaviors were coded positive one. Aggregate pre-test and post-test scores for the 17 potential behaviors present in the illustration were computed for each subject. Thus, scores could range from negative 11 for a student who selected the 11 inappropriate behaviors and no appropriate behaviors to positive six for a student who selected the six appropriate behaviors and no inappropriate behaviors.

Results

There were 302 boys (52.6%) and 270 girls (47.0%) who participated in the study (gender was not provided for two students). Roles in the skit (frog, tree, rocks, flower, sign, and snake) were played by 192 randomly selected students (33.4%). An analysis was conducted for the full repeated measures model and for each of the potential behavioral intentions. Significant differences between pre-test and post-test scores were present for levels of all factors (see Table 1). The full model indi-



“Asking” message format. Photo by Pam Hamp.

cated a statistically significant difference between pre-test and post-test scores (see Table 2). Interaction effects were present for positive message source hiker/ranger by pre-test/post-test and grade by pre-test/post-test scores.

In addition to the full model analysis, chi square tests were conducted for each of the 17 behaviors that were coded as dichotomous variables (selected and not selected) (see Table 3). The chi-square was significant and in the expected direction for all behaviors except hiking on a trail and using a tent away from a lake. Hiking on a trail changed in the expected direction, but using a tent away from a lake did not.

Conclusions

Regardless of the factor levels presented, the skit in all cases made a difference in pre-test and post-test scores. Thus, for short-term behavioral intentions, knowledge of appropriate behavior was improved by exposure to the skit.

Results indicated that the hiker is a greater influence on behavioral intentions than the ranger as a source of a positive message. There is little difference between the influence of the cool monster and traditional hiker monster as a negative message source. At a statistical significance level of $p < .054$, mean scores for

Table 1—Factor Mean Scores

Factor	Pretest	SD	Posttest	SD	Mean Difference
Positive Message Source					
Wilderness Hiker	- 0.30	2.51	3.21	2.43	3.51*
Wilderness Ranger	0.65	2.74	3.35	2.66	2.69*
Negative Message Source					
Cool Monster	0.17	2.68	3.35	2.58	3.18*
Hiker Monster	0.15	2.65	3.19	2.50	3.04*
Message Content					
Telling	- 0.18	2.74	3.21	2.75	3.39*
Asking	0.48	2.55	3.33	2.34	2.85*
Grade					
First	- 0.56	2.32	1.93	2.71	2.49*
Third	0.68	2.67	3.87	2.07	3.19*
Sixth	0.39	2.85	4.15	2.19	3.76*
Total Sample	0.16	2.66	3.28	2.54	3.12*

Note. Paired sample t-tests for each pair of pretest and posttest factors * $p < .001$.

Table 2—Analysis of Variances for Factors and Pre-test/Post-test

Source	df	SS	MS	F
Within Subjects Effects				
Pre/Post Test	1	1961.13	1961.13	507.02**
Positive Message Hiker/Ranger x Pre/Post Test	1	55.42	55.42	14.33**
Negative Message Impact Monster x Pre/Post Test	1	.89	.89	.23
Message Content x Pre/Post Test	1	14.39	14.39	3.72
Grade x Pre/Post Test	2	82.58	41.29	10.67**
Within Group Error	551	2131.43	3.87	

Note. ** $p < .001$. Using simple deviation contrasts for grade level significant differences were present between first and third grade ($p < .019$), and between first and sixth grade ($p < .001$).

all three grade levels are higher with the telling message than with the asking message, indicating that peripheral messages may be more effective than central route messages within the skit. There is a significant difference between grade level pre-test and post-test scores. Third and sixth grade levels influence behavioral intentions more than first grade.

The collection of pre-test data contributes meaningful information for analysis, yet some caution is advised in interpretation of the results. For the message source and message content factors, classes that began with inferior pre-test scores resulted in a greater mean

difference between pre- and post-test scores. The classes with greater pre-test scores also had greater post-test scores, but the difference was less than those with the lower scores prior to exposure to the skit.

Educational Implications

Although the skit appears to be effective for third and sixth grade students, the appropriateness for first grade students is questionable. There are significant differences between first grade pre- and post-test scores; yet, following the skit less than two appropriate behaviors were identified by this group as behavioral intentions.

With the relatively low p value attained and the practical results that behavioral intentions are greater for all grade levels with a telling message, attention should be given to the skit format. When writing scripts the audience's ability to process information should be considered. For this study, extensive use of prewritten questions was employed to systematically differentiate the telling versus asking skit. The abundance of questions may be beyond the processing capabilities of even the sixth grade students. Further research needs to be pursued regarding this variable before definitive solutions may be offered.

Theoretical Implications

As mentioned previously, at a statistical significance level of $p < .054$, greater mean score differences occur with the telling format of the skit for all three grade levels. This indicates that the message (telling) requiring less cognitive abilities and information processing is potentially the more influential. These results support Roggenbuck and Manfredo's (1989) suggestion that wilderness education programs for children should not employ complex information processing techniques.

Credibility and source attractiveness are key components of peripheral route message sources (Petty and Cacioppo, 1981, 1986; Petty, McMichael, and Brannon, 1992). If limited central route processing is occurring, the importance of actors in the skit becomes magnified. For example, did the students consider the hiker to be a more credible source than the ranger? Expertise is another source variable that comes into play here. In this case, is attractiveness more important than expertise or was the ranger considered less of an expert? Perloff (1993) discussed similarity as an alternative source to attractiveness, expertise, and credibility. Attractive, credible, expert, and

Table 3—Low Impact Camping Behavior Selection

Behavior	Pretest Selection	Percent	Posttest Selection
Inappropriate Behavior			
Banana Peel on Rock	9.8		4.0*
Carve Initials in Tree	23.9		7.3*
Cut Limb on Tree	29.8		7.3*
Wash Dishes in Lake	48.1		13.2*
Build a Large Fire	69.5		17.1*
Horse Tied Next to Lake	39.5		26.5*
Flowers in Jar	30.8		7.9*
Nail in Tree	25.6		6.1*
Hike off Trail	35.2		14.6*
Pick Flower	24.9		5.7*
Listen to Radio	42.5		17.4*
Appropriate Behavior			
Wash Dishes Away from Lake	56.8		73.9*
Hike on Trail	75.8		79.6
Use of Trail Sign	48.6		58.9*
Smell Flower	58.0		76.7*
Use a Stove	59.9		79.1*
Tent Away from Lake	87.1		83.3

Note. A McNemar test for related dichotomous variables was used to conduct a chi-square analysis. * $p < .0001$.

similar sources may have differing influences on behavioral intentions of participants in the program.

Refinements based on sound theory can potentially improve the effectiveness of the impact monster program. Nevertheless, the results of this research and Tracy's (1995) study provide evidence that current versions of the skit may influence short-term behavioral intentions, and the program should remain a tool for promoting appropriate wilderness behavior. **IJW**

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Wilderness@Internet

Using the Internet as a Survey Research Tool: Potentials and Pitfalls

BY DIANE B. GAEDE AND JERRY J. VASKE

Recent research shows that the average wilderness user is a 37-year-old, college-educated male (69%) who lives in an urban area (Cook and Borrie 1995; Watson, et al. 1995). The typical Internet user is a 35-year-old, college-educated male (67%) who lives in an urban area (GVU 1997). Such dramatic similarities suggest at least three things. First, this column in *IJW* is aptly named. Second, wilderness users are likely to be Internet proficient. And finally, the Internet may offer a viable technique for communicating with the general public.

This paper explores the potentials and pitfalls of using the Internet to gather information about the public's views on natural resource management. Data for this investigation were obtained from two surveys of national park visitors. The first, a phone interview, was based on a national random sample of individuals. The second was a World-Wide-Web-based survey and included a self-selected sample of respondents who voluntarily completed the online instrument. The two samples of individuals are compared relative to their demographic profiles, frequency of national park visitation, general beliefs regarding limiting and controlling visitation to national parks, and beliefs about current issues facing specific national parks.

Electronic Surveys: The Potential

Currently, about 50% of all U.S. households have computers and about 22% have access to the Internet in their home. Although 35% of all Americans have accessed the Internet at least once (Witt 1997), this estimate changes daily (Tapscott 1998). Internationally, there are 10% to 15% fewer Internet users in Europe than in the United States and Canada. In third-world nations less than 10% of the population is connected to the Internet (GVU 1997), but this too is changing rapidly.

Electronic surveys distributed via the Internet offer the potential for gathering information from wilderness users on a range of topics of interest to natural resource managers. Web-based surveys offer at least three advantages. First, compared to traditional survey modes (e.g., telephone interviews), web-based surveys can be completed faster, especially for large samples where the number of telephones and trained interviewers limit the number of completions per day (Schaefer and Dillman 1998). Second, the costs associated with data collection are substantially reduced for Internet surveys since the methodology eliminates postage, printing and/or interviewer costs (Smith 1997; Walsh, et al. 1992). Third, graphic interfaces and branch/fill capabilities allow for survey presentation in formats that have previously been difficult to achieve (Schmidt 1997). Despite these advantages, several methodological questions remain unanswered. For example, to what extent do the findings from a web survey approximate those from a phone survey? To what extent are web-based data generalizable to the larger population?

Electronic Surveys: The Pitfalls

All surveys strive to obtain a sample that is representative of the population in question. Survey mode (web surveys versus telephone interviews) is important because it influences who is included in the sample frame as well as who responds from within that frame. Mode differences arise when the respondents and nonrespondents for one type of survey differ from those of another.

Two types of nonresponse bias can be distinguished. First, sample frame or coverage bias refers to whether certain people in a population are not included in a sample frame because they are unreachable (Dillman, et al. 1996); for example, individuals who do not have access to or use the Internet. Second, sample nonresponse bias focuses on differences between

respondents and nonrespondents who refuse to answer all or portions of the survey.

Phone and web surveys have different coverage and sample nonresponse problems. Coverage problems occur for telephone surveys because respondents must be available when the interviewer calls. Specific to web surveys, the available evidence suggests that when compared to the U.S. population, Internet users tend to be younger, predominantly male, and more highly educated (Webster 1998; GVU 1997), findings that have consequences for representing the population.

