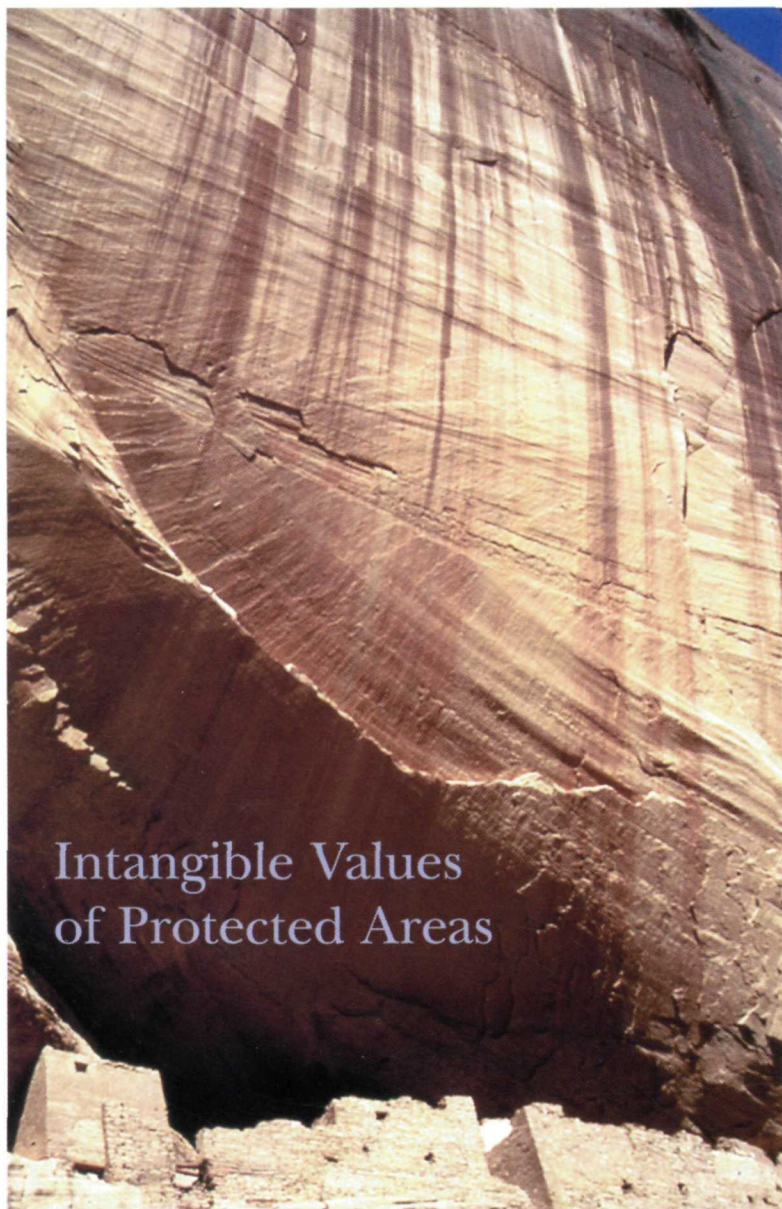


The George Wright
FORUM
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Intangible Values
of Protected Areas



Origins

Founded in 1980, the George Wright Society is organized for the purposes of promoting the application of knowledge, fostering communication, improving resource management, and providing information to improve public understanding and appreciation of the basic purposes of natural and cultural parks and equivalent reserves. The Society is dedicated to the protection, preservation, and management of cultural and natural parks and reserves through research and education.

Mission

The George Wright Society advances the scientific and heritage values of parks and protected areas. The Society promotes professional research and resource stewardship across natural and cultural disciplines, provides avenues of communication, and encourage public policies that embrace these values.

Our Goal

The Society strives to be the premier organization connecting people, places, knowledge, and ideas to foster excellence in natural and cultural resource management, research, protection, and interpretation in parks and equivalent reserves.

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On the cover: the soaring walls of Canyon de Chelly National Monument (USA) symbolize several intangible values: aesthetic beauty, scientific interest, and cultural meaning. *Photo courtesy of Eduardo Crespo de Nogueira*

Society News, Notes & Mail

Call for Papers: GWS 2005 Conference

The next George Wright Society Conference will be held at the Loews Philadelphia Hotel March 14–18, 2005. By the time you receive this issue of the FORUM, the Call for Papers will just be coming out via e-mail. All GWS members for whom we have e-mail addresses will get the CFP automatically. If you are not a member, or if you otherwise missed the CFP, send a note to info@georgewright.org and we'll get one to you right away. The deadline for receipt of abstracts is October 1—earlier than in years past, so please mark your calendar!

2003 Conference Proceedings Published

Protecting Our Diverse Heritage: The Role of Parks, Protected Areas, and Cultural Sites, the proceedings volume from the 2003 GWS / National Park Service joint conference, was published in March. Ninety-six papers are included, covering a wide range of topics. The book (427 pp.) is available as a paperback (\$26.00; \$19.50 for GWS members) or on CD (\$10.00 / \$7.50) postpaid to U.S. and Canadian addresses (additional shipping elsewhere). To order, go to www.georgewright.org and follow the links from the right-hand column.

Complete Library of *The George Wright Forum* Now Available on CD

Now you can have a comprehensive collection of *The George Wright Forum* that will take up only about two inches on your bookshelf. The entire backlist of the *Forum*—every issue from its inception in 1981 through 2003—is now available as a set of four CDs. You get high-quality PDF versions that are suitable for on-screen viewing or printing. We are selling these sets at a special introductory price of \$20.00 (\$15.00 for GWS members). A limited number of sets are available at this cost; when these are gone, the price will go up. To order, go to www.georgewright.org and follow the links from the right-hand column.

Ocean Park Conservation on the Rise

Not since the 1960s, when the Stratton Commission examined ocean policy, have Americans focused so clearly on ocean conservation and governance. Last June, a Pew Foundation-funded commission lead by Leon Panetta and David Rockefeller reported the results of a two-year study of ocean conditions (www.pewoceans.org). This April, a congressionally chartered U. S. Ocean Commission led by retired navy Admiral James D. Watkins did the same (www.oceancommission.gov). Both commissions expressed concern for depleted ocean resources and recommended changes in federal activities. In 2001, the National Park System Advisory Board encouraged the National Park Service to play a leadership role in ocean conservation, noting that, “If human stewardship has been lax on land, it has been even worse in the sea” (www.nps.gov/policy/futurereport.htm). In response to these notices of concern over ocean resources, the National Park Service developed a strategy to improve conservation in the 72 ocean parks, and established a task force of superintendents and national pro-

gram managers to implement the strategy. The framework for this strategy was developed in a series of four sessions at the 2003 George Wright Society Conference in San Diego, California.

New and Noteworthy

- **NPS partnership with USGS on the national map.** The National Park Service is developing a geodatabase application to roll up geospatial data from the NPS base cartography inventory. The geodatabase will utilize a data model that is compatible with the U.S. Geological Survey national map. A major initiative of the USGS, the national map promotes a consistent framework for geographic knowledge. A draft concept paper and initial data layer standards documents are available for review at www.nps.gov/gis/data_info/standards.html under the National Map Data Architecture heading.
- **Pitcaithley, Shull contribute to book on public history and the environment.** GWS President Dwight T. Pitcaithley and the keeper of the National Register, Carol Shull, were recent contributors to a new publication by Krieger Publishing Company, *Public History and the Environment*, edited by Martin Melosi and Philip Scarpino. Their chapter, titled “Melding the Environment and Public History: The Evolution and Maturation of the National Park Service,” argues that the National Park Service is a very different agency from the one created in 1916. It has evolved, especially over the last fifteen years, into an agency that has a far more sophisticated understanding of the environment and of the role historic places play in contemporary society. The National Park Service’s more expansive management of historic places, a more inclusive vision of the National Register of Historic Places and the National Historic Landmark Program, and a re-configuring of the National Park System by Congress, all have combined to create a system of parks and a management structure that could not have been imagined by Stephen T. Mather. For more info, go to www.krieger-publishing.com/html/publicstack_11.html.
- **New suite of biodiversity tools.** NPS has released a new set of biodiversity tools and web sites, including NPSpecies, the biodiversity data store, species-new-to-science web pages, and nature guides. More info: <http://nature.nps.gov/ScienceResearch/Biodiversity>.
- **Research Links covers ecological history, more.** The new (spring 2004) issue of Parks Canada’s research newsletter features articles on the ecological history of caribou and musk ox on Ellesmere Island; patterns of visitor use in Banff, Kootenay, and Yoho national parks; and using digital cameras to monitor plant biomass at Grasslands National Park. Available in PDF format upon request. For more info, contact the editor, Dianne Dickinson, at Research.Links@pc.gc.ca.

- **New book on the curation of archeological collections.** *Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship*, by S. Terry Childs of the National Park Service's archeology and ethnography program, discusses ethics concerning the stewardship of archeological collections and offers practical articles about their management and care. Articles cover budgeting for curation, the long-term preservation of archival and digital records, access and use of collections, Native American issues, and collection rehabilitation. Info at www.saa.org.
- **"Ethnic and Racial Diversity of National Park System Visitors and Non-Visitors": technical report.** Prepared by the Social Research Laboratory at Northern Arizona University, and based on data from the 2000 NPS Comprehensive Survey of the American Public. Available at www.nature.nps.gov/socialscience/products.htm.
- **"Meeting Challenges with Geologic Maps."** This publication of the American Geological Institute (AGI) shows how information from geologic maps is useful in everyday life. The document presents 16 examples that show how geologic maps are helping to delineate fragile habitat and ecosystems, protect against natural hazards, and find needed resources. Available at www.agiweb.org/pubs/pubdetail.html?item=634601.
- **Report on ozone-sensitive plant species.** The report, from the NPS Air Resources Division (ARD), summarizes the results of a June 2003 workshop in Baltimore, Maryland. At the workshop, a group of ozone effects scientists reviewed, revised, and updated lists of sensitive plant species. Copies of the report can be obtained from ARD (contact Ellen Porter at 303-969-2617) and an electronic version will soon be available at www2.nature.nps.gov/air/pubs. The ARD can also provide lists of park-specific ozone-sensitive species and users of NPSpecies will soon be able to generate lists of sensitive species in real-time.
- **American Birding Association volunteer directory now on-line.** The American Birding Association's (ABA's) volunteer opportunities for birders directory is now available on-line. Each year the ABA gathers and publishes information on bird-related projects in need of volunteers. The directory is published as a service to ABA's 22,000 members, typically very skilled birders, and as a service to the agencies and organizations in need of skilled volunteers to help with bird-related projects. Parks have advertised for volunteers in this directory for years. Review the current directory at www.americanbirding.org/opps/. On-line submissions (free listings) are welcome at any time.



MISSION STATEMENTS

Reading the Earth: From Wonder to Appreciation

Robert Sterling Yard

*Ed. note: An important figure in the early development of the National Park Service, Robert Sterling Yard was hand-picked by Stephen Mather to spearhead publicity for the new national park system. A former editor with several widely read national magazines, Yard was enthusiastic and effective in helping make the national parks into beloved American icons. In this excerpt from the first chapter of *The Book of the National Parks* (1919), Yard extols the benefits of a deeper understanding of natural phenomena as a way to achieve real appreciation of the parks.*



To the average educated American, scenery is a pleasing hodge-podge of mountains, valleys, plains, lakes, and rivers. To him, the glacier-hollowed valley of Yosemite, the stream-scooped abyss of the Grand Canyon, the volcanic gulf of Crater Lake, the bristling granite core of the Rockies, and the ancient ice-carved shales of Glacier National Park all are one—just scenery, magnificent, incomparable, meaningless. As a people we have been content to wonder, not to know; yet with scenery, as with all else, to know is to begin fully to enjoy. Appreciation measures enjoyment. And this brings me to my proposition, namely, that we shall not really enjoy our possession of the grandest scenery in the world until we realize that scenery is the written page of the History of Creation, and until we learn to read that page.

The national parks of America include areas of the noblest and most diversified scenic sublimity easily accessible in the world; nevertheless it is their chiefest glory that they are among the completest expression of the earth's history. The American people is waking rapidly to the magnitude of its scenic possession; it has yet to learn to appreciate it....

"Is it true," a woman asked me at the foot of Yosemite Falls, "that this is the highest unbroken waterfall in the world?"

She was an average tourist, met there by chance. I assured her that such was the fact. I called attention to the apparent deliberation of the

water's fall, a trick of the senses resulting from failure to realize height and distance.

"To think they are the highest in the world!" she mused.

I told her that the soft fingers of water had carved this valley three thousand feet into the solid granite, and that ice had polished its walls, and I estimated for her the ages since the Merced River flowed at the level of the cataract's brink.

"I've seen the tallest building in the world," she replied dreamily, "and the longest railroad, and the largest lake, and the highest monument, and the biggest department store, and now I see the highest waterfall. Just think of

it!"

If one has illusions concerning the average tourist, let him compare the hundreds who gape at the paint pots and geysers of Yellowstone with the dozens who exult in the sublimated glory of the colorful canyon. Or let him listen to the table-talk of a party returned from Crater Lake. Or let him recall the statistical superlatives which made up his friend's last letter from the Grand Canyon.

I am not condemning wonder, which, in its place, is a legitimate and pleasurable emotion. As a condiment to sharpen and accent an abounding sense of beauty it has real and abiding value.

Love of beauty is practically a universal passion. It is that which lures millions into the fields, valleys, woods, and mountains on every holiday, which crowds our ocean lanes and railroads. The fact that few of these rejoicing millions are aware of their own motive, and that, strangely enough, a few even would be ashamed to make the admission if they became aware of it, has nothing to do with the fact. It's a wise man that knows his own motives. The fact that still fewer, whether aware or not of the reason of their happiness, are capable of making the least expression of it, also has nothing to do with the fact. The tourist woman whom I met at the foot of Yosemite Falls may have felt secretly suffocated by the filmy grandeur of the incomparable spectacle, notwithstanding that she was conscious of no higher emotion than the cheap wonder of a superlative. The Grand Canyon is the stillest crowded place I know. I've stood among a hundred people on a precipice and heard the whirl of a bird's wings in the abyss.

Probably the majority of those silent gazers were suffering something akin to pain at their inability to give vent to the emotions bursting within them.

I believe that the statement can not be successfully challenged that, as a people, our enjoyment of scenery is almost wholly emotional. Love of beauty spiced by wonder is the equipment for enjoyment of the average intelligent traveller of to-day. Now add to this a more or less equal part of the intellectual pleasure of comprehension and you have the equipment of the average intelligent traveller of tomorrow. To hasten this to-morrow is one of the several objects of this book.

To see in the carved and colorful depths of the Grand Canyon not only the stupendous abyss whose terrible beauty grips the soul, but also to-day's chapter in a thrilling story of creation whose beginning lay untold centuries back in the ages, whose scene covers three hundred thousand square miles of our wonderful southwest, whose actors include the greatest forces of nature, whose tremendous episodes shame the imagination of [the Romantic illustrator Gustave] Doré, and whose logical end invites suggestions before which finite minds shrink—this is to come into the presence of the great spectacle properly equipped for its enjoyment. But how many who see the Grand Canyon get more out of it than merely the beauty that grips the soul?

So it is throughout the world of scenery. The geologic story written on the cliffs of Crater Lake is more stupendous even than the glory of its indigo bowl. The war of titanic forces described in simple language on the rocks of Glacier National Park is unexcelled in sublimity in the history of

mankind. The story of Yellowstone's making multiplies many times the thrill occasioned by its world-famed spectacle. Even the simplest and smallest rock details often tell thrilling incidents of prehistoric times out of which the enlightened imagination reconstructs the romances and the tragedies of earth's earlier days.

How eloquent, for example, was the small, water-worn fragment of dull coal we found on the limestone slope of one of Glacier's mountains! Impossible companionship! The one the product of forest, the other of submerged depths. Instantly I glimpsed the distant age when thousands of feet above the very spot which I stood, but then at sea level, bloomed a Cretaceous forest, whose broken trunks and matted foliage decayed in bogs where they slowly turned to coal; coal which, exposed and disintegrated during intervening ages, has long since—all but a few fragments like this—washed into the headwaters of the Saskatchewan to merge eventually in the muds of Hudson Bay. And then, still dreaming, my mind leaped millions of years still further back to lake bottoms where, ten thousand feet below the spot on which I stood, gathered the pre-Cambrian ooze which later hardened to this very limestone. From ooze a score of thousand feet, a hundred million years, to coal! And both lie here together now in my palm! Filled thus with visions of a perspective beyond human comprehension, with what multiplied intensity of interest I now returned to the noble view from Gable Mountain!

In pleading for a higher understanding of Nature's method and

accomplishment as a precedent to study and observation of our national parks, I seek enormously to enrich the enjoyment not only of these supreme examples but of all examples of world making. The same readings which will prepare you to enjoy to the full the message of our national parks will invest your neighborhood hills at home, your creek and river and prairie, your vacation valleys, the landscape through your car window, even your wayside ditch, with living interest. I invite you to a new and fascinating earth, an earth interesting, vital, personal, beloved, because at last known and understood!

It requires no great study to know and understand the earth well enough for such purpose as this. One does not have to dim his eyes with acres of maps, or become a plodding geologist, or learn to distinguish schists from granites, or to classify plants by table, or to call wild geese and marmots by their Latin names. It is true that geography, geology, physiography, mineralogy, botany and zoology must each contribute their share toward the condition of intelligence which will enable you to realize appreciation of Nature's amazing earth, but the share of each is so small that the problem will be solved, not by exhaustive study, but by the selection of essential parts. Two or three popular books which interpret natural science in perspective should pleasurably accomplish your purpose. But once begun, I predict that few will fail to carry certain subjects beyond the mere essentials, while some will enter for life into a land of new delights.



“Mission Statements” is an occasional column that presents compelling statements of values and ideals that are important to the people, places, and professions that the Society serves. We are looking for inspirational and insightful writings that touch on close-to-the-heart issues that motivate us to do what we do as park professionals. We invite readers to submit their own Mission Statements, or suggest previously published essays that we might reprint in this column. Contact GWS executive director Dave Harmon at dharmon@georgewright.org or by phone at 1-906-487-9722.

Intangible Values of Protected Areas: What Are They? Why Do They Matter?

The creation and management of protected areas is now a global enterprise. From humble beginnings in a rather obscure corner of North America more than a century ago, protected areas now involve millions of hectares on every continent (including Antarctica) and probably well over 100,000 professional caretakers worldwide. Protected areas are the centerpiece of conservation, universally acknowledged as the indispensable core of any effort to preserve biodiversity and, more broadly, environmental quality. Economically, they are a dynamic component of the world's largest industry, tourism, and are the foundation of one of that industry's fastest-growing sectors, nature-based tourism (Eagles 2003). Together, the conservation and economic values of protected areas are undoubtedly immense, though they have never been completely quantified. Yet these values *are* capable of being measured. Conservation values can be expressed monetarily through models of the "ecosystem services" that protected areas provide (free of charge!) to the marketplace economy (see Daily 1997), while there are several economic formulas for estimating the revenue generated by tourism to protected areas (e.g., the U.S. National Park Service's Money Generation Model II; Stynes and Propst 2000).

Nevertheless, important as these tangible values are, the reasons why people care deeply about protected areas ultimately have little or nothing to do with them. There is another arena of values, values whose benefits are difficult or impossible to quantify, but which lie at the heart of the protective impulse that drives the modern conservation movement. These *intangible values* (also referred to as *nonmaterial values*) include the intrinsic value of nature as well as "that which enriches the intellectual, psychological, emotional, spiritual, cultural and/or creative aspects of human existence and well being" (WCPA 2000).

This issue of *The George Wright Forum* offers a look into the arena of intangible values. With the exception of this overview (a version of which was originally published in the IUCN journal *Policy Matters*), the material

presented here is drawn entirely from *The Full Value of Parks: From Economics to the Intangible*, which the author co-edited with Allen D. Putney, who leads the Task Force on Cultural and Spiritual Values of IUCN's World Commission on Protected Areas (Harmon and Putney 2003). The book—conceived for the Fifth World Parks Congress last September in South Africa—drew on a worldwide roster of authors to explore the topic. For the *Forum*, I have selected five chapters from the book to illustrate the range of intangible values.