Methods

This study explores these potential sources of bias between web and telephone surveys for two samples of national park visitors. Responses to socio-demographic questions, park visitation rates, general beliefs about limiting/controlling park visitation, and beliefs about current issues facing specific national parks are examined.

Data for this study come from two National Parks and Conservation Association (NPCA) survey projects. The phone survey was based on a national random sample of individuals (Vaske, et al. 1996), while the web survey was based on a self-selected sample of respondents who voluntarily completed the online instrument.

The Telephone Survey

A sample of random digit numbers was purchased from a commercial sampling firm. The sample was designed to be proportional to the population of each state, and representative of the population in age, income, and ethnicity. The initial sample included 4,400 numbers. Trained interviewers conducted the phone survey during the spring of 1996. Interviewers made up to three "call-backs" to numbers that were busy or

had answering machines. Approximately 47% of the numbers did not result in contact. Of the remaining 53%, or 2,310 households, 809 individuals (18 or older) agreed to complete the survey (response rate=35%).

The World Wide Web Survey

During the summer of 1996, the phone survey was converted to html (hypertext mark-up language) and was posted on the NPCA web home page from July 18 to December 1, 1996. During that time frame, approximately 16,114 individuals visited the NPCA home page. Of

these, 1,653 opened the cover letter associated with the web survey. The web survey sample consisted of respondents who voluntarily completed the computerized self-administered interview. Approximately 300 web surveys were received each month (July through November). After screening for and removing duplicate submissions ($n=33$) of the survey, 1,120 completed questionnaires were available for analysis.

Variables Measured

Questions on the phone and web surveys measured the same variables.

Table 1—Respondent Demographics and Park Visitation Rates by Survey Type¹

	Phone (%)	Web (%)	χ^2	Phi
Gender			39.0	.16
Male	43	59		
Female	57	41		
Age			138.6	.30
13 – 24	9	18		
25 – 34	21	30		
35 – 44	26	25		
45 – 54	19	19		
55 – 64	11	6		
65 +	14	2		
Mean age ²	44.7	36.2		
Education			245.6	.40
Some high school or less	10	2		
HS or Vocational Tech	24	4		
Some college / 2 year grad	26	24		
4 year college graduate	22	27		
Post grad work or degree	18	43		
Residence			67.6	.21
Farm or rural area	16	6		
Small town (< 5000)	13	8		
Small city (5,000 – 50,000)	28	27		
Large city (50,000-500,000)	21	24		
Very large city (500,000 +)	10	14		
Suburb	12	21		
Number of parks visited in the past 3 years			342.0	.45
0	21	2		
1	18	7		
2 to 3	32	24		
4 to 5	16	23		
6 to 10	8	24		
11 to 20	3	13		
More than 20	2	7		
Mean number of parks visited ³	3.91	8.48		

1. All χ^2 values are significant at $p < .001$

2. $t = 11.13$, $p < .001$

3. $t = 8.35$, $p < .001$

Table 2—Support for Limiting/Controlling Visitation to National Parks by Survey Type¹

	Phone (%)	Web (%)	χ^2	Phi
Should the National Park Service take steps to ensure crowding does not detract from park visits?			66.2	.21
Yes	78	86		
No	16	4		
Do not know	6	10		
Should the National Park Service limit visitors if the number of visitors is harming park resources?			12.1	.09
Yes	92	94		
No	6	3		
Do not know	2	3		
Would you be willing to make a reservation to enter popular parks if reservations would reduce crowding and protect park resources?			17.3	.11
Yes	89	91		
No	8	4		
Do not know	3	5		
Would you be willing to use shuttle buses in popular parks to reduce traffic congestion and help protect park resources?			16.5	.10
Yes	88	85		
No	9	8		
Do not know	3	7		

1. All χ^2 values significant at $p < .003$

Respondents were first asked, "Have you ever visited any national park areas (defined as "the 369 areas managed by the National Park Service; including National Parks and Monuments, National Recreation Areas, National Historic Sites, National Lakeshores and Seashores, and so on"). Responses were coded in a dichotomous choice ("Yes" or "No") format. Only those individuals who indicated "Yes" are included here (81%—phone survey, $n=633$; 98%—web survey, $n=1080$).

A fill-in-the-blank question asked individuals to specify the number of national parks visited in the past three years. Four socio-demographic variables (gender, age, education, and place of residence) were included on both surveys. Table 1 shows the re-

sponse options for these demographic questions. Four questions examined respondents' support for limiting and/or controlling visitation to national parks. These questions ranged from limiting use to protect park experiences and the natural environment, to instituting a reservation system and a shuttle bus system. Table 2 shows the actual wording of these questions. For each variable, responses were coded as "Yes," "No," or "Do not know." Five questions addressed respondents' views on a range of issues facing specific national parks (e.g., Grand Canyon, Great Smoky Mountains, Yellowstone, Voyageurs, and Everglades). The issues along with the question wording are shown in Table 3. Responses to each issue were coded as "Yes," "No," or "Do not know."

Results Socio-Demographic and Park Visitation Comparisons

The two samples differed statistically on all four socio-demographic variables ($\chi^2 > 39.0$, $p < .001$, in all tests, Table 1). Compared to 1996 U.S. Census data, the telephone sample approximated the age, gender, and education characteristics of the U.S. population (U.S. Bureau of the Census, 1997). Relative to gender differences, phone respondents were 43% male (57% female). In the web survey, the distribution was reversed (59% male, 41% female). Telephone respondents were, on average, older than web respondents ($M=44.7$ and $M=36.2$, respectively, $t=11.13$, $p < .001$). After recoding this variable into discrete categories, the largest differences were in the two oldest age groupings. For example, 14% of the phone respondents were 65 or older, but only 2% of the web respondents were in this age category.

Consistent with other surveys of Internet users, the web sample was more highly educated than the phone sample (Table 1). For example, 43% of the individuals who volunteered to complete the web survey reported post-graduate work; only 18% of the phone sample indicated this level of education. At the other extreme, 2% of the web sample were in the "some high school or less" category, compared to 10% of the phone respondents. Relative to place of residence, 57% of the individuals in the phone sample lived in areas with population densities less than or equal to 50,000, while 59% of the web respondents lived in cities with populations over 50,000 (Table 1).

On average, the web respondents had visited twice as many national parks in the last three years ($M=8.48$) as the phone respondents ($M=3.91$)

($t=8.35, p < .001$). Given that individuals in the web sample were on the NPCA web home page, their interest in national parks is likely to be greater, and thus it is not surprising that their visitation rates were also higher.

Taken together, these socio-demographic and park visitation comparisons highlight the magnitude of differences between the random sample of phone respondents and the self-selected sample of individuals who volunteered to complete the web survey. Although the socio-demographic distributions for the web respondents were similar to those reported in other studies of Internet users, the results reported here suggest that coverage bias issues are problematic for representing the U.S. population with web-based surveys.

General Beliefs about Limiting and/or Controlling Visitation

Four questions in the survey asked respondents whether they supported limiting and/or controlling visitation to national parks (Table 2). Similar to the socio-demographic and park visitation analyses, the phone and web samples differed statistically (based on the χ^2) on all four comparisons. However, unlike these previous comparisons where the strength of the association was relatively strong (average $\Phi=.30$, see Table 1), the strength of the relationship between survey mode and beliefs about limiting/controlling visitation was not as strong (average $\Phi=.13$; Table 2). Moreover, from an applied perspective, data from either sample would yield the same conclusion regarding acceptable national park management strategies. For example, more than three-quarters of the respondents in the phone and web surveys supported the concepts of limiting visitor numbers, requiring reservations,

Table 3—Specific National Park Issues by Survey Type¹

	Phone (%)	Web (%)	χ^2	Phi
Pollution from power plants can significantly worsen visibility at National Parks like Grand Canyon and Great Smoky Mountains. Should companies be required to clean up their pollution, even if it meant you might pay more for utilities and consumer products?			22.3	.12
Yes	87	92		
No	7	2		
Do not know	6	6		
A private company plans to build a large gold mine less than three miles from Yellowstone National Park. Should the federal government stop the mine to avoid potential risks to the park's land, water, and wildlife?			27.8	.14
Yes	72	83		
No	12	6		
Do not know	16	11		
Congress is considering opening more land in Minnesota's Voyageurs National Park to snowmobiles. Should these areas be opened to snowmobiles?			108.5	.27
Yes	19	5		
No	60	80		
Do not know	21	15		
Restoring the natural conditions in Florida's Everglades National Park is a priority for Congress, but finding the money to pay for it has been difficult. One option is a tax on Florida's sugar cane industry, which contributes to the Park's pollution. Would you be willing to pay 5 cents more for a bag of sugar if you knew the money would help restore the Everglades?			23.5	.13
Yes	89	95		
No	7	3		
Do not know	4	2		
Some people think the wolves are an important part of the Yellowstone's ecosystem and add to its wilderness values. Other people who live near the park think the wolves will kill livestock or endanger people and should not have been returned. Do you think wolves should have been returned to Yellowstone?			119.7	.28
Yes	63	86		
No	17	4		
Do not know	20	10		

1. All χ^2 values significant at $p < .002$

and using shuttle buses to reduce crowding and protect park resources.

Beliefs about Specific National Park Issues

Five questions in the survey asked about current issues facing specific national parks (Table 3). Similar to the general beliefs questions, although the two samples differed statistically ($\chi^2 > 22.3, p < .002$, in all analyses), the pattern of responses shows con-

siderable agreement regarding acceptable management strategies. For example, more than 85% of both samples (87% phone survey and 91% web survey) were willing to pay more for their utilities if visibility problems due to pollution from power plant emissions were reduced in Grand Canyon and Smoky Mountain National Parks. Similarly, more than 70% of all respondents believed the federal government should stop the mine near Yellowstone National

Park to avoid potential risks to the park's land, water, and wildlife.

Conclusions

The findings presented here suggest several considerations regarding the use of electronic surveys. First, while Internet surveys reduce data collection costs and provide faster turnaround when compared to telephone interviews, population coverage problems are a major limitation of web-based surveys. Data reported here show marked differences in socio-demographic characteristics between the self-selected individuals who voluntarily completed the online survey and the random sample of phone respondents. Given the rapid rate at which Internet usage is increasing, it is not clear who is included in the sample frame. Moreover, there is currently no way for researchers to follow-up with nonrespondents. In this study, for example, more individuals opened the web survey than actually completed the instrument.