What are these values? The WCPA task force has classified eleven major kinds, all of which spring from particular qualities of protected areas (list adapted from Putney 2003):

1. *Recreational values*, those qualities that interact with humans to

- restore, refresh, or create anew through stimulation and exercise of the mind, body, and soul (i.e., recreation).
2. *Therapeutic values*, those that create the potential for healing, and for enhancing physical and psychological well-being.
 3. *Spiritual values*, those that inspire humans to relate with reverence to the sacredness of nature.
 4. *Cultural values*, those that are ascribed to natural, cultural, and mixed sites by different social groups, traditions, beliefs, or value systems. These values, whether positive or negative, fulfill humankind's need to understand, and connect in meaningful ways, to the environment of its origin and the rest of nature.
 5. *Identity values*, those that link people to their landscape through myth, legend, or history.
 6. *Existence values*, those that embody the satisfaction, symbolic importance, and even willingness to pay, derived from knowing that outstanding natural and cultural landscapes have been protected so that they exist as physical and conceptual spaces where forms of life and culture are valued.
 7. *Artistic values*, those that inspire human imagination in creative expression.
 8. *Aesthetic values*, those that carry an appreciation of the beauty found in nature.
 9. *Educational values*, those that enlighten the careful observer with respect to humanity's relationships with the natural environment, and by extension, humanity's relationships with one another, thereby creating respect and understanding.
 10. *Scientific research and monitoring values*, those that contribute to the function of natural areas as refuges, benchmarks, and baselines that provide scientists and interested individuals with relatively natural sites less influenced by human-induced change or conversion.
 11. *Peace values*, those that contribute to the function of protected areas as a means of fostering regional peace and stability through cooperative management across international land or sea boundaries (transboundary protected areas), as "intercultural spaces" for the development of understanding between distinct cultures, or as places of "civic engagement" where difficult moral and political questions can be constructively addressed.

There are many other intangible values of protected areas, but the remainder of this overview will focus on these.

Recreational Values

It is intuitively obvious that the millions of people who visit protected areas each year derive benefits from the recreational activities they do there. The challenge for protected area researchers and managers has been to gain a more precise understanding of the types of benefits recreation provides, as well as their cumulative significance. A great deal of social science research has been conducted into all aspects of leisure in outdoor settings, and the results of that research are increasingly being used by park managers to guide their decisions.

"Recreation" is simply defined as

activities pursued while at leisure. "Recreational use of protected areas" is defined as visits by local and regional residents and by tourists. There are three distinct components of leisure benefits: (1) gains made by an individual, a group, or society at large (e.g., the realization of physiological benefits, skill improvements, the creation of jobs); (2) the avoidance of losses by maintaining a desired condition (e.g., using backpacking to promote family cohesion); and (3) the realization of specific satisfying psychological experiences, also termed "psychological outcomes," that accrue only to individuals (e.g., stress release; Driver and Bruns 1999).

In the beginning of park-based recreation research, benefits were largely assessed by the expedient of simply counting visitor numbers, even though they are notoriously difficult to collect and subject to managerial meddling (Hornback and Eagles 1999). More recently, emphasis has been put on the benefits (and possible disadvantages) accruing to individuals and society from park-based recreation.

The question of whether park-based recreation is associated with specific benefits is difficult to answer because the necessary research has not yet been undertaken (Roggenbuck and Driver 2000). However, as Shultis (2003) notes, "considerable research on the self-reported benefits of recreating in protected areas has identified a basic, relatively constant range of benefits, including enjoyment of the natural environment, escape from urban/home/built environments, rest and relaxation, achievement/challenge, and health/fitness." The problem is that "we still know frustratingly little about what ... these benefit categories truly mean" or what their signif-

icance is to individuals and society. Nevertheless, "it seems clear that in pursuing recreational activities in protected areas, park visitors obtain a prodigious range and depth of psychological and physiological benefits that manifest themselves throughout individuals and wider society." In this sense, "recreational values are not 'intangible' to park users: the benefits of using parks reverberate throughout their lives and have clear significance. However, these same benefits and values become intangible when park advocates attempt to bring them into the sociopolitical arena," precisely because they are difficult to quantify (Shultis 2003).

Therapeutic Values

Whereas recreation values of protected areas derive from non-facilitated leisure activities, therapeutic values result from intentional, structured activity designed to ameliorate a specific social or personal problem. People have repaired to natural areas to gain healing for thousands of years, but directed therapeutic programs aimed at producing clinical outcomes have been around for only about a century. The programs date back at least to 1901 and the "tent treatment" of psychiatric patients at Manhattan State Hospital East in New York City, and later (in the 1930s) expanded into camps addressing the psychological needs of individual adolescents. The use of wilderness therapy (which is considered a modified form of group psychotherapy) expanded greatly in the 1970s, while the 1980s and 1990s were growth periods for the utilization of wilderness therapy for youth with problem behaviors (Ewert et al. 2003). Today, in the United States alone it is estimated that there are over 500

organizations offering wilderness programs for personal growth and development (Frieze 1996). Outward Bound, an international wilderness adventure program, serves about 40,000 people each year in its worldwide programs (Hattie et al. 1997).

As Ewert et al. (2003) point out, “there is considerable debate among practitioners and researchers as to what constitutes a ‘therapeutic’ use of natural areas,” yet “trends in programming reflect how the practice is evolving given the severity of problems these programs have begun to address in treatment.” In the United States, where the majority are found, the trend is toward “sophisticated therapeutic programs that are often state licensed and employ a medical model of treatment that includes clinical supervision by licensed therapists.” Numerous well-developed clinical models are now in use.

What makes protected areas therapeutic? Research suggests answers that fall into two broad categories. First, parks and the activities that take place in them represent both a symbolic and an actual break with one’s “normal life.” Crossing that divide produces benefits. Going to parks can spur an increase in personal awareness, with the outdoor setting often causing individuals to change patterns of self-destructive behavior. This in turn can result in an increase in social awareness, and a concomitant decrease in anti-social behavior. Second, the activities one does in protected areas—hiking, camping, contemplating nature, etc.—demand initiative, action, and sustained attention on the part of the individual. This results in an immediacy of experience. For example, if one has hiked into a remote area and decides to lounge

around all afternoon rather than set up camp, the consequences are felt very soon thereafter, whereas “in town” (so to speak) the consequences of irresponsible behavior are often buffered and delayed. In addition, success in dealing with outdoor situations usually demands teamwork, which has its own rewards. Combine that with close contact with the primal forces of nature, and park visitors often take home with them a constructive—and therapeutic—sense of humility (Hendee and Brown 1987; West and Crompton 2001).

Spiritual Values

Protected areas often encompass specific sites, or even entire landscapes, that are considered sacred. In addition, many people regard certain protected areas themselves as quasi-sacred because they have been dedicated to high purposes in perpetuity—rather like the way consecrating a building makes it into a church. Thus, people may engage spiritual values in protected areas by encountering specific places of “ultimate meaning and transcendent power” (Chidester 1987; see Figure 1), or they may experience a spiritually transformative experience simply by encountering nature in a place that they know is protected in perpetuity (Taylor and Geffen 2003; cf. Harmon 2003).

It is another matter for a protected natural area to be created precisely because it is a sacred site. Pilgrimages to special natural places for personal reflection, rites of passage, and spiritual renewal are a feature of cultures around the world (Ewert et al. 2003). A pioneering effort in Mexico has resulted in one of the world’s first protected areas designated as a “sacred natural site,” a category of protected



Figure 1. The National Historic Sanctuary of Machu Picchu in Peru. Inscribed as a World Heritage site for both its cultural and natural values, Machu Picchu's history as an important Incan city, and the poignancy of its eventual abandonment, combine with a spectacular natural setting to make it a place of "transcendent power" that draws visitors from around the world. *Photo courtesy of Allen D. Putney.*

area that is beginning to receive attention (Lee and Schaaf 2003). The Wirikuta Sacred Natural Site in the state of San Luis Potosi protects areas of the Chihuahuan Desert that are revered by the Huichol (or Wixarika) people. Each year, a small number of chosen representatives make the trek to Wirikuta, where, after a series of offerings and rituals, the pilgrims ingest peyote, a cactus whose hallucinogenic effects are central to giving Huichols access to spiritual insights. In addition to the sacred sites themselves, over 135 kilometers of the traditional pilgrimage route the Huichols use to reach Wirikuta have now been protected by the San Luis Potosi government (Otegui 2003).

Of all the intangible values of protected areas, spiritual values are poten-

tially the most contentious. As more groups assert (or re-assert) their right to use sacred sites within protected areas, managers increasingly find themselves in the position of being asked to arbitrate between spiritual and religious values that conflict with each other or with other kinds of value. Much to the consternation of park managers, in such situations "there is no way for those vested with management responsibility to fully accommodate both points of view" (Taylor and Geffen 2003).

Cultural and Identity Values

In many indigenous societies there is no clear division between one's culture, one's personal identity, and one's spirituality. Moreover, these multifaceted cultural-identity values are

often inscribed (either figuratively or literally) into an ancestral landscape, many of which now fall within gazetted protected areas. How such landscapes are regarded by local communities is now acknowledged as an important factor that must be accounted for in protected area management strategies. Agencies are learning that “it is not possible ... to simply exclude or erase values from an area of land by classifying it in a particular way” for park management purposes (English and Lee 2003). Recent changes in the management of Australia’s protected areas in response to Aboriginal rights and concerns provide a case in point, with activities ranging from co-management through to the mapping of “wild resource use places” within protected areas (Weaver 1991; English 2002). More flexible protected area designations, such as IUCN Category V protected landscapes, are seen as one way to better accommodate landscape-based cultural values (Andrade 2003; Sarmiento 2003).

But in other societies, cultural and identity values of protected areas may be distinguished from spiritual values by virtue of their being *secular* markers of distinctiveness. The wilderness movement, which had its origins in the unique history of European colonization of North America, straddles the line between sacred and secular but now boasts a strong scientific justification. The existence of large areas of wilderness has been claimed as an essential part of the make-up of “American character.” Ironically, designated wilderness has itself become a cultural icon whose putative character rests at least in part on the dubious claim that these places were historically free of cultural content (for an overview, see Callicott and Nelson

1998). The construal of what—if anything—constitutes wilderness certainly varies from culture to culture, particularly when developed- and developing-country perspectives are compared (Barnes 2003).