While these sampling issues currently pose limitations for using web-

based surveys, many of these problems will disappear as Internet usage continues to grow. Telephones were initially communication devices for the elite until they gained mass acceptance. As the cost of technology decreases, personal computers with an Internet connection are rapidly becoming a part of more U.S. households. Similar to the telephone, once the Internet gains mass popularity, random sampling will become more feasible.

Second, these sampling issues carry over to other variables researchers may be interested in measuring. In this investigation, for example, web respondents visited twice as many national parks when compared to phone respondents. Given that the web survey was accessed through the NPCA website, such differences probably reflect a higher level of commitment to national parks than is found in the general population.

Third, caution must be used when evaluating respondents' general and specific beliefs regarding acceptable management strategies derived from different survey modes. While the per-

centages of individuals in identical response categories were similar, web respondents were generally more positive toward the management action than the phone respondents. If only the web data were available, managers would overestimate the extent to which the visiting public approved of the policy.

Taken together, these findings suggest that web-based survey research has the potential for assisting in management decisions. At the present time, however, population coverage and sample nonresponse biases severely limit widespread application of the methodology. **IJW**

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Commercial and Private Boat Use on the Salmon River in the Frank Church-River of No Return Wilderness, United States

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Abstract: Historically, float permits on the Middle and Main Forks of the Salmon River in Idaho, United States, have been approximately split evenly between private and commercial float groups. A study of these two dominant user groups was conducted to understand likely response of the two groups to potential changes in management. Findings from this research emphasize many differences between private and commercial users. Though these groups are using similar equipment and traveling on the same river at the same time, they differ in most aspects of their expectations for the trip, problems they encounter, and what they think managers should do to protect the resource.

When the Middle Fork of the Salmon River in Idaho was designated “wild” under the Wild and Scenic Rivers Act of 1968, its values as a free-flowing wilderness river were protected by federal law. A “wild” river is defined as the river and its adjacent land that is “generally inaccessible except by trail, with watersheds or shorelines essentially primitive.” The U.S. Forest Service (USFS) was given the authority to administer the river in a manner that protects or enhances its wilderness characteristics, including limiting nonconforming uses and developing a protective management plan. The “wild” section of the Middle Fork extends nearly 90 miles within the Frank Church-River of No Return Wilderness (FC-RONRW).

Also within the FC-RONRW, the Main Stem of the Salmon River travels for approximately 79 miles. This portion of the Salmon River was designated “wild” with passage of the Central Idaho Wilderness Act (CIWA) in 1980. The Main Stem is managed under the Wild and Scenic Rivers Act, with additional direction in the CIWA to allow certain uses that conflict with The Wilderness Act, such as allowing motorized vehicles, motorized boats, air strips, commercial lodges, and substantial recreational use.



Article authors Don Hunger (left) and Kurt Becker (center) receive award from U.S. Forest Service Chief Mike Dombeck for research on the Salmon River. Photo by U.S. Forest Service.

On both rivers, the number of private and commercial groups allowed to float each day of the controlled use season

(PEER REVIEWED)



A "wild" river is generally inaccessible except by trail, with watersheds or shorelines essentially primitive. Leopold Institute photo.

is approximately split in half. Private use is limited through a lottery system with chances to receive a permit upon application estimated at one in 23. Commercial clients do not apply for a limited number of permits. Outfitters receive an allocation of launches, constrained only by limits on group sizes, equipment, and adequate camping locations.

Stratifying Wilderness Visitors into Meaningful Consumer Groups

Watson and Cronn (1994) reported that wilderness visitors with a more extensive history of visiting a particular wilderness will more likely notice



In this study, visitors completed a survey in stages as they floated down the rivers. Leopold Institute photo.

social and resource impact problems. If general visitor populations are surveyed in order to understand trends in perceptions of conditions or likely response to management actions, very different results will be obtained than when more specific subpopulations (strata) of the user public are examined. Watson and Cronn (1994) suggest

that where there is a high percentage of first-time visitors, any type of survey or experienced quality monitoring activities may lead to the conclusion that everything is fine when, in fact, conditions are actually deteriorating. On the other hand, places that receive high percentages of repeat use should find general visitor surveys more useful to track perceptions of condition changes. Watson and Cronn (1994) concluded that managers need a more complete understanding of the relationship between variables such as amount of past experience, visitor expectations for the trip, and evaluations of resource and social conditions in order to consider visitor input in making decisions about how to care for the wilderness.

On the Salmon River, as at many other places in the western United States, there are commercially outfitted and guided groups and there are private parties who provide their own equipment, supplies, and the skills needed to travel the river. Previous research, such as Watson and Cronn (1994)

above, suggests against simply lumping river users of such different orientation toward the resource into a single group and making decisions on the basis of this information. Average responses would suggest the existence of an average visitor. In fact, if identifiable subpopulations exist we must understand these subpopulations better in order to make management decisions.

Commercial versus Private Boater Sampling

Commercial and private boaters were contacted on both rivers (Hunger 1996). During the primary use season of 1995, 10 pairs of days were randomly selected from all possible days between July 15 and September 16. This included eight sampling pairs during the summer permit season and two sampling pairs in September, outside the summer permit season. There was no differentiation made between weekdays or weekends because parties launch in equal numbers every day of the week. On the main fork of the river the maximum number of permits per day is for eight groups, while only seven groups are allowed to launch each day on the middle fork of the river.

On sampling days, each launch party was contacted after they had received a required prelaunch orientation by a USFS river manager and before they boarded their boats. Up to 10 people, ages 16 and older, from each group were randomly selected for the survey. In groups of 10 or less, all were surveyed. Commercial guides were not included in the pool of potential respondents. This sampling process resulted in 238 commercial clients and 301 private party members.

Implementation of the survey methodology led to information being obtained at various times during the trip. Respondents received a survey

composed of five sections at the launch point. The launch-point section was completed in the presence of a survey administrator. In this pretrip survey, the floaters were queried about their expectations for the trip, their past river use history, and some basic demographics such as age, education, income, and residence. Four other sections were completed in stages during the trip and deposited in specially marked repository boxes at easily identified locations.

Besides the launch-point survey, visitors were asked to answer questions on their first, third, and last nights on the river, and at the take-out point. Of interest to this article, on the third night floaters were asked about their support or opposition to several potential management actions for minimizing recreational floater use impacts on the resource or the experiences of others (about 58% of the launch-point sample completed this section). At the take-out point they were asked about problems they encountered on the trip (just under 50% of the launch-point sample responded).

All users were asked about their past experience level on the Salmon River and about their past experience on other overnight river trips. Every floater was also asked to indicate his or her personal level of skill in river travel on a scale of "beginner, novice, intermediate, advanced, or expert." Information was collected on expectations (using categorical responses) for the number of people and parties they would see daily, level of impacts they would find, and other things (such as wildlife, modern structures, and low-flying aircraft) they might see on the trip.

Visitor support for potential management actions that were being considered by an interdisciplinary planning team, or had been mentioned in recent public involvement meetings, were

measured on a five-point scale ranging from "strongly support" to "strongly oppose" with both a neutral point on the scale for respondents who could not decide their support and a column labeled "no opinion" for those who either did not care or had insufficient knowledge to judge how much they supported proposed actions. Visitors were asked to report how much certain things influenced their river trip by rating them as being "no problem at all," "a small problem," "a moderate problem," or "a big problem." The items evaluated included potential congestion/crowding problems and human-caused resource impact problems.



Commercial clients were more opposed to reducing the allowable number of people per float party. Leopold Institute photo.

User Characteristics of Boaters

Commercial clients and private boaters differed in many ways (see Table 1). Though commercial floaters tended to be older, both groups' average age was

Table 1—Launch-point survey results comparing characteristics of private and commercial floaters on the Salmon River, Frank Church-River of No Return Wilderness.

Characteristics	Private Floaters	Commercial Clients
A. Age (average years)*	41.9	42.9
B. Grew up in major metropolitan center of over 1 million people (%)**	12.0	21.7
C. Now live in major metropolitan center of over 1 million people (%)**	11.5	26.5
D. Educational achievement equiv. to Ph.D. (%)*	13.8	20.6
E. Household income above \$100,000/year (%)**	14.0	43.4
F. Previous overnight float trips on any segment of the Salmon River (average)*	5.1	.5
G. Previous overnight float trips on any river (average)*	27.4	3.9
H. Previous trips with a commercial guide (avg)*	5.8	2.4
I. Previous trips where you guided your own boat (average)*	33.5	4.0
J. Years since first overnight float trip (average)*	12.2	5.8
K. Self-evaluation of river-running skills**		
Beginner or Novice (%)	33.6	71.0
Intermediate or Advanced (%)	53.7	28.1
Expert (%)	12.8	.8
L. Float party size (average)*	12.0	16.0
M. Length of trip in days (average)*	6.5	5.6

Logistic Regression: $Z=3.5778 - 0.0475 (G) - 0.1690 (F) + 0.0632 (H) - 0.2343 (K) - 0.4149 (M) + 0.0399 (L) - 1.1792 (E)$ (78% correct prediction for private floaters, 82% correct prediction for commercial clients) ($R^2(\text{Nagelkerke})=.435$).

*Means were significantly different for the two groups at $p \leq .05$ (Student t-test)

**Distributions of responses were significantly different for the two groups at $p \leq .05$ (Chi-square analysis)

early 40s. About twice as many commercial clients grew up and now live in major metropolitan areas. This more urban group of users reported that 21% have completed the equivalent of doctoral degrees while only 14% of private floaters have completed doctoral level degrees. Reflective partially of high education attainment levels and highly urban residence, we suspect, those who pay someone else to take them down the Salmon River are better able to pay for these services, with over 43% reporting household incomes of over \$100,000 per year, compared to only 14% of private floaters in this income bracket.

On past river use characteristics, these two groups also appear to be very different. Private users averaged more

previous trips on the Salmon River, had taken more previous overnight float trips on rivers, had guided their own watercraft on a greater number of previous river trips, and had taken their first overnight float trip more years ago than commercial clients reported. Private users even exceeded commercial clients on the average number of previous river trips taken with a commercial guide. Also, private floaters evaluate their river running skills higher than commercial clients. About 48% of commercial clients rate themselves as “beginner”; 54% of private floaters rate themselves as “intermediate” to “advanced.” Private floaters tended to be in smaller groups and stayed longer.

Using a stepwise logistic regression routine, the pool of 13 demographic

and past use history variables was reduced to seven significant predictor variables. The significance value for inserting a variable was specified at 0.05, while that for removing a variable was set at 0.10. The final solution produced an overall prediction ability of 78% (a 28% improvement over chance alone). Using the resultant model to predict classification for new subjects, private users would be correctly classified 73% of the time, while commercial users would be correctly identified 82% of the time.

The variables in the final model included the number of previous trips on any river, the number of previous overnight trips on any segment of the Salmon River, the number of previous guided trips, a self-evaluation of river-running skill level, the length of this trip, the number of people in the group, and household income (Table 1). The multiple categories of income used in the survey (nine) were entered as contrasting variables, contrasting with the highest category (>\$100,000), which contained 43% of the commercial floaters and only 14% of the private visitors. For the final model, however, the income variable was broken into only two categories. From examination of the univariate analysis of this variable, it was noted that in all seven categories of income below \$75,000 the percentage of private floaters exceeded that of commercial clients. On the other hand, from \$75,000 up, the percentage of commercial clients dominated. The highest category was chosen as the contrast variable. Overall prediction success was not increased drastically with this change, but interpretation of coefficients seemed clearer. The variable with the largest partial correlation coefficient (R), and therefore with the greatest relative strength in the relationship, was income category.

Table 2—Launch-point survey results comparing expectations of private and commercial floaters on the Salmon River, Frank Church-River of No Return Wilderness.

<u>Expectations</u>	<u>Private Floaters (%)</u>	<u>Commercial Clients (%)</u>
Number of other floating parties seen per day*		
Less than 3	26.4	43.4
Above 4	32.0	18.1
Time within sight of other float parties each day*		
Greater than one hour	41.3	50.8
Time delayed at major rapids by other float parties		
None	32.2	41.5
Camping within sight or sound of other parties		
None	76.5	79.7
Number of modern structures seen per day*		
None	22.5	44.3
3 or more	31.3	17.2
Number of low-flying aircraft see per day*		
None	25.2	33.3
3 or more	27.1	15.4
Human-caused vegetation loss and bare ground at campsites*		
None	9.8	17.7
//Substantial amount	10.5	3.2
Human-damaged trees at campsites*		
None	46.1	60.3
Moderate to Substantial amount	17.1	9.0
Pieces of litter*		
None	46.1	60.3
Human waste		
None	78.8	81.7
Wildlife		
Moderate amount	56.3	54.9
Substantial amount	31.9	31.4
Historical sites		
Moderate amount	49.6	50.2

*Distribution of responses are significantly different for the two groups at $p < .05$ (Chi-square analysis)

River Trip Expectations

Private floaters expected to see significantly more floating parties, to be within sight of other float parties more of the time, to be delayed by other parties at major rapids a greater amount of time, to see more modern human structures, to see more human-caused vegetation loss and bare ground at campsites, to see more human-damaged trees at campsites, and to see more litter during their river trip (see Table 2). Both groups had high expectations for seeing no one near their campsites each night, high expectations for seeing wildlife, and very little expectation of encountering human waste during the trip.

Perceptions of Problems

There is a mandatory human waste packout procedure on both rivers, and 81% of commercial clients and 69% of private users reported no problems encountering human waste on the trip, suggesting high compliance with this regulation (see Table 3). Only a few from each group reported this as a "small problem." For commercial clients, 24% said litter was a problem along the river, while more than half of private boaters felt it was a problem. But, of those private boaters feeling it was a problem, most thought it was only a small problem.

There were some parameters that were not scored universally high. Private boaters indicated a higher problem score than commercial floaters on the following things: the number of people seen on the river, the amount of time spent in sight of other parties, the number of parties passing their campsites, having other campsites within sight or sound of their own, seeing human-caused vegetation damage around campsites, seeing damaged trees around campsites, the number of modern structures encountered along the river, and low-flying aircraft.

Table 3—Take-out survey results indicating problems for private and commercial floaters on the Salmon River, Frank Church-River of No Return Wilderness.

<u>Potential Problem</u>	<u>Private Floater</u>	<u>Commercial Client</u>
	No Problem (%)	No Problem (%)
Number of people seen each day*	46.0	65.3
Amount of time within sight of other float parties	41.9	54.2
Number of times delayed at rapids by other float parties	78.4	79.2
Number of float parties that pass campsite	61.6	75.8
Camping within sight or sound of another party*	75.6	89.0
The amount of human-caused vegetative loss and bare ground at camps*	39.5	59.7
The amount of trees around a campsite damaged by people	54.8	68.6
The number of modern structures seen*	44.4	58.5
The amount of litter seen daily*	46.8	75.8
The number of low-flying aircraft seen*	46.8	56.7
Encountering human waste	68.5	80.7

* Distributions are different for the two groups.

Table 4—Third night survey results comparing support/opposition for management actions for private and commercial floaters for the Salmon River, Frank Church-River of No Return Wilderness.

	Oppose (%)	<u>Private Floater</u>		<u>Commercial Client</u>		
		Neut (%)	Supp. (%)	Oppose (%)	Neut (%)	Supp. (%)
<u>River Accessibility</u>						
Increase parking spaces at launch sites	52.0	35.5	12.5	48.8	43.1	8.1
Provide separate outfitter and private launch sites to reduce congestion	41.2	32.0	26.8	31.7	40.8	27.5
Increase daily launch permits*	76.1	17.6	6.3	80.6	14.2	5.2
Decrease daily launch permits	38.4	34.0	27.7	35.4	38.6	25.0
Extend summer lottery reservation system to spring and fall*	45.0	28.6	26.4	16.2	48.6	35.1
Maintain current level of low-flying aircraft traffic*	35.1	37.7	27.3	11.8	42.2	46.1
<u>Social Issues</u>						
Close selected campsites within sight or sound of each other	32.1	30.8	37.2	27.2	35.3	37.5
Reduce the allowable number of people per party*	27.2	27.2	45.6	42.8	32.3	24.8
Reduce the number of boats per party*	44.6	27.0	28.3	43.2	37.1	19.7
Reduce the size of float parties, but allow more launches per day	69.4	19.4	11.3	73.9	20.8	5.4
Establish launch schedules to avoid congestion*	37.6	22.9	39.5	16.3	20.7	62.9
Require firepans	5.0	4.5	90.5	2.1	10.1	87.7
Require visitors to carry out human waste*	6.3	6.3	87.4	18.5	8.9	72.6
Offer more pre-trip information on historical sites	6.5	29.2	64.3	2.3	27.1	70.6

*Distribution of responses are significantly different for the two groups at $p < .05$ (Chi-square analysis)

Evaluations of Management Options and Considerations

Private floaters demonstrated greater opposition to the current level of low-flying aircraft, though about 40% of both groups are neutral on this issue (see Table 4). Commercial clients tended more toward support for the current level of flights. For other river accessibility issues, private floaters scored higher in opposition (50% strongly oppose) to increasing daily launch limits (though commercial clients opposed [31% strongly oppose] this action, too) and for extending the summer lottery system to spring and fall seasons (a high percentage of commercial clients were neutral on this item, as it would have little effect on their ability to take trips on the river). About half of both groups opposed increasing parking spaces at launch sites (another 40% of each group were neutral). On social issues, commercial clients were more opposed to reducing the allowable number of people per float party, less supportive of reducing the number of boats per party, more supportive of establishing launch schedules to avoid down-river congestion, and less supportive of requirements for carrying out human waste.

Commercial clients appear to have a more pure image of what a river trip is going to be like through this wilderness. They expected to see fewer people and fewer impacts than the private parties expected. This difference in expectations can easily be explained by the significant differences between the two groups in past river experience on these river segments and elsewhere. Possibly they were swayed to believe wilder conditions existed than they would actually find. Their expectations may also have been

correlated with the amount of money they paid for the trip.

But, exposed to the same river, during the same use season, the private users who were expecting less pristine conditions were more bothered by the conditions they did find. This is contrary to some previous work that suggests evaluations of quality are a function of the relationship between expectations and actual conditions encountered. These more urban, higher educated, wealthier users of the river seem to rationalize the higher impacts and social conditions they encountered much better than the private users.

Of all the demographic differences between the two groups, the uncommonly high income of the commercial users dominates when analyzed in a multivariate fashion. It must be uncommon to find such clear distinction between two groups of users of the same resource, using similar equipment (unlike canoeists and motor boaters on a lake, or snowmobilers and cross-country skiers) on a similar trip. This income difference clarifies for the manager and the policy maker the economic segment of society represented by the commercial clients. Since party size of commercial groups is one-fourth larger on the average than for private parties (16 versus 12)—though number of permits is nearly the same—this commercial client group is the dominant user of these rivers during the high use season. Is the implication, therefore, that they should be dominant in determining management for the river in the future? How do we take into consideration a subpopulation of visitors who appear to be fairly casual in their relationship with primitive environments? Should we weigh their responses more heavily because they are the dominant user,

or less because of this apparent casual relationship?

While preferences for management do not seem extremely different in their broadest sense across these two groups, the high proportions of floaters indicating problems with numbers of other floaters, numbers of modern structures and aircraft, and human-caused impacts around campsites suggests the need for proactive management actions. Legislative intent is clear on these two rivers, despite overlays of wilderness and wild-river legislation. Control of impacts and crowds are necessary to maintain wilderness and wildness for visitors to these important national treasures. We must focus management on maintaining opportunities to experience challenge, solitude, freedom, and primitive nature. In a country that is dedicated to both private enterprise and the democratic process, our federal land managers are faced with decisions that will greatly affect the resource and wilderness opportunities of future generations. **IJW**

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Editor's note: As a result of the 6th World Wilderness Congress, The WILD Foundation and associates are conducting research as part of the Asian Wilderness Initiative. To date, it appears that Sri Lanka is the only nation in Asia that has legislation recognizing wilderness. Following, the former Director of Wildlife provides some useful and interesting background.