A key issue here, as Hay-Edie (2003) has made clear, is the difficulty of transferring conservation techniques (which many conservationists take for granted as being universally applicable, rather than as products of a particular culture) from one social setting to another. In their eagerness to embrace cultural values, he writes, “conservationists are often at risk of picking and choosing taboos, sanctions, and other supposedly ecologically useful behaviors without meeting a complex culture on its own terms.” Yet Hay-Edie feels that a “more genuine interface of worldviews seems possible” through the mechanism of the World Heritage Convention (Hay-Edie 2003). In recent revisions of its criteria for inclusion on the World Heritage List, the convention has not only recognized intangible cultural and identity values as important contributors, but has inscribed “mixed sites” having both natural and cultural components (Rössler 2003). Similar inclusiveness can also be found in UNESCO’s biosphere reserve program (Schaaf 2003).

It is worth emphasizing that cultural and identity values are perhaps strongest in community-run protected areas: those protected by customary forms of recognition that are, in terms of effectiveness, equivalent to the force of state-sponsored civil law (Harmon 2003). Interestingly, these community-level cultural and identity values are by no means incompatible with the conservation of biodiversity; in South Asia (among other places), there are

many examples where biodiversity is part of the constellation of cultural values (Pathak and Kothari 2003). Similarly, in southwest Cameroon the Nyangkpe sacred forests not only serve as *de facto* protected areas important to biodiversity conservation, but also play an paramount role in solidifying cultural identity and regulating the general social order (Kamanda et al. 2003).

Existence Values

Existence values—the satisfaction derived from knowing that protected areas exist, that they safeguard outstanding natural and cultural landscapes, even though one might have no prospect whatsoever of actually visiting them—might seem, at first, to be a rather bloodless, abstract category of value, hardly comparable in visceral force to those that we have discussed so far. In a sense this is true enough. Yet existence values are widely held, adding a dimension of depth to other intangible values that, if missing, would render them far less effective. We can say that existence values are part of a moral foundation underlying all the other intangible values of protected areas.

Why do so many people derive satisfaction from simply knowing that protected areas exist? Fundamentally, they are reacting to a profound angst, a fear that modern civilization is progressively destroying the natural world and hence eroding the biophysical groundwork that underlies our cherished cultures and human identity. This feeling is complicated by the fact that most of us at the same time are grateful for whatever technological advantages we enjoy over our ancestors, advantages that we would not want to be without. The result is a cav-

ernous psychological rift within ourselves. Knowing that protected areas exist is, therefore, a salve to our conscience: we can take heart in knowing that perhaps not all of nature will be lost, that indeed enough will be preserved to enable ecosystems to continue to function.

This begs the question of whether such existence values are in fact not a salve at all, but rather a mere sop to our conscience. Here we are led to what is perhaps the largest, most difficult uncertainty facing the whole enterprise of protected area conservation: Are all our efforts *really* going to make a difference in the long run? If we are honest with ourselves, we have to admit that it is very much an open question. Currently, only a small fraction of the world's lands and waters have protected status under law or custom, and there is no account of how effective that status is. Still, from a practical standpoint, we must go forward in the belief that protected areas will make a difference. To do otherwise would be to admit certain defeat, and that would be far worse than quibbling about whether our hopes for success are misplaced or not.

Aesthetic and Artistic Values

One reason why existence values are so deeply held is because they are rooted in a powerful human need for sensual engagement, and no one can deny that the world's protected natural areas contain many superlative places that delight the senses. One first thinks of stunning scenery: snowy mountains and surging waterfalls, immense tundra and teeming rainforests, sweeping grassland vistas and stark deserts. But other senses are involved too, particularly those of touch, smell, and hearing. Parks are

very tactile places, where one is encouraged to feel nature at an intimate scale, to thrust one's hand into a bed of moss, or let beach sand run through one's fingers at seaside, or feel the rocks beneath one's feet on a rugged trail. Odors and aromas—pine pitch, animal musk, wildflowers, campfires—add irreplaceable texture, and, when recollected, often set off a whole succession of memories that make a park experience unforgettable. Combine all this with the sounds of nature—birdsong, wind whistling down a canyon, lapping waves, the dripping of water from a desert seep, and, perhaps the rarest and most priceless of all, the perfection of silence, of total quiet—and one comes away with an aesthetic experience that far surpasses any human contrivance in terms of variety and complexity.

Historically, aesthetic or perception-based values played a key role in determining which natural landscapes received protection. They still do, despite the increasing emphasis on biodiversity protection and ecological representativeness as keystone criteria. The reason is deep-seated: over the course of evolutionary time, we developed an ineradicable complex of emotional responses to sensory stimulation. We use these responses to humanize elements of the environment and relations between them. Now, however, thanks to an expanded and enlightened sense of aesthetics informed by scientific understanding, even landscapes traditionally considered to be ugly and inhospitable (e.g., scrubland, steppes, bare dunes) can be drawn into the protective fold because “landscape perception parameters can be successfully used to contrast (and confirm) ecosystem evaluations based on ecological parameters” (Crespo

and Martínez 2003).

Although closely allied to aesthetic values, artistic values are distinguished by the presence of human intentions, the purposeful act of creating objects that have their own separate beauty and value. The link between natural beauty and artistic inspiration is so widespread that it hardly needs explanation. Suffice it to point out that artists had a central role in launching the modern protected areas movement. The scenic wonders of Yellowstone were first made known to the U.S. Congress and the general public through the efforts of artists, most notably the landscape painter Thomas Moran and the photographer William Henry Jackson (Silliman 2003). That link has never since been broken, and parks continue to fascinate visual artists, musicians, writers, dancers, and artisans, whether directly as subject matter or indirectly as inspiration for collateral ideas.

Educational Values

Every protected area contains things worth learning about. Not everyone who visits a protected area comes intent on gaining knowledge, but most do. At its best, this expectation translates into an openness to new ideas on the part of the visitor, an eagerness to expand one's worldview. It is a subtle but critically important value that protected areas provide to people, and is part of why protected areas are public institutions whose educational potential is on a par with the world's great museums and zoos.

Some of that potential is already being realized through guiding and interpretive services. Parks that are part of well-funded systems have professional educational staff that carry out these visitor service functions.

Staples of protected area education include guided walks, wildlife discovery caravans, formal presentations to visitors by park staff, programs aimed at schoolchildren and school groups, and many others. In addition, fixed media, such as interpretive signs and audiovisual presentations, are extensively used to inform visitors. Most protected areas have visitor contact centers, often housing a museum and auditorium, where basic orientation and more in-depth education about the park take place. Generally these programs are organized according to a parkwide interpretive plan.

Increasingly, protected areas are forming partnerships with museums and universities as a way to reach out to new audiences within the general public and among academics. This is an important step because it integrates parks with society at large. Part of every protected area's mission must be to address people's needs and issues rather than simply attempting to preserve nature in isolation from the larger social context. Consciously framing an educational mission as part of a protected area's management scheme does this in a positive way. There are always social and economic costs imposed on local communities whenever a new protected area is established. Some of those costs can be offset by employing local people who have an intimate and long-standing knowledge of the park's "educational resources" as educators on the park staff.

Scientific Research and Monitoring Values

Science itself is connected directly with educational values because it is a way of knowing, a process for learning (Moore 1993). It has been justly said

that "parks provide places to learn from personal experience," and "personal experience is among the most powerful and enduring ways for most people to learn.... By giving multiple examples of reality, parks connect people to abstract concepts emotionally. Such place-based learning offers multiple stimuli that enhance opportunities for diverse learners, clarifies new insights, and strengthens retention. Parks generate passion for learning, with deep, personal, emotional connections born out of experience, and stimulate curiosity that is the bedrock foundation of science" (Davis et al. 2003).

Knowledge of nature begins with exploration, and exploration leads to inventories of the world around us that are the hallmarks of any science, whether it be an orally transmitted system of traditional environmental knowledge or the classical hypothesis-driven reasoning of Western scientific inquiry. Inventories inevitably lead to monitoring, the systematic recording of how nature changes over time. In a system of traditional environmental knowledge, monitoring knowledge is transmitted in narratives that describe how things used to be compared with the present. In Western science, monitoring is carried out according to written protocols tracking a set of environmental conditions carefully chosen because they are thought to signal larger changes in ecosystems. These conditions can be thought of as "environmental vital signs" (Davis et al. 2003). Monitoring them within protected areas helps make those areas into bellwethers for entire ecosystems.

Current scientific research in parks has contributed many insights into today's environmental problems, none more important than the realization

that local actions are enmeshed in global systems of almost staggering complexity:

The contemporary conservation movement and scientific ecology have interacted in the past two decades to develop a better understanding of and concern for ecosystem-level properties that often function at scales far greater than park or preserve boundaries. The consequence of this has been that even in the largest and oldest national parks, we now understand that most often the serious ecosystem stressors—the anthropogenic forces that lead to a loss of an untrammelled ecosystem retaining all of its parts—are not so much from tourism and the interaction of park visitors with nature, but represent forces operating at regional to global scales (Davis et al. 2003, citing Graber 1983 and Graber 1995).

One could argue that the principal value of scientific research and monitoring in protected areas is to promote this more far-reaching view of environmental challenges.

Peace Values

Under “peace values” fall three distinct functions of protected areas: fostering regional peace and stability through cooperative management of transboundary protected areas, providing “intercultural spaces” for the development of understanding between distinct cultures, and acting as places of “civic engagement” where difficult moral and political questions can be constructively addressed.

The number of transboundary protected areas has increased rapidly over the past decade. As of 2001, there were 169 transboundary complexes containing 650 individual protected areas involving 113 countries (Zbicz 2001). Case studies of transboundary

protected areas show that there are many benefits to be gained, including increased coordination between park authorities, thus eliminating needless duplication of tasks; a greater tendency to manage on an ecosystem scale rather than being constrained by artificial boundaries; and decreased political tensions among countries. Symbolically, too, transboundary protected areas are important as concrete expressions of good will between countries (Hamilton et al. 1996; Sandwith et al. 2001).

Less formalized but no less important is the idea of protected areas as intercultural spaces. This does not mean that people are unwelcome to bring distinct values and worldviews to parks. Quite the opposite: where parks are conceived of as intercultural spaces, the authorities strive to make the park a place where people can, if they wish, express their views and have access to other views in a productive and respectful manner. This can be accomplished through sensitive and nuanced interpretive treatments of controversial or conflicting subjects that are associated with the park, and by creating an atmosphere of openness and transparency within the park authority itself.

Closely related is the idea of civic engagement, a term borrowed from the museum profession. Civic engagement refers to a public institution, such as a museum or a protected area, actively seeking out a role in elucidating controversial issues rather than simply waiting to be caught up in them. It does not mean that the institution tries to set itself up as a self-appointed arbiter of controversy, nor does it simply offer itself as an intercultural space for exchanges of differing viewpoints. Instead, it makes a

conscious and sustained effort to seek out “an active, intentional role in public dialogue around the kinds of contemporary issues that provoke multiple viewpoints” (Bacon et al. 1999). It is a proactive rather than reactive stance. Civic engagement tries to shape the process of achieving agreement on controversial issues, although not the outcome itself (Sevcenko 2002). The U.S. National Park Service has embarked on a series of workshops to see how civic engagement can be applied to sites in the American national park system (USNPS 2002).

These sketches of the major intangible values of protected areas by no means exhaust the topic. We have left aside consideration of the distinction between intrinsic and instrumental values and its ramifications for protected area management (Harmon 2003), the value of authenticity in nature (Gobster and Hull 2001), the cultural and spiritual values of biodiversity (Hamilton 1993; Ramakrishnan et al. 1998; Posey 1999), gender-related issues on the use and perception of public space (e.g., Day 2000)—the list goes on. But what has been said is enough to give an idea of the breadth of intangible values and how they are often connected with one another.

Why Do Intangible Values Matter?

Tourism to parks is a huge industry, and the economics of protected area systems has rightly become a critical consideration for governments, policymakers, and park managers at all levels. But the very success of parks as tourist destinations obscures the real reasons why people choose to go to them. In fact, they are popular precisely because they offer a clear-cut con-

trast to the getting and spending that drives so much of modern life. They offer harried people a place to reflect and reinvigorate themselves. In this sense parks are a counterweight to what might be called “everyday” values. But more than this, the places and things in parks carry intrinsic natural values that exist without regard to any form of human usefulness or purpose. There is evidently a connection of some kind between many of the values we as humans generate within our various cultures, and the natural values “out there” in the environment, existing apart from us. To judge from the ever-increasing popularity of parks, this connection resonates in millions of people. Here, then, is the ultimate source of what we might call the “protective impulse”: the motivated desire to safeguard special places. Since parks and other protected areas are universally recognized as critical components of conservation, the importance of intangible values is clear: they are at the heart of the protective impulse that drives the modern conservation movement.

The Papers in This Issue

Let me conclude by summarizing the papers that follow. “Managing the Intangible” is a manager’s-eye view of the practical challenges involved. Drawing on their experiences in Australia and Canada, respectively, Anthony J. English (New South Wales National Parks & Wildlife Service) and Ellen Lee (Parks Canada) provide some practical guidance on establishing management regimes for protected areas that deal with intangible values. Next, three scientist-managers with the U.S. National Park Service, Gary E. Davis, David M. Graber, and Steven A. Acker, lay out the case for parks as

indispensable places where the vital signs of the planet can be monitored in their paper “National Parks as Scientific Benchmark Standards for the Biosphere; Or, How Are You Going to Tell How It Used to Be, When There’s Nothing Left to See?” This is followed by “Aesthetic Values and Protected Areas: A Story of Symbol Preservation,” in which Eduardo Crespo de Nogueira (of the Organismo Autónomo Parques Nacionales, Spain’s national park agency) and Consuelo Martínez Flores (an artist) recount the ups and downs (and ups again) of aesthetics as a force behind the creation and development of protected areas. Then Bron Taylor

and Joel Geffen, both scholars of religion with a special interest in its relationship to environmentalism and science, offer several accounts of what happens “when worlds collide” in protected areas in a paper titled “Battling Religions in Parks and Forest Reserves: Facing Religion in Conflicts over Protected Places.” Finally, in “Life and the Nature of Life—in Parks,” one of the world’s leading environmental philosophers, Holmes Rolston III, shows how the human experience of parks, though it often begins in recreation, culminates with a “re-creating, deepening experience of the human spirit.”

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Managing the Intangible

Sanctuaries of Dreams

When many of us think about parks and protected areas, we envisage landscapes that are associated with concepts such as beauty, space, and “getting away from it all.” For some, these areas are sanctuaries, not just for fauna and flora but for the dreams we hold for our future quality of life (Hales 1989: 144). This seems a large burden to place on protected areas, but many would subscribe to it.

Clearly, the aim of “conserving nature” does not encompass all of the values that are associated with protected areas. This is evident in even a cursory glance at the history of the park movement. Political forces linked to nationalism and Romantic concepts about well-being played a guiding role in the emergence of parks and continue to influence their establishment (e.g., Everhardt 1983). Indeed, many scientists would argue that until recently, biodiversity conservation has never been the primary force behind park creation (e.g., Nix 1997).

In reality, all protected areas are linked to complex intangible values that can be difficult to define or even to reconcile with the core aims of park management agencies. Some of these values, such as the nature lover’s desire to experience quiet or the firsthand sighting of a rare bird, are often easily accommodated. In contrast, others may have a historical, political, or cultural dimension that generate significant emotion and debate. Such values may derive from people’s life history or sense of their own identity and may lead them to question the wisdom of agency actions. This chapter considers whether management can in fact recognize and provide for the multitude of intangible values that are tied to park landscapes.

Defining the Intangible

Intangible values are by their nature difficult to measure or define. Recognizing them presents a challenge, as park management is commonly focused on tangible outcomes. Goals associated with infrastructure, law enforcement, income generation, fire, and pest species are perhaps more easily articulated and translated into management action. Because of this, the values held by a park agency can sometimes overshadow the intangible ones at the heart of a society’s attachment to place.

Intangible values are highly varied. They may include the importance that

an urban person places on the intrinsic existence of a park. This person may feel that the park adds somehow to the quality of the world in which she lives, as well as satisfying her belief in the protection of areas, places, and species from development. At another level, an intangible value may be characterized by a group’s desire to see an event or person commemorated through the protection of a landscape and its associated built heritage. Battlefields, historic sites, or what have been termed “places of shame” where indigenous people have been massacred by colonizers may encapsulate these values.

The concept of nonmaterial values intersects with physical places as well as activities undertaken by people, either singly or in groups. These values may be manifest in indigenous people's attachment to a cultural site or a nonindigenous family's memory of returning each year to the same campsite for holidays. Intangible values may be expressed in these cases by visiting and using these places, thereby bringing people into direct contact with the rules and regulations governing a park.

Underlying this chapter is the key point that protected area boundaries are overlain on environments that have a history of human presence and in many cases a recent or existing human use. This means they cannot be neatly excised from human memory or culturally defined ways of perceiving and valuing landscapes. Parks are embedded in social, economic, and political systems that ensure the values we place on them are linked to ongoing debates about our place in the world.

To some extent, the different classes of protected areas recognize the presence of diverse values and the need for parks to cater to a wide range of activities or functions. It is not possible, however, simply to exclude or erase values from an area of land by classifying it in a particular way. The ongoing debate about "wilderness" in countries like Australia illustrates this well. This concept is opposed by indigenous groups who see these areas as having a human history and meaning. Equally, those who wish to light a fire as part of their bush-camping experience may question the rules of wilderness area managers that forbid such an activity.

The difference in scale between the embers of a camper's fire and the com-

plex ties that bind Aboriginal people to "country" may seem too great to allow us to include them in the same paragraph. This seeming disjunction, however, encapsulates the fact that park management intersects with intangible values on many levels.

Can Intangible Values Be Managed?

Ever since the declaration of the first formal national park at Yellowstone, approaches to managing protected areas have evolved in complex ways. This can be seen in the development of park management agencies around the globe. Today, many combine specialists in disciplines including ecology, law, history, archaeology, and public education. It would appear that this evolution is a response to a number of key factors that reflect our changing understanding of parks. Chief among these in many countries is our growing understanding of ecosystem complexity and the need to integrate protected areas into the management of surrounding tenures and land uses.

This shift in understanding has been matched by increased attention to the intangible values of parks. Despite this, there is a danger that protected area managers encourage or even adopt the myth that their role is to deal primarily with the conservation of biodiversity and ecosystem health. Such a view, while attractive, is belied by the day-to-day uses of parks and the continued expression of complex attachments to their landscapes.

Such a view has come under pressure as parks have been established in developing countries where the luxury of setting aside areas of land for "conservation" simply does not exist. Here, park management has come face-to-face with the need to encompass con-

cepts such as resident communities, consumptive uses of wildlife, and the recognition of cultural obligations and interests on land management. The management of an iconic park such as Royal Chitwan in Nepal is a good example (Nepal and Weber 1993).

In developed countries, similar issues have arisen in the face of land claims and the expression of native title interests by indigenous people. In some cases, this has prompted the emergence of jointly managed parks where attempts are being made to develop collaborative approaches that satisfy Western agendas and those of local people. Australia in particular has attempted to tackle this issue in a range of parks, including Uluru-Katajuta and Kakadu in the Northern Territory (DeLacy and Lawson 1997) and Mutawintji in New South Wales. This has forced park agencies to actively consider complex intangible values and their relationship to practical management activities such as the control of fire and pest species and the messages that are conveyed to visitors.

In the same way, the concept of "protected landscapes" has emerged to challenge the view that parks can, or should, be divorced from the historic, economic, and cultural systems in which they are embedded. Lucas (1992) points to the protected landscapes of England, Wales, and France as examples where management must accommodate and value modified lands with mixed uses. The same concept is applied in the Annapurna Conservation Area in Nepal (Stevens 1997).

Overlying these developments is the fact that the last few decades have witnessed significant change in the relationship between the community and government in many countries.

The growth of the environment movement is a central part of this shift and encapsulates the presence of increased community scrutiny of decision making. This has resulted in active combat in the courts and on the picket line that has influenced the outcome of elections. It is no surprise that there has been a burgeoning literature on concepts such as collaborative management and community involvement (e.g., Hunt and Haider 2001). Land management agencies around the world have had to confront and respond to these concepts. This, too, has brought intangible values some visibility as engagement with community members automatically exposes managers to complex values-based issues.

The management of intangible values is brought into relief when we consider interaction between indigenous people and parks. The Western approach is to describe, categorize, and split into different categories. The traditional indigenous approach is often allegorical—to tell a story that illustrates a value, rather than to clearly describe the value itself. A place will often be significant because of many overlapping values, illustrated through both stories and repetitive activities—"It has everything we need to live," or "It is where we come together each year." But often the place is felt/seen to have an intrinsic value in and of itself. "We come there every year because it is a special place" (not "It is a special place because we come there every year"). To describe a place in this way is to see oneself within the place, as part of it.