—Vance G. Martin, President, The WILD Foundation

Origins, Evolution, and Present Status of the Protected Areas of Sri Lanka

BY LYN DE ALWIS

Sri Lanka in Ancient Times

In Asia the old belief systems in largely agricultural societies saw the wilderness as the provider of all human requirements. It therefore had to be treated with awe and respect, and its bounty had to be shared with all other living beings within it. Humans were in no way superior. Spiritually, too, the wilderness was seen as a source of inspiration and healing of troubled minds. Whether it was Lord Buddha, Jesus Christ, or Prophet Mohammed, they all withdrew into the quietness of the wilderness to contemplate, to seek the truth, or to pray.

Sri Lanka was fortunate to receive the gift of Buddhism some 300 years before Christ, bringing with it love and compassion for all beings and necessarily for the forests in which they lived. King Dharmasoka of India and King Devenampiya Tissa of Sri Lanka were great friends, and the former was quick to share gifts with the latter. So, no sooner had he embraced the teachings of Lord Buddha than he sent his son to the Sinhala king with a message to share this great Truth. Later, King Dharmasoka sent missionaries to Sri Lanka (or Lanka as it was then probably known) to explain the Buddhist Dharma. One such explanation had to do with the fact that people and all living beings were equal. The teaching was as follows: "O great King, the birds of the air and the animals have an equal right to live in this land as thou: the land belongs to the people and all living beings and thou art only the guardian of it."

The ancient texts and chronicles bear witness to the fact that monarch, clergy, and laity ensured that this principle was never violated. On the contrary we can say that every opportunity was seized to perpetuate the principle and to spread it

throughout the country. Thus was born the concept of "sanctuary" for animals and the unique condition that the largest of them were in the environs of the cities.

While protection of wild landscape for watershed purposes is an ancient practice in Sri Lanka, the sanctuary concept preceded even that. There is a stone-pillar inscription from the twelfth century near Anuradhapura in which the king (Kirti Nissanka Malla) "Ordered by beat of drums that no animal should be killed within a radius of seven gaw (1 gaw=5.1 kilometers or 3.06 miles) of the city of Anuradhapura; he gave security to animals, he gave security to the fish in the 12 great tanks, he gave security to birds."

In direct contrast to this was the kind of sanctuary that the British declared in 1909. They were "game" sanctuaries in which game was protected for sportsmen to kill! Actually, by the twelfth century Sri Lanka had reached the zenith of its prosperity as an agricultural nation. It had been referred to as "the granary of the East." We must also remember that by this time its population, though not as high as 20 million as some historians try to make out, was "exploding" in the face of prosperity. To have succeeded in transforming natural ecosystems into a comprehensive agrosystem meant that the people of Sri Lanka was practicing stringent conservation methods, especially those of water and of soil. It was another clever King—Prarkrama Bahu—who reigned in 1153 A.D. who directed



Article author Lyn de Alwis.

that “Let not a single drop of water received from rain escape into the sea without being utilized for human benefit.”

Irrigated agricultural lands became the centers of dense populations and perhaps the abode of royalty, state officials, and feudal lords. But outside city limits and the sanctuaries, the land was still clothed in forest. On the fringes were the rural people living in self-contained villages, which is where we can trace the essence of sustainable living—a concept that the West is very magnanimously trying to educate the East in, so many centuries later.

Outside the sanctuary limits, forests fell into two main categories—crown forests and wastelands. Crown land was, as the name implies, forests belonging to the king and into which only royalty had access. Wasteland was unprotected forest land that the people had access to and in which slash-and-burn or shifting agriculture was practiced. The status quo of sanctuary, crown land, and wasteland may have sufficed when the old kingdoms were established in the flat lowlands of the country. But after the thirteenth century we see that waves of foreign invasions, mostly from India, compounded by recurring epidemics of malaria, drove the Sinhala kings into the salubrious highlands, an environment unfamiliar to them.

As more settlers moved into the hill country, obviously more forest had to be opened up. This called for more forward planning in land utilization accompanied by appropriate soil and water conservation techniques. The settlers’ success paved the way for another golden age in our history—the rise of the Kandyan Kingdom in the hill country. As soon as agriculture moved into the hill country we see that the crown forests was further categorized into royal forest, forbidden or sequestered forests, forests for defense, and several other purposes.

The royal forests virtually surrounded the royal palaces and were the preserve of the king. No commoners were allowed entry. A good example of one surviving even today is Udawattekele situated above the palace of the last King of Kandy, behind the Temple of the Tooth. Equally well protected were the forbidden forests (*Sinh.*: *Thahansi kale*), which were invariably dense evergreen forests and were the sources of streams and rivers. We see here the first wilderness areas being protected for ecological purposes. Even colonial rulers on the rampage in the seventeenth, eighteenth, and nineteenth centuries, clearing the magnificent forests of the hill country, respected a few of these wilderness areas that survive to the present day, although drastically reduced in size, as protected wilderness areas. The Sinharaja (Rain) Forest, the Peak Wilderness, the Maha Eliya montane forests (subsequently renamed Horton Plains after a British governor of that name) are some of the better known *thahansi kales*. All these wilderness areas were actively protected by paid *kale korales*, the equivalent of today’s forest rangers.

The Colonial Period

This was the idyllic scenario in Sri Lanka at the turn of the sixteenth century, when the ruthless Portuguese armies arrived. The invaders, who began in 1505 and were bolstered by arms and ammunition, made short work of the Sinhalese defenses and quickly captured the maritime provinces. Though they plundered the natural wealth of the country and exported it by the shipload, they didn’t wipe out the forests. However, their devastating elephant capture operations and shooting of wildlife left the country stunned.

After 150 years, the Dutch made their aggressive appearance, vanquished the Portuguese, and decided to stay for 150 years. Being a maritime power themselves, the Dutch concen-

trated on the coastal areas, strengthening the trade activities of the Dutch East India Company. They moved into the hinterland only to plant cinnamon and other spices that were valuable commodities at that time.

Among the colonial powers it was the British who did the most damage to the wilderness areas, regardless of whether they were protected. Apart from the Brits’ single-minded desire to subjugate the people, they set about planting economic crops—tea and rubber—for which the lush forests protecting the hill country were systematically annihilated. The British heartlessly dispossessed the people of all their land and destroyed completely the very essence of life in this blessed country. It is said that at one stage they laid absolute claim to 95% of the land. The crown forests of the Sinhala kings were subtly changed to Crown land under the British Crown.

Not only did the British usurp all village land, they also introduced a culture of violence towards wildlife, using firearms in their destruction. Then came the roads into the hill country, their construction well described by Karunaratne in his work on “Udawattekele”: “As the years went by many more roads were opened up in the hill country, often passing through former royal sequestered forests, with the advent of the coffee industry more and more acres of virgin jungle clothing the mountainsides disappeared before the planters’ axe” (Karunaratne 1986).

So the Asian concept of conservation through sustainable use of natural resources disappeared, at least in this country, through the ignorance or greed of the colonial rulers. When the need for conservation became necessary to the British, they returned with a draconian culture of controls, laws, and punishments destroying for all time people’s participation in protecting the land. To this day, even after 50 years of independence, rural people cannot comprehend

the change. It was left to the curator of the Royal Botanic Gardens at Kew, Dr. J. Hooker, to draw the attention of the then governor to the senseless destruction of forests in Ceylon. It was this observation that led the British administration to formulate a Forest Act in 1885 and a Forest Department in 1887, to slow down the overexploitation.

Even this noteworthy step did not do much good for wilderness protection, because the act only regulated forestry activities that brought more revenue to the government. There was no mention of forests as being ecologically important to agriculture or soil and water conservation. As was customary, wildlife came under the purview of the Forest Department. But in those early days the Forest Act paid scant respect to the animals, their protection, or their needs. Having ransacked the hill country and driven its fauna into the inhospitable dry thorn scrub and monsoon forests of the lowlands, some energetic British marksmen banded themselves together and formed the Ceylon Game Protection Society in 1894. Even though their intentions may not have been altogether altruistic, the society did agitate for the introduction of laws to protect their targets (“game”) such as elephant, buffalo, deer, leopard, and bear. The efforts resulted in the first piece of legislation to protect “game” in “game sanctuaries” through the Game Protection Ordinance of 1909.

Much to the chagrin of the Forest Department hierarchy, the government entrusted the task of administering the ordinance to the self-same society. This was perhaps the first time that wildlife was privatized! Sri Lanka’s first warden of wildlife, Mr. C. W. Nicholas, in his first Administration Report for 1951, traces the history of wildlife conservation in a few concise paragraphs. He states that after the Great War of 1914–1918 “cheap, single-barrel breech loading shotguns were imported [into Sri

By appreciating the politician’s viewpoint I was able to make him or her see the animals’ viewpoint, so to speak.

Lanka] in large numbers, motor car headlights and electric torches began to be used to facilitate the shooting of animals on and off the roads at night, and the slaughter of wildlife reached such proportions that an Ordinance to amend the Game Protection Ordinance was introduced in the Legislative Council in 1926” (Nicholas 1951).

A new era for wildlife dawned after 1930 when Sri Lanka adopted the new Donoughmore Constitution that allowed local members of the state council to hold cabinet portfolios. It was our good fortune, too, that nature conservation (forests and wildlife) came under the minister for agriculture and lands, no less a person than Mr. D. S. Senanayake who became independent Sri Lanka’s first prime minister. An epochal change occurred when the Game Protection Ordinance was replaced by the Fauna and Flora Protection Ordinance on March 1, 1938. On that same day Sri Lanka’s first two national parks came into existence, namely Yala and Wilpattu.

Conservation in Independent Sri Lanka

Although we only gained independence in 1948, Britain appeared to be losing its grip on colonies such as India and Ceylon (Sri Lanka) long before that, as it was fighting a world war. This enabled the more enlightened citizens, backed by the Game and Fauna Protection Society, to press for more reserves and also to give autonomy to wildlife protection. The latter was achieved in part with the creation of a post of deputy warden to be in charge of wildlife protection, though still under the Forest Department. The conservator of forests was de facto warden of wildlife.