The act of "defining" intangible values is itself not culturally neutral—it comes from the Western scientific tradition. Nonetheless, if we do not de-

fine intangible values in some way, it will be virtually impossible for them to influence management practices.

An implicit assumption in protected area management has been that by managing the physical, we can avoid cultural or subjective biases. This is based on a Western, scientific approach to management. That is, if we can understand the physical properties and relationships of natural resources, we can manage them sustainably. The assumption lying behind this approach is that the values of these resources lie purely in their physical nature. This also implies that we can understand the complex relationships between resources and the forces of nature by understanding their physical nature alone. In its extreme form, this is also an approach that effectively removes human beings and their actions from the ecosystem in order to make it "pure." The assumption in this case is that if we can just remove all traces of human influence from a protected area (e.g., through environmental cleanup), it will be pure, self-regulating, self-perpetuating wilderness.

Some of the weaknesses of this approach are obvious. If tangible/physical values are articulated separately from intangible values, it will be harder to develop management practices that respect both kinds of values in an integrated fashion. Human beings are part of nature, and there are virtually no places on Earth that have not had human beings as part of their "natural" history. One person's wilderness is another person's homeland. Each has its own intangible values in terms of symbolism, aesthetics, cultural meaning, and identity.

Despite growing awareness of this challenge, the concept of intangible

values seems to rarely surface in the mission statements or policies of park management agencies. Understanding of what this concept means and how it interacts with park landscapes is still overshadowed by agency attention to issues that, while inseparable from intangible values, are more easily clothed in the language of science or bureaucracy.

Nuts and Bolts

Numerous activities that can be defined as core business by park agencies, such as fire and pest species management, can be conducted collaboratively with local people in a way that affirms cultural knowledge and people's intangible values. An obvious example of this is the adoption of Aboriginal firing practices in park management programs in some parts of Australia (Parks Australia 1997). This activates nonmaterial values associated with Aboriginal people's custodial interests in country and the desire to ensure that their culture is applied and alive.

Local people can possess an intimate knowledge of fauna, flora, land use history, fire, and ecosystem processes that has developed through long-standing interaction with a landscape. Often this knowledge has crossed generations through story and practical experience. This knowledge can be ignored or discarded by park managers who are trained to see parks as tools to redress past human effects on the landscape. At one extreme, parks can be viewed as "wilderness" and in a sense devoid of human values, except for those that champion the preservation of "nature."

Many other activities, such as the provision of educational tours and information, can actually foster a

response among park visitors that is enriching and significant. People may choose to return to a park where they have had such an experience and, in a sense, weave these visits into their life and personal history. People may also seek to gain understanding of other cultures or ways of life by visiting parks. In Australia, the concept of reconciliation is seen as an important goal of many parks, especially those where visitors can learn from Aboriginal people about how they view the landscape.

To be effective, nonmaterial values need to be explicitly acknowledged by park managers, even where they are seen to conflict with the agency's view of why a park exists and how it should be cared for. This can be as simple as using the indigenous names for fauna and flora or significant landscape features. It can be as complex as maintaining evidence of human-modified landscapes through ongoing intervention or finding resources and strategies to maintain historic structures. Table 1 attempts to explain how some nonmaterial values can be addressed by management actions. This is not a

definitive list, but it reveals the complexity of this issue.

**Imagining Country:
Intangible Values and the New
South Wales Experience**

The experience of the New South Wales National Parks and Wildlife Service (NPWS), Australia, in coming to grips with intangible values in protected areas can be used to illustrate common issues and opportunities. Over the last five years, the agency has invested significant resources in research and planning that seek to engage the diverse intangible values linked to parks. While the effects of this work on park management are still to be properly realized, it reveals some of the steps that an agency must pursue if it is to achieve this aim.

During this time, NPWS's Cultural Heritage Division (CHD) has assessed intangible values in a range of contexts. These include exploration of the values that Aboriginal people attach to biodiversity and environmental health (English 2000, 2002) as well as the ties that bind Europeans to structures and landscapes that have been encom-

Table 1. Some examples of how management can address nonmaterial values.

Nonmaterial value	Management action
Psychological benefit or well-being generated by visiting a park landscape	Provision of access and infrastructure to support activities such as bush walking, camping, and education in ways that respond to the needs of different groups and provide them with a valued experience
Protection of cultural landscapes and valued cultural places	Active assessment of the social and cultural meaning and significance of park landscapes. This might combine active conservation of particular places, research into an area's land use history, and recognition of people's knowledge about the land and of the continued importance of interaction with, and use of, valued places.
Reconciliation between cultures	Joint management, cultural tourism, and education programs
Education and learning	A blend of experiences for park visitors that reflect the multiple values of a protected area
Cultural values and community health	Continued access for indigenous people to carry out cultural practices and recording of people's history and memory
Intrinsic value of landscape processes	Management of ecosystem health

passed within park boundaries (Veale 1997, 2001). Attention has also been given to the values placed on parks in the Australia's multicultural society by looking at how Australians of Macedonian (Thomas 2001) and Vietnamese backgrounds perceive and use park landscapes.

For many decades, intangible values were largely ignored or else not explicitly addressed by the NPWS in its approach to management. The work of the CHD has changed this, primarily because it has shifted itself from an emphasis on archaeological investigations to those that engage living people and their connections to place. This research has raised important issues that articulate intangible values. At its core has been the attempt to "imagine country"—that is, to picture the complex social and cultural links between people and landscapes that reside in memory, feelings, and beliefs.

Protected Areas and First Nations in Canada

In Canada, most legislation providing for the establishment of protected areas focuses on natural values. In fact, natural parks are seen by many as wilderness areas, with as little human impact as possible. However, in the last decade or so, partly as a result of the influence of northern Aboriginal groups in the settlement of land claims, this view has begun to change, and the cultural values of natural parks are beginning to be recognized. However, it is still the case that the identification of areas for consideration of natural parks uses natural criteria identified by Euro-Canadian scientists for determining what areas should be protected. Minor consideration may be given to boundary

adjustments to include important archaeological sites, and once the natural area is identified, its cultural values are then determined. Thus, cultural values are still seen as secondary in this process.

On the other side of the coin, most cultural heritage legislation, with its background in Western historical thinking, focuses on the identification and designation of cultural heritage sites and is particularly suited to dealing with built heritage, such as buildings, and archaeological sites. Intangible cultural values are considered significant, but natural values are rarely considered in the initial identification stages, and then only as being complementary to or a subset of the cultural values. Most natural parks are large geographical areas. Most cultural heritage sites are small geographical areas. In both cases, the legislative and policy process for the establishment and management of these parks and sites reflect this reality. When we identify places with both cultural and natural values, giving their cultural and natural elements equal attention, we must move to a more integrative concept of protected areas, such as cultural landscapes. Cultural landscapes, some of which are quite large by traditional historic site standards, have characteristics that do not fit very well with the sets of legislative and policy processes and mechanisms for either natural parks or cultural heritage sites. They do, however, provide the integration of intangible and tangible, and natural and cultural, values.

Table 2 compares and contrasts protected areas, historic sites, and cultural landscapes in terms of evaluation criteria, size of geographical area, whether subsurface protection is needed, and whether natural and cul-

Table 2. Comparison of protected natural areas, historic sites, and cultural landscapes.

	Protected Natural Area (e.g., National Park)	Historic Sites	Cultural Landscapes
Evaluation criteria	Natural values	Cultural or historic values	Cultural and natural values
Size of geographical area	Large geographical areas to protect ecosystems, watersheds	Small geographical areas to protect buildings, building complexes, and archaeological sites	Large geographical areas to encompass all values
Subsurface protection	Statutory protection of subsurface	No protection of subsurface	Subsurface protection may be needed
Tangible or intangible values	Tangible and intangible values relating to natural features	Tangible and intangible values relating to historic/cultural features	Tangible and intangible values for both natural and cultural features and the landscape as a whole
Balance of natural and cultural values in area management	Cultural or historical values secondary	Natural values secondary	Cultural and natural values integrated

tural values are balanced in the management of the area.

The use of traditional natural parks or cultural heritage site designations can put considerable stress on communities who would like to have their special places recognized and protected from inappropriate development, and bureaucrats who are faced with trying to force-fit park or site proposals into legislative or policy molds that are not really meant for the purpose at

hand.

This is made worse in a situation where Aboriginal communities do not have adequate land tenure to protect these places themselves. On the other hand, governments who have land management responsibilities must answer to many constituencies, including the heritage and environmental lobbies, as well as development and industrial sectors whose main interest is resource extraction, such as

lumbering and mining or hydroelectric development.

Parks, protected areas, protected landscapes, cultural landscapes, and working landscapes are terms that describe a range of places with lesser or greater amounts of human intervention. The term used in any particular case generally relates to the reasons for which the place is “set aside” and how it is used. All of these places have intangible values ascribed to them by both local and nonlocal people and groups—beauty is in the eye of the beholder.

Clashes of values can occur between the intangible values of different cultural groups or between different interest groups—they simply reflect the different values these groups place on the protected area in question. There are various ways of dealing with these differences. Often, in the Canadian situation, protected area planners work for government (federal, provincial, or territorial) and are expected to reflect broad societal values in the regimes established. For example, national parks are set aside “to protect for all time representative natural areas of Canadian significance in a system of national parks, and to encourage public understanding, appreciation, and enjoyment of this natural heritage so as to leave it unimpaired for future generations” (Parks Canada 2001a).

“Most lands have some kind of interest or commitment for uses such as oil and gas development, mining, hydro-electricity, forestry, agriculture and private recreation. Land-use conflicts and jurisdictional issues will have to be resolved in cooperation with the provinces, territories, Aboriginal peoples, and all interested parties including local residents” (Parks Canada

2001b).

Park management plans have to deal with the conflicting values of all such interested parties. Since the mid-1980s in Canada, with a renewed federal government policy on the settling of comprehensive land claims with Aboriginal peoples, management regimes for national parks have evolved considerably. Pressure from Aboriginal peoples for recognition of their cultural, natural, and economic interests in protected areas has meant that the objectives for protected area creation have broadened to include cultural and intangible values, as well as natural values. In some parts of Canada (in the North in particular), limited land entitlements combined with the opportunity for involvement in cooperative protected area management regimes have led some Aboriginal groups to view the establishment of protected areas in a positive light. In such cases, the creation of protected areas provides an expanded area of influence and traditional use for Aboriginal peoples. Of the forty-one national parks and reserves in Canada, more than one-third have advisory boards of some sort, with significant Aboriginal, and in some cases local non-Aboriginal, representation.