This status quo continued until October 1, 1949 when autonomy came at last and a new department was instituted. The first full-time warden took office on December 1, 1950.

The new ordinance also saw the genesis of a number of categories of protected areas. There were two principal ones—sanctuaries, which gave total protection to wildlife, yet allowed human activity because the land was not necessarily state land, and national reserves, which were on entirely state-owned land. The national reserves were subdivided into strict natural reserves, national parks, and intermediate zones.

The breakaway from the “big brother” (Forest Department) so soon after Independence proved to be a giant step for the future of wildlife and wilderness protection. We were also unique among Asian countries in so doing, and the following benefits accrued:

- Better protection for the indigenous fauna, which until then foresters derisively referred to as “vermin”
- Better protection for the forest (jungle) itself, for there was no question of timber extraction and other forms of exploitation. The wildlife department became the sole “owners” of its territories.
- More opportunities for scientific research and education
- Public access for aesthetic and emotional interaction with wild places and their inhabitants, which proved to be essential to resist political pressure on land from such reserves

Strict natural reserves were for the protection of specific animals and plants and for research about them. No person other than the genuine researcher was allowed into their hallowed portals. Core

areas of the Wilpattu and Yala National Reserves were declared strict natural reserves for the benefit of fauna, while Ritigala, a unique mountain massif in the middle of the dry zone, and Hakgala at 6,500 feet, clothed in montane forest, were so-declared to protect a unique flora. National parks are similar in Sri Lanka to elsewhere.

Intermediate zones, ostensibly buffers between national parks and village forests, were open only to the so-called sportsmen. Had they been classified as buffer zones in which no shooting was permitted they may have survived by serving a better purpose. It was not until the late 1950s and 1960s that the department formulated a conservation policy. Field surveys, research, and scientific methods gathered momentum and resulted in the creation of more specialized national reserves. The most significant of these was the "Jungle corridor" (or "link forest") as national reserves. This provided a scientific approach to solve, or at least mitigate, the fragmentation of habitats, especially those of elephants. In the 1964 amendments to the ordinance, jungle corridors entered the statute book as did nature reserves. The first nature reserve was the 6,500-foot-high Horton Plains, a wilderness par excellence. (Today it has been elevated to the status of a national park, but much of it is accessible only on foot.)

During my 40 years of service to wildlife and wilderness (13 of them as director of wildlife conservation), I had to shed my bureaucratic mantle when dealing with politicians and try to understand their anxieties. This is where my village background held me in good stead. By appreciating the politician's viewpoint I was able to make him or her see the animals' viewpoint, so to speak. I was accused of being parochial, but I can say

as an "elder" conservationist that unless one has a passion for the wilderness and the wildlife in it and considers the national reserves as being sacred, one has very little reason to care for them!

So it was that we have been able not only to save the wilderness areas entrusted to the department but also to add considerably to them. The recognition of jungle corridors and subsequently of buffer zones and refuges has increased wildlife habitats from 10% of the country's forest cover in 1950 to 12% today. This constitutes 50% of total forest cover in the country, a fact of which the Forest Department is somewhat envious. Today the department looks after a total of 70 protected areas covering an area of some 830,715 acres. In addition, the Forest Department also takes care of 73 protected areas with a total of 161,853 acres. Sri Lanka today has a National Heritage and Wilderness Act by which those listed therein are inviolate. This act passed in Parliament in 1987 is of great relevance today.

What of the Future?

There must be a paradigm shift in our approach to conservation. The shift is really a choice between forging a partnership with the people whose lives are most affected by wildlife—whether it be conflict or cooperation—or to perpetuate the fallacious thinking that humans are superior to all beings and continue with senseless humanmade confrontation with animals. I have shown that Sri Lanka is an agricultural country and that the conservation practices, which enabled the smooth transition from ecosystem to agrosystem, were absolutely correct. The pseudoscientific attitude toward problems caused by conservation methods originating in industrialized countries will never solve our problems.

Laws, controls, and a police officer's attitude widen the gap between stakeholder and administrator. Often, much of the land in reserves was actually wrested from the villagers' forebears by a single stroke of a colonial pen. Small wonder then that we cannot expect or persuade "community participation" from people so wronged. When I introduced the concept of buffer zones in the late 1970s, I had in mind allowing villagers the use of such reservations for grazing their cattle, collecting firewood, and raising timber. By that process I would expect them to have a sense of "belonging" and of participation. Alas, this process was aborted, but I hope the department will try again.

We are today in the information age. The kind of information I would like to see is communication between politician, policy maker, conservationist, administrator, and scientist. Unfortunately, today the latter two are losing their credibility—the administrator through a lack of conviction and the scientist in whose presence the policy maker becomes defiant or suspicious. We have to remove such barriers and learn to speak to each other person to person for the good of wildlife and the wilderness. That will be the correct path to tread in the future. May that day soon dawn. **IJW**

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The Wilderness Leadership School of South Africa's Imbewu and Opinion Leader Programmes

BY ANDREW MUIR

The Wilderness Leadership School Trust (WLST) was founded as an environmental education trust in 1963 by conservationist Dr. Ian Player and the game guard who inspired him, Magqubu Ntombela. The aim of the WLST is best summed up in its mission statement, which reads: "We strive to restore a balanced relationship between humanity and nature by providing a direct experience of wilderness especially for the leaders who shape society."

The Wilderness Leadership School of South Africa (WLS) takes small groups of up to eight participants at a time on five-day wilderness trails throughout South Africa. Since 1963 more than 35,000 people have participated on these courses. As outlined in our mission statement, leaders who shape society are our primary target market, including youth (potential leaders) and current leaders.

Legal wilderness protection in South Africa has gained momentum over the past two decades, and there are now designated wilderness areas within many protected areas, notably the Kruger National Park, Drakensberg, Zululand, and Cape reserves.

But a great sadness is that far more western tourists have been stirred by these wilderness areas and wild lands than local black South Africans. The reason for this is that under the previous white nationalist government black people were excluded and denied access to public nature reserves, picnic areas, and hiking trails. For many black people our protected areas and reserves are often reminders of past discrimination and, in some quarters, are hated symbols of painful forced relocations.

Even in the new South Africa, experiences in nature reserves are beyond the economic reach of most South

Africans. Yet the development of an environmental awareness is largely dependent on the exposure young people have to first-hand experiences in natural environments. It is therefore imperative for the future protection and well-being of our few remaining wilderness and wild lands that young people are exposed to these areas to gain an understanding of their importance. It is with this as a background that the WLS launched its Imbewu and Opinion Leader programmes.



Article author Andrew Muir.

Imbewu—The Seed

Imbewu is an African initiative and literally translated means "seed." Imbewu is a four-day, entry-point wilderness experience operated as a joint venture between the South African National Parks Board (SANPB) and the WLS. Imbewu enables South African youth, particularly those from disadvantaged communities, to reclaim their birthright to a quality experience of their game reserves. The centerpiece of South African wildlife reserves—the 2-million-acre Kruger National Park—was selected to host the pilot Imbewu programme.

One of the unique aspects of Imbewu is that retired black game guards are selected and trained as the Imbewu teachers. These former employees of the SANPB have an average

For many black people our protected areas and reserves are often reminders of past discrimination and, in some quarters, are hated symbols of painful, forced relocations.

of 30 years' experience working mainly on foot in game reserves and thus have much outdoor wisdom and knowledge to offer as teachers and guides for this programme. These retired game guards have become cornerstones of the Imbewu programme. Many of these men cannot read or write, but they have traditional knowledge that they share with the youth in home-tongue languages, using the African art of storytelling. Traditional knowledge links our wild lands, trees, animals, and birds to the hearts of our people. The insights of these black conservationists, born to South Africa, have for too long remained unshared.

The primitive Imbewu camps have been designed by the Imbewu teachers using principles of minimum-impact camping, with a focal point being the campfire. Over four days these "wise men" mesmerize 16 young people, drawn mainly from communities surrounding the parks and from urban townships, with stories around the night fire. During the day the youth are taken into the wilderness areas on daylong interpretative walks. In many ways Imbewu is a rite of passage, a cultural experience for young South Africans struggling to find their heritage and their rightful place in society.

More than a thousand youth completed the Imbewu pilot programme in its first 14 months during 1997 and 1998, and it is obvious that Imbewu impacted them at a deep emotional level. Our observations suggest that the wilderness experience is irreplaceable and inspirational to their human spirit. Imbewu features environmental educa-

tion as an empowerment process based on our need to root conservation in an African context. We plan on expanding this programme to as many other parks as possible, eventually enabling thousands of young people to experience their heritage in this way.

Opinion Leader Wilderness Programme

The Opinion Leader Wilderness programme (OLW), initiated by the WLS and funded by the European Union, brings together Members of Parliament (MP) and other key community and environmental leaders on four-day wilderness trails (treks). This is a quality, natural experience that facilitates a cross-pollination of ideas, discussion of issues, and networking amongst elected and grassroots opinion leaders. It is an important catalyst for the emergence of environmental consciousness and environmental initiatives.

The WLS has now taken more than twenty OLW programmes into wilderness areas throughout South Africa. More than 130 community and political leaders have already participated through mid-1998, 50 of them national and regional Members of Parliament (MPs). We believe this program is unique to South Africa, but we hope that it is copied by other nations.

Participants in the OLW programme have consistently commented on how being in a natural environment "on the trail" created a time period for much-needed debate in an appropriate environment. In her trail report Judy Chalmers, an MP in the National

Assembly, stated that "The debate was made more real, more urgent, more relevant because we sat in surroundings we could not ignore." Senator Lubidla, another MP, stated in his trail report that "We never actually appreciated the environment, and now that we have experienced it we have learned how vital it is."