However, there are also examples where the concept of a protected area is an alien one to cultural groups who have a holistic view of the landscape and who have difficulty in setting part of the landscape aside and treating it differently from other areas. In a national system of protected area management, a monolithic approach to the management of protected areas will make it difficult to incorporate intangible values into management practices. In fact, the question has been asked, “By creating guidelines and giving

certain areas an international designation, are we adding to the homogenization of landscapes and cultures?" (IUCN 1999: 41).

Values-Based Management/ Knowledge-Based Management

Values-based management has recently become a popular term, particularly in the field of the conservation of cultural heritage. Here, in theory, the evaluation of a protected area or of a cultural resource will help determine the nature of its value, which will in turn be used to determine how it should be managed and what about it should be protected and respected.

Knowledge-based management is a term frequently used to describe a scientifically based management regime. While the values- and knowledge-based management concepts are not identical, neither are they contradictory or mutually exclusive. A merging of these two concepts might go a long way toward dealing appropriately with intangible values from different cultural perspectives.

If we wish to manage protected areas in a way that respects and sustains intangible values, we must do it collaboratively and be conscious of our thought processes and our cultural biases. In addition, often the way to elicit traditional knowledge or values is not at brainstorming sessions in meeting rooms or through scientific analysis. The landscape is the book in which the values are written, and being on and in the land is far more likely to elicit intangible values through experience, reminiscence, and storytelling. How to capture these values in such a way that respects their intangible nature but still allows them to be analyzed and understood and transmitted into management prac-

tices is the challenge. In many cases, the recording of place names and the associated stories can lead toward determining what management regimes or actions would be appropriate. This is because the stories often carry implicit or explicit advice on how people should behave toward the land, the animals, plants, and each other. The landscape is alive with meaning, and to be able to read it and understand it, people must interact with it. Place name studies and oral history projects are an excellent way to begin to articulate the intangible values of a local Aboriginal community related to a protected area, as well as to begin to understand at least one perspective on how the landscape has evolved to become what it is today.

Sustainability is a concept useful in defining objectives for protected area management. We can speak of the sustainability of values, the sustainability of landscape(s), and the sustainability of management practices. One way to examine management practices is to try to determine what needs to be done to ensure the sustainability of intangible values. We should not underestimate the challenge implied by trying to understand change and evolution when it comes to dealing with protected areas and intangible values. We all know that landscapes evolve over time, as do ecosystems and cultural systems. We are beginning to approach an understanding of how landscapes and ecosystems have become what they are today, but our view is limited with regard to understanding how much and what kind of change is desirable or acceptable for the future. In other words, what are the limits of acceptable change? We will need to determine measures of health or sustainability and establish

regular monitoring programs to determine the effects of our management practices.

Conclusion

To sum up, these are some principles to follow to establish management regimes for protected landscapes that deal with intangible values:

- The determination of values and the resulting management decisions must be participatory and involve local people in a significant way.
- A thorough recording of community knowledge, oral histories, and place names is a good way to articulate intangible values.
- A cookie cutter approach cannot be used. Management decisions must flow from an understanding of all of the values of the protected landscape, both tangible and intangible.
- Values that appear to be in conflict must be carefully examined and reconstructed to determine whether there is really a conflict and, if so, exactly what it is.
- Once values are clearly articulated and the appropriate management actions are determined, ways of measuring success and change must be identified and adopted. Monitoring and follow-up are

essential to achieving sustainable protected landscapes.

- It is important to define a moving scale of limits of acceptable change to reflect natural and cultural evolution and changing values.

The management of nonmaterial or intangible values presents many challenges. It requires park agencies to recognize previous, and continuing, associations between people and parks that have been generated through community and family history, personal aspirations, and diverse ways of perceiving the meaning or significance of landscapes.

Much has been said of the need to manage parks not as islands in a sea of development but as part of a patchwork of land tenures and uses (e.g., Nix 1997). Managing and understanding nonmaterial values involves a similar philosophy. The “core” aims of park creation and “nature” conservation must be set within a social and cultural context, and this requires us to understand the dynamic interactions between people and place that are embedded in the very fabric of protected areas. Conservation itself needs to be understood as a culturally defined activity, one that is open to biases that reflect the distribution of power within human societies.

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National Parks as Scientific Benchmark Standards for the Biosphere; Or, How are You Going to Tell How It Used to Be, When There's Nothing Left to See?

How are you going to tell how it used to be,
when there's nothing left to see?

At first, national parks were hard to see because there was so little difference between resource conditions in the parks and in the wild areas around them. Now some parks can be recognized from outer space because humans dominate the land around them so completely. Examples bracket the United States from Olympic National Park on the northwest coast of Washington to Everglades National Park in southeastern Florida. Nevertheless, many national parks are becoming hard to see again because they are small pieces of fragmented landscapes, overrun by invasive alien species, and just as stressed by altered air, water, and soil as the adjacent lands (Grumbine 1990; Vitousek et al. 1997). In the ocean, so-called marine protected areas proclaim "protection" in their titles (e.g., park, refuge, reserve, and sanctuary), but fishing in them is managed virtually the same as it is everywhere else so there are no discernable differences between fish populations in or out of parks (Jackson et al. 2001; Beets and Rogers 2001). Even in the parks, only the ancient hunter-gatherer's strategy of serial depletion based on endless sources of new species and territories sustains ocean fisheries, while exploited populations collapse and ecosystems decay into simplified remnants filled with ghosts (Dayton et al. 1998; Diamond 1997; Jackson et al. 2001). The U.S. National Park System contains special places saved by the American people so that all may experience the nation's heritage—yet even in these most special places unimpaired nature is rapidly disappearing. In this chapter, we will describe potential values of national parks and equivalent protected areas to science and society, discuss forces that threaten those values, and suggest how monitoring ecological vital signs (Figure 1) could help mitigate the effects of those forces.

National parks and equivalent protected areas potentially hold many values for people. An early twentieth-century champion of utilitarian conservation, President Theodore Roosevelt, declared, "There is nothing more practical in the end than the preservation of beauty," upon seeing coastal redwoods for the first time (Morris 2001). Arguably, the most important

value of national parks is to provide human happiness. In a utilitarian sense, the persistence of nature in parks administered to "conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations"



Figure 1. Environmental monitoring, such as collecting hydrology and weather data, is part of the management routine at Everglades National Park, Florida. *National Park Service photo.*

should yield the greatest happiness for the greatest number of people. If adequately protected, national parks also have great potential value for scientific investigations of the biosphere—the life support system of Earth. Protected places can serve as environmental benchmark standards for comparisons with more altered parts of nature, and they can help scientists differentiate anthropogenic from other environmental changes. Parks can be reservoirs of wild genetic diversity and refugia that rebuild populations of endangered species and restore the integrity and resiliency of disarticulated ecosystems. They are special places in which scientists can unravel the mysteries of natural and human history, evolutionary adaptation, ecosystem dynamics, and other natural processes (National Research Council 1992).

Parks provide truly unique opportunities. They combine the power of place with the last, best remnants of nature least dominated by humans. Science is a way of knowing, a process for learning (Moore 1993). Personal experience is among the most powerful and enduring ways for most people to learn. Parks provide places to learn from personal experience, thereby rendering the abstract real. By giving multiple examples of reality, parks connect people to abstract concepts emotionally. Such place-based learning offers multiple stimuli that enhance opportunities for diverse learners, clarifies new insights, and strengthens retention. Parks generate passion for learning, with deep, personal, emotional connections born out of experience, and stimulate curiosity that is the bedrock foundation of science.

National parks can be special places for science only if nature is

treated differently in them than in other places. In the United States, at first people thought they could protect parks by building virtual walls around them (Sellars 1997). Early park managers based their actions on beliefs of what park visitors wanted and how they thought ecosystems functioned (Davis and Halvorson 1996). They believed that physical environmental factors, not biological interactions, largely determined ecosystem structure and that people came to parks to see the forests and wildlife and to catch fish. Since fires burned the forests, predators ate the elk and deer that visitors came to see, and pelicans ate the trout people sought to catch, it seemed clear that park stewardship called for fire suppression and predator control. So to protect the parks, park stewards killed wolves and coyotes, crushed white pelican eggs, and did their best to put out forest fires (Varley and Schullery 1996). Today these actions seem naive at best. These early perceptions changed as scientists discovered the often counterintuitive ways in which ecosystems function. It is now clear that infrequent, extreme natural events, such as hurricanes, hundred-year freezes, and “catastrophic” forest fires, do not destroy ecosystems but are essential to sustain coral reefs, coniferous forests, and other ecosystems (Dayton and Tegner 1984). Ecologists also found that predators, far from eliminating prey populations, were essential for sustaining diverse communities (Paine 1994). Removing predators from ecosystems, either experimentally or accidentally, triggered cascades of unanticipated consequences in parks that threatened the very resources and values that the stewards sought to preserve.

What changed? Knowledge of place changed. Scientific knowledge and understanding of place are the cornerstones of park stewardship. Effective park stewardship depends on continuing improvements of knowledge and understanding of parks from scientific iterations of monitoring and experimentation (management actions) that frame, test, and falsify myriad hypotheses. Only with this improved understanding of ecosystem structure and functioning can park stewards hope to restore the integrity and resilience of impaired parks, to protect nature unimpaired in parks and to mitigate internal and transboundary threats, or to connect people to their heritage with sufficient impact to engender the public commitment needed to preserve parks unimpaired for the enjoyment of future generations. This knowledge of nature begins with curiosity, exploration, and inventories of the world around us that are the hallmarks of science. Static inventories inevitably lead to monitoring to discover, describe, and understand how nature changes in time and space. Monitoring environmental vital signs of parks is the beginning of scientific stewardship that will determine the success or failure of conservation in the twenty-first century and the survival or demise of nature as the Earth's biodiversity is threatened by human domination.

Changing Management Approaches

As cultural constructs existing within the matrix of their time and place, the purposes and values of national parks and protected areas vary from one place to another and have evolved over time. The perception of what jeopardizes those values

has likewise evolved—not only as a consequence of improving scientific knowledge or demonstrably altered circumstances within and surrounding the parks themselves but also because of their evolving context. In the United States, this has been strikingly illustrated by the changes over the past half-century in what are commonly called “threats”—or “stressors” in modern ecosystem vernacular.