Many of the participants, including the MPs, had never experienced a nature reserve or protected natural area prior to participating on these trails. Some of the participants initially expressed a negative attitude toward formal conservation. They saw "brown environmental issues," such as waste, water, and air pollution, as separate and unrelated concepts. Our observations support the belief that, after participating in the OLW programme, many of these negative perceptions had become positive perceptions. For example, as a direct result of the OLW trail programme the National Parliament Environmental Committee chairs formed the Environmental Consultation Forum, which is a training workshop for parliamentarians around South Africa who sit on one of the 11 committees having an environmental portfolio among their duties. At their request the WLS coordinates and organizes each workshop. The forum is designed to increase the environmental knowledge and understanding of its MP participants. Training topics have included parks and people, environmental impact assessments, and the role of parliamentarians in environmental issues. To date, three-day workshops have taken place in the Houses of Parliament in January 1998 and at the South African Wildlife College outside of Hoedspruit in May 1998. Forty-five regional and national parliamentarians participated in each workshop, thereby providing environmental education to leaders

whose decisions will impact the environment.

Conclusion

Over the past 300 years, through policies of colonization and apartheid, many South Africans have experienced a spiritual alienation from their land. Experiential education in wilderness provides the opportunity to rekindle

a bond with the land. The Imbewu and OLW programmes incorporate spiritual, educational, cultural, and ritual experiences into an environmental education experience on the land—on a wilderness trail. These programmes demonstrate the real value, benefits, and importance of wilderness areas in a developing country. **IJW**

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EXTRA

News from the Aldo Leopold Wilderness Research Institute Wildlife and Wilderness

For many people, watching and searching for signs of wildlife contributes to the value of their wilderness experience. Hiking a wilderness trail imagining that a grizzly bear awaits at every turn, hearing the first birds sing in the spring, and searching the forest understory for snakes and salamanders are heart-filling experiences for many wilderness visitors. Wildlife species contribute to the functioning of wilderness ecosystems through actions such as seed dispersal, germination, and fertilization. In addition, the presence of wildlife is often used as a barometer of wildness contained by individual wilderness areas. Many wildlife species could not persist in the face of human development without broad expanses of wilderness, and if wilderness areas are too small, species such as the wolf, grizzly, and wolverine disappear from the landscape.

Wildlife management in wilderness is one of the more complex and controversial aspects of overall wilderness administration for a variety of reasons: Wildlife species often are hard to see, their requirements for survival are complex, they can be disturbed by recreational activities, they move across wilderness boundaries, and they are still only one aspect of wilderness management. Ecologists at the Leopold Institute investigate a variety of wildlife-related questions, including what constitutes "natural" wildlife habitat, how wildlife species are affected by recreation, and how managers can monitor the effects of human

actions on wildlife populations. Peter Landres also has been investigating sources of cooperation and conflict between federal wilderness managers and state wildlife managers in Arizona and California, USA.

To address the adequacy of wilderness for wildlife conservation, Vita Wright chaired a session on this topic at The Wildlife Society Northwest Section Meeting, March 12, 1999 in Bozeman, Montana, USA. Presentations addressed the types of habitats currently not represented by wilderness, threats to wildlife within wilderness, boundary issues, and differing governmental policies related to managing wildlife and wilderness. Abstracts from this session can be viewed on the Leopold Institute's webpage: <http://www.wilderness.net/leopold>, on the Announcements and Conferences page.

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Announcements & Wilderness Calendar

- The Wilderness, Energy, and Global Warming Crisis
- Timber Sales Halted in Southeast
- Maine Forest Lands Protected
- Migratory Bird Initiative Launched
- New Italian Wilderness Proclaimed
- Italian Mountain Wilderness Activities
- WildAlert E-mail Action Network

The Wilderness, Energy, and Global Warming Crisis

The Intergovernmental Panel on Climate Change (IPCC) has found overwhelming evidence that increased greenhouse gas concentrations are changing the Earth's climate. Atmospheric carbon dioxide levels are higher than they have been at any time during the past 160,000 years. Meanwhile, global temperatures are rising. The 1990s will be the hottest decade on record. A recent National Science Foundation study determined that 1998 was hotter than "any other year back to 1400, (at) roughly a 99.7% level of certainty." Accelerating destruction of forests, which act as reservoirs of carbon, is also contributing to the warming of the Earth. The burning and logging of forest ecosystems is responsible for approximately 20% of total global carbon dioxide emissions.

Habitats already severely fragmented by human development will be further damaged or destroyed as the Earth warms. Many species have quite narrow temperature niches within which their growth and reproduction are favored. When forced to migrate toward conditions that match their temperature and rainfall needs, they will encounter humanmade barriers that will be difficult or impossible to overcome. As vulnerable species are displaced, the broken links in the food chain will impact the entire biological community. The geological record shows that in past eras, massive extinctions have accompanied rapid climate change.

During the twenty-first century it is predicted that one-third or more of the world's forests will be substantially impacted by the changing climate. Global warming is already

affecting ecosystems. In the Alps, plant species are migrating to higher elevations. In the Northern Hemisphere, spring arrives a week earlier than it did 20 years ago. In Alaska, melting permafrost and a vast infestation of spruce bark beetles have wiped out thousands of acres of Alaska's boreal forests.

For more information contact Peter Drekmeier, Earth Day Network/Earth Day 2000, E-mail: pdrekmeier@earthday.net (Excerpted from WildAlert, 3/12/98.)

Timber Sales Halted in Southeast

The 11th Federal Circuit Court of Appeals in Atlanta has stopped seven national forest timber sales in the southern Appalachians because the U.S. Forest Service failed to collect and evaluate data regarding logging impacts on species classified as rare or sensitive to forest disturbances—a violation of the National Forest Management Act. This decision, handed down in response to a lawsuit brought by the Sierra Club, The Wilderness Society, Georgia Forest Watch, and other groups, could have significance for poorly prepared timber sales nationwide. For more information: <http://www.wilderness.org/cc/southeast/timberhalt.htm>. (Excerpted from WildAlert, 3/12/98)

Maine Forest Lands Protected

Last March in Augusta, Maine, the Pingree family announced its intention to sell the development rights to 754,673 acres of northern Maine forest land—approximately 80% of their land—to the New England Forestry Foundation (NEFF) for U.S. \$28 million. The largest forestry conservation easement

project of its kind, the deal prohibits all structural development and promotes sustainable forest management.

"This is a landmark day for anyone who cherishes the great forests of this region," said Bob Perschel, northeast regional director for The Wilderness Society and chairman of the 35-group Northern Forest Alliance. "The future of this area depends on our ability to piece together a network of wild and managed forests that can sustain the health and productivity of the land while promoting the economies of local communities. This is a huge and magnanimous gesture to the people of Maine and to people everywhere who care about the Northern Forest." This announcement is the latest in a string of unprecedented land protection transactions across the region. For the full story, go to <http://www.wilderness.org/newsroom/mainedeal.htm>. (Excerpted from WildAlert, 3/18/99.)

Migratory Bird Initiative Launched

The caribou are one of the more visible animals that use the Arctic coastal plain, but the area is also remarkable for its migratory birds. More than 125 species—millions of birds—use the coastal plain to breed, nest, or stage. These birds are migratory, traveling thousands of miles to winter in the United States, South America, even as far away as Russia and China. The Wilderness Society has launched an initiative to help people understand the connection between migrating species you may see in nearby refuges—even your own backyards—and the remote and spectacular Arctic

National Wildlife Refuge. Called From Alaska to Our Backyards, the initiative is teaching children and adults about the many species that use the coastal plain. Visit their website to learn more at: <http://www.wilderness.org/backyard>. (Excerpted from WildAlert, 3/25/99.)

New Italian Wilderness Proclaimed

In follow up to *IJW's* report in vol. 1, no. 2, the Wilderness Associazione Italiana reports that 16 wilderness areas have now been proclaimed in Italy. The most recent, of more than 4,000 hectares (9,600 acres) of mountainous chaparral habitat was designated on February 25 by a municipality in the mountains south of Rome.

Also, three wilderness areas in the Po River Delta, the largest of which is 5,300 hectares (12,700 acres) include more than 20 kilometers (34 miles) of marine front and 15 kilometers (25.5 miles) of river. While these areas are not "pristine" in the manner of North American, Australian, or New Zealand wilderness, it is a valuable step in a landscape long used by human beings. For more information, contact Franco Zunino, Wilderness Associazione Italiana, Via Bonetti 42 (Borgata Piano)-17010 Murialdo (SV) ITALY. Telephone/Fax: (011 + 39) 019-53545.

Italian Mountain Wilderness Activities

Mountain Wilderness was founded in Italy in 1987 under the auspices of the Italian Academic Alpine Club and the Sella Foundation. It has spread to eight European countries and has members

in the United States. Mountain Wilderness carries out environmental mountaineering activities, training programs for guides, clean-up campaigns (e.g. on K-2). Sergio Kociancich is the executive officer of the international organization: via Nepi 13, 00191 Roma, ITALY. Fax: 39 063 33 66 40. Another contact is Barbara Ehringhaus of Mountain Wilderness Switzerland (e-mail: ehringhaus@swissonline.ch). Barbara is also president of CIAPM, the International Committee of Associations for the Protection of Mont Blanc.

WildAlert Email Action Network

Several of the Wilderness Digest briefs for this issue were excerpted from WildAlert. WildAlert is an E-mail action alert system brought to you by The Wilderness Society. Their goal is to keep you apprised of threats to our wildlands—in the field and in Washington, D.C. WildAlert messages include updates along with clear, concise actions you can take to protect America's last wild places. You are welcome to forward WildAlerts to all those interested in saving America's wildlands.

To subscribe to WildAlert, send the following message to majordomo@wilderness.org: "subscribe wilderness-alert" (without quotes).

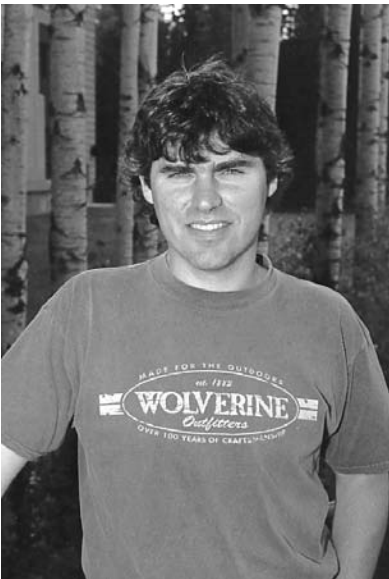
The Wilderness Society, founded in 1935, is a nonprofit conservation organization working to save the last of America's wildlands through advocacy, research, and education. To take action on behalf of wildlands today, visit our website at <http://www.wilderness.org>.

Book Reviews

BY JOHN SHULTIS, BOOK REVIEW EDITOR (shultis@unbc.edu)

Wilderness by Design: Landscape Architecture & the National Park Service by Ethan Carr. 1998. University of Nebraska Press, Lincoln and London. 378 pp., \$45.00 (hardcover), USA.

Building the National Parks: Historic Landscape Design and Construction by Linda Flint McClelland. 1998. Johns Hopkins University Press, Baltimore and London. 656 pp., \$65.00 (hardcover), \$29.95 (paperback), USA.



Book review editor John Shultis.

After a relative famine, a feast: in 1998, two books appeared that focused on the early history of the philosophy and practice of landscape design in the U.S. national park system. The books noted above are richly detailed narratives that concentrate on what both authors suggest is the “golden age” of landscape design in American national parks: the period from 1916, when the USDI National Park Service was legislated into existence, until 1942, when recreation planning was temporarily abandoned with the entry of

the United States into World War II.

At least three related stories converge in Ethan Carr's *Wilderness by Design*. The primary story relates the importance of early landscape parks and the emerging profession of landscape architecture on the appearance and design of the national parks. Neatly integrated with this story is a history of landscape architecture in the United States, particularly the influence of the so-called Fairsted School headed by Frederick Law Olmstead, and the parallel evolution of this profession with the landscape planning process of the National Park Service. Finally, Carr details how the precarious political support of early national parks necessitated park development that would maximize the num-

ber of visitors to the parks. Incorporated within this idea is the overriding importance of the automobile and road systems in park development. For example, without the passing of the Federal Aid to Highways legislation in 1916 (the same year the National Parks Act was passed), it seems unlikely many western national parks would have been created and “developed”.

Perhaps the most important message of Carr's book is from yet another secondary strand. *Wilderness by Design* reminds us that even though the public still equates the national parks and, to a lesser extent, other protected areas with primordial, untouched wilderness, the reality is considerably different. Not only is the conception of the national park a cultural construct, but the very appearance and design of national parks is based on social conventions (e.g., aesthetic and political ideologies) that allow “land” to become “landscape”:

The designed landscapes in national and state parks, as works of art, directly express the value society invests in preserving and appreciating natural areas. Few other arts, with the exception of landscape painting, more fully explore this leitmotif of American culture. Neither pure wilderness nor mere artifact, the national park is the purest manifestation of the peculiar American genius which sought to reconcile a people obsessed with progress with the unmatched price paid for that advance: the near total loss of the North American wilderness (p. 9).

These ideas are not novel, having been previously articulated by such authors as Roderick Nash, Max Oelschlaeger, and William Cronon. What makes this book so valuable is the level of detail provided, the manner in which all of these

strands are brought together, and how Carr repeatedly, though gently, forces us to reconsider how each of these and other related social movements shaped the contemporary conception of the national park. This level of synthesis is generally lacking in McClelland's work.

It is intriguing that the development of scenic corridors, buildings, and even complete villages in national and state parks owed their existence to the dual mandate of the early parks: preservation and use. As Carr and McClelland note, the sometimes extensive development was concentrated in limited areas of the parks in order to keep other areas as wilderness or "research" areas. These paradoxical and competing land uses created a unique type of landscape, one that was closely associated with the earlier concept of urban landscape parks. Nonetheless, both authors make it clear that recreational development was the primary purpose of park creation and design: the maximization of park visitation was seen as paramount to public and political support of parks. It was held that only by increasing the number of visitors to the parks could the future of the national park systems be secured.

Both books have a similar structure. Carr's *Wilderness by Design* is divided into two parts and six chapters. Part one (chapters 1 and 2) provide the historical context behind park planning in the National Park Service. The importance of picturesque theory and landscape park design in the planning of early national parks are highlighted in these chapters. Again, while other authors have noted these links, Carr's historical analysis provides the most detailed and illuminating description of the critical relationship between the ideology of landscape park design and the development of the national park ideal. In Part one of *Building the National Parks* (Chapters 1 through 3),

McClelland's introductory/historical section places far less emphasis on the early European (primarily British) landscape designers' influence on American park design, and provides a broader, if not always deeper, discussion on early American landscape design. She suggests that the American styles differed from the earlier British style in that it was more naturalistic, preferring to preserve the natural character of the area. McClelland includes an interesting analysis of the influence of indigenous American movements such as the Prairie Style, California Style, Arts and Crafts Movement, and Shingle Style forms of architecture/design on national park design.

Part two (chapters 3 through 6) of Carr's book uses a case study approach to discuss the evolution of both the nascent landscape architecture profession and park planning in the National Park Service from 1920 to the 1940s. Each chapter in this section highlights the range of design and construction activity undertaken in the national parks. Chapter 3 provides the internal rationale provided by Mather, Albright, Hull, and Vint, among others, for the creation of the Grand Canyon Village beginning in the 1920s and identifies how this process reflected the emerging urban planning movement. Chapter 4 identifies the decisions that led to the creation of the Going to the Sun Road in Glacier National Park (completed in 1928) through a landscape engineering perspective. Chapter 5 uses the example of development in Mount Rainier National Park during the 1930s to document how regional planning and "master planning" were used to develop this park. Finally, in chapter 6, the creation of the Civilian Conservation Corps (CCC) is used to indicate how planning in the National Park Service had become national recreational planning by the 1930s. The concluding chapter briefly

describes the Blue Ridge Parkway to help review the findings of the book and to illustrate how park planning not only evolved, but had gone full circle: the same philosophies and ideologies that created curving carriageways and parkways in the 1800s for urban parks such as Central Park in New York City had now been expanded to create regional parkways for the National Park Service.

In part two of McClelland's book (chapters 4 and 5), the policy and process of national park design from 1916 to 1927 are covered. Unlike Carr, McClelland does not use a case study approach. Instead, she incorporates a number of construction projects and focuses on the visions of people such as Mather, Albright, Vint, Hull and Charles Punchard (the first landscape engineer) and the early policies published by the National Park Service to discuss the underlying principles of park design at this time. Part three (chapters 6 through 8) focuses on describing the impact of Vint and the Western Field Office from 1927 to 1932. Chapters 6 and 7 provide a useful description of the design principles and practices of a large number of specific facilities (e.g., bridges, guardrails, culverts, tunnels, roads, road banks, trails, and campgrounds) that is lacking from Carr's analysis.

In her final section (part four, chapters 9 through 12), McClelland discusses the critical role that the National Park Service's role in the emergency conservation work performed by the CCC and its role in the creation and design of state parks throughout the United States. The importance of the work performed by the CCC is difficult to overestimate. Both Carr and McClelland note that Mather's decision to create park development plans for all national parks turned out extremely well for the National Park Service: as they had numerous plans for park construction in

hand when the emergency work program was announced in 1933, Mather was able to access hundreds of millions of dollars and hundreds of thousands of workers to help create his vision for the national and state parks. Indeed, it is likely that many recreation facilities would not have been built without the funds provided by the emergency work programs. It is also unlikely that the National Park Service could have employed so many experienced landscape architects without the massive unemployment generated by the depression. The employment of these skilled and experienced workers allowed the principles of park design to be invoked at each construction site.

Down

by Sarah Johnson

Beneath cloud-clotted sky,
sky dumped off the world's sagging roof,
slab-grey sky with frazzled seams
worried by sunlight
pricking here, prodding there,

rocks like patient cactus
rooted to the underworld
probe deep subsoil damp
with fingers plunged to the bristle
into holes that tap the gluey aquifer,

holes to a home unknowable,
fitfully dreamed, scribbled on maps,
hothouse for sinuous minerals where
pale worms of light-sick growth
shepherd flocks of pock—

bed of one world,
vault above another
whose silence breaks only with
hush, hush, hush expressed
in flights of boiling air.

McClelland's final chapter provides a more thorough discussion of post-1940 events on the principles and practices of national park design than Carr's. The alteration of design principles from a rustic to a modern style incorporated in development created by "Mission 66" and the negative reactions to this shift are covered in chapter 12 of *Building the National Parks* and serve a useful purpose in assessing the loss of the naturalistic design principles of the 1920s and 1930s on the National Park Service.

Both of these titles are required reading for those interested in the history of park design principles and practice, but of course each have their own strengths and weaknesses. To me, Carr's writing—particularly in the first half of the book—seems to be somewhat more lyrical than McClelland's, whose writing is a bit more business-like. Carr also attempts and succeeds in looking beyond the policies of the National Park Service to the personalities of the people that created the policies. For example, Carr's discussion of Vint's conflict of interest in working within a private practice while being employed by the National Park Service is very revealing.

While both works are well researched, I have to give the edge in scholarship to Carr's book. By accessing more sources external to government reports and associated publications, Carr ties together all the related social movements and design concepts into a seamless whole. At first glance, *Wilderness by Design* seems to simply address landscape design and architecture in the National Park Service from the 1920s to the 1940s. In reality, it incorporates much more than that. It provides a meticulous scholarly discussion of the profession of

landscape architecture in the National Park Service, the early ideologies that drove the initial development of national parks, the influence of the preservation movement, and, ultimately, the evolution of the national parks system. McClelland hints at these relationships, but to a far lesser extent.

One disappointment is Carr's lack of pictures and illustrations on facilities located in the national and state parks systems. McClelland provides a list of figures that includes approximately 125 pictures of facilities created in the 1920s and 1930s, and these photographs are essential to appreciating the principles and appearance of the rustic style. Carr does not provide a list of figures and only includes approximately 50 figures in his work, although several series of photographs provided at the end of several chapters are useful additions. Given the topic covered, the dearth of figures in Carr's book is disappointing.

For those intimately associated with or interested in park design, both books are required reading. Together, it is hard to imagine that any book published in the near future could match the quality and quantity of information they provide on this topic. For generalists and interested amateurs, if only one book can be read or bought, I would recommend *Wilderness by Design* most strongly. Carr's attention to detail, his incorporation of the British influence on park design in the United States, his analysis of the critical importance of urban park design on national parks, his reflection of how changes in the profession of landscape architecture mirrored those in the National Park Service, and his ability to synthesize various historical trends makes this the seminal book on this fascinating topic. **IJW**