During the time when what largely distinguished the classic large western national parks from their landscape matrix was the presence of a recreation infrastructure (i.e., roads, visitor centers, signs, and rangers), those threats were largely identified as the local, particular attributes that interfered with the enjoyment of visitors as they recreated and enjoyed nature on their increasingly civilized terms. As indicated earlier, in the early decades of the twentieth century those might include predators (or poachers) preying on desirable viewing species such as deer, birds consuming catchable fish, or the very absence of infrastructure needed to visit and comfortably enjoy what the parks had to offer.

By the 1950s, those same American parks had begun to differ strikingly from rapidly changing surrounding lands—even those lands as yet undeveloped but dedicated to resource extraction. There was a growing sentiment among conservation writers that national parks should represent some sort of “vignette of primitive America.” This was reflected in a commissioned report by a senior committee of wildlife biologists (Leopold et al. 1963) to the U.S. secretary of the interior. Moreover, the science of the time reflected the assumption that natural, wild ecosystems tended to be homeostatic and thus would persist in

a relatively constant state over time if they were not compromised. Thus, it would be possible, through intelligent, restrained management, to provide park visitors and society with fragments of a wild, American past that provided not only conservation but the romance of history. Interestingly, the unraveling of this paradigm of natural stability, and its replacement by one of dynamism and even periodic catastrophe, was presaged in one of several scientific reports to the U.S. National Park Service as early as 1963 (NRC 1963). Both of these reports notably emphasized the preeminent value of national parks as preserves of wild nature that retained all of its original parts over their value as “pleasuring grounds” for tourist recreation.

The wilderness movement in America, which began with a small group of scientists in the 1930s and culminated in the passage of the Wilderness Act in 1964 (establishing a new, stringent standard of protection on now more than forty million hectares of public lands, including many national parks, in the United States), was a distinctive cultural thread that was ultimately to have profound and continuing interactions with the perceived values of parks and preserves. The founders of this movement — Robert Marshall, Aldo Leopold, and Olaus Murie—were all trained field scientists who had come to recognize that “untrammelled nature” was fast disappearing from our planet (Leopold 1925, 1949; Marshall 1930), and at great cost—they believed—to the human spirit and the web of living things with which we share the planet. Although in their exhortative and popular writings they emphasized the critical importance of large blocks of completely wild lands,

roadless and lacking all mechanized transport, as a sanctuary for the human soul and a place where primitive enjoyment could be pursued, they also believed that the unimpeded interactions of natural ecosystems were of critical scientific value, as well as possessing innate value to and of themselves. There is nothing in the Wilderness Act, however, that acknowledges the possibility of disturbance from outside wilderness that could lead to a compromise or loss of those values.

The scientific reports to the U.S. National Park Service of the 1960s, as well as the changing cultural matrix in which they occurred—which produced Earth Day and far broader (if less personally intimate) interest in nature conservation—ultimately contributed to a significantly greater concern for preserving all “nature” in American national parks. For the first time, this explicitly included nature that did not necessarily offer scenic splendor or recreational opportunities. But the science that supported such conservation was largely autecological and confined within park boundaries. Contemporaneously, values emerging from some of the same springs as the wilderness movement led American parks to seek to eliminate traces of artifice and anthropogenic influence on park landscapes. This has included the removal of structures, the naturalization of camping sites, and regulations to protect fragile features and to reduce crowding and social conflicts in park “backcountry” areas.

The contemporary conservation movement and scientific ecology have interacted in the past two decades to develop a better understanding of and concern for ecosystem-level proper-

ties that often function at scales far greater than park or preserve boundaries. The consequence of this has been that even in the largest and oldest national parks, we now understand that most often the serious ecosystem stressors—the anthropogenic forces that lead to a loss of an untrammelled ecosystem retaining all of its parts—are not so much from tourism and the interaction of park visitors with nature but represent forces operating at regional to global scales (Graber 1983, 1995).

For example, in many of the national parks in the American Southwest, these “Four Horsemen of the Apocalypse” typically include:

- *Insularization and habitat fragmentation.* Land use changes outside park boundaries have led to incomplete home ranges for some animal populations, or populations too small to sustain themselves genetically within a park—resulting in genetic impoverishment or extirpations. It has also led to the invasions of alien plants and animals, sometimes outcompeting native organisms or leading to fundamental changes in ecosystem processes.
- *Atmospheric contamination.* Research on the presence and effects of acid precipitation, ozone, nitrates, and sulfates, in particular, has demonstrated that these can significantly alter the competitive balance within an ecosystem, frequently reducing system productivity and often favoring “weedy” species. Air pollution can also have a significant aesthetic effect on visitor enjoyment in national parks.
- *Loss of native fire regimes.* In xeric western shrublands, woodlands, and forests, fire has often been the principal ecosystem architect.

Intensive research over the past three decades, especially in the national parks, has demonstrated that the frequency, intensity, and extent of fire has been radically altered by fire suppression, changing land use, the loss of customary aboriginal ignitions, the introduction of alien plant species and consequent changes in system flammability, and sometimes the introduction of new sources of ignition, such as automobiles and cigarettes.

- *Climate change.* Rapid changes in seasonal temperatures, in the timing and extent of precipitation, and even in the chemical composition of the atmosphere are expected to induce profound changes in biological communities over much of the planet within this century. As parks and preserves have come to increasingly resemble islands in an alien sea, they will be less able to function as reservoirs of biodiversity when native biota no longer find appropriate environmental niche, and they introduced cosmopolitan species of broad tolerance arrive to compete with them.

A decision of utmost importance will be facing preserve managers, their scientific advisers, and the public who supports parks in the near future: To what extent will parks and preserves be intentionally managed to mitigate against these grand stressors and to protect native biodiversity to the extent feasible? Or will we apply a wildness standard that accepts change and loss in exchange for a minimum of visible anthropogenic intrusion into these last remaining bits of wild nature (Graber 1985, 1995)?

Monitoring: Species or Ecosystems?

Intact ecosystems are more than the

sum of their parts. Processes and forces that bind the parts into a system produce synergies and properties that the individual parts do not possess when simply collected together. Conservation strategies based on a few parts of systems, such as endangered species, may be effective. As a result, conservation strategies can be tested in national parks that protect whole ecosystems, but they cannot be tested in disarticulated, stressed, or fragmented systems or on isolated individual parts of systems.

Although stewardship goals for federal lands are increasingly focused on the status of entire ecosystems rather than individual species (Noss 1993; Franklin 1995; Woodward et al. 1999), management and monitoring are likely to continue to focus on both individual species and more integrative parameters. Woodward et al. (1999) discuss three types of species often included in monitoring efforts: "target species" of social and/or political significance, "bioassay species" that are responsive to particular types of contamination or other stresses, and "indicator species" that shed light on basic ecological processes. Fleishman et al. (2001) review the utility of "umbrella species" in conservation (i.e., species whose protection is intended to extend to a much broader group of species). They conclude that umbrella species mostly pertain to fairly narrow taxonomic bounds (e.g., a conservation strategy based on an umbrella bird species is not likely to protect many butterfly species). Efforts to develop a conservation strategy for forests of the Pacific Northwest illustrate the point. Although the endangered northern spotted owl (*Strix occidentalis caurina*) occupies large home ranges primarily within

old-growth forest, a strategy based on the owl would leave out many key components of biological diversity in the region. Thus, there is a need for a conservation strategy emphasizing a broad array of taxa and habitats (Noss 1993; Franklin 1995). For a variety of political and scientific reasons, monitoring of protected areas may include both high-profile species and basic ecosystem measurements (Woodward et al. 1999). Thus, in addition to the critical role of documenting normal variation of natural systems that are still nearly pristine (Schindler 1987; Noss 1993), monitoring and research in protected areas may help us understand how single species versus ecosystem approaches compare in providing the information needed for stewardship.

Vital Signs Monitoring

The primary applied uses of ecological monitoring are to guide and evaluate stewardship activities, to provide early warnings of abnormal conditions, to identify possible causes of abnormal conditions, and to help frame research questions to resolve conservation issues (Davis 1993). In places such as Channel Islands National Park in California, monitoring demographics of selected species and related physical environmental factors as surrogates for the vital functions of ecosystems over twenty years has helped

- control and eliminate invasive alien species;
- detect and mitigate effects of chemical pollution;
- recognize and change unsustainable uses, including fishery management policies; and
- develop and evaluate population and ecosystem restoration methods.

ologies.

Let's consider some specific examples of applications of environmental vital signs monitoring information to park stewardship issues.

Alien species constitute an ever-increasing threat to the park. Stewards of the California Channel Islands have used an environmental "Vital Signs" monitoring program to direct and evaluate removal of several alien species, including burros on San Miguel Island, European hares on Santa Barbara Island, feral pigs on Santa Rosa Island, and South African iceplant on Anacapa Island. Before instituting monitoring programs, eradication efforts were sporadic and ineffective. Numerous efforts were made to remove feral rabbits from Santa Barbara Island in the 1950s and 1960s by hunting and spreading poison bait, but none was successful until the Vital Signs program provided specific information about the effectiveness of various population control methods (trapping vs. hunting), rabbit population trends, and reliable cost and time estimates for complete eradication. By reducing the uncertainty of success through monitoring, the eradication program gained enough support to sustain the effort long enough to succeed.

Even before the Vital Signs program began, monitoring wildlife populations in the park provided an early warning of regional pollution with global consequences. Monitoring reproduction and recruitment in California brown pelican rookeries on Anacapa Island identified pesticide (DDT) pollution in the Southern California Bight and provided sufficient time to ban DDT and restore pelican productivity (Anderson and Gress 1983). Today, the park's Vital

Signs program indicates clearly that DDT is still a problem in coastal ecosystems, as evidenced in continuing reproductive difficulties experienced by peregrine falcons and bald eagles (Detrich and Garcelon 1986). The Vital Signs program also indicates that progress is being made, which thereby encourages people (society) to continue abatement activities.

Vital Signs programs also help decide when human intervention in park ecosystem dynamics is appropriate, such as when to suppress forest fires or let them burn. The Channel Islands National Park rocky intertidal monitoring protocol was modified and applied to Cabrillo National Monument, in San Diego, California, in 1989. In 1992, when the San Diego municipal sewage treatment effluent discharge pipe broke and dumped sixteen billion gallons of treated effluent into the sea less than a kilometer from the monument's monitored tide pools over a two-month period, many people were rightfully concerned about marine life in the tide pools and adjacent kelp forests (Tegner et al. 1995). Objective information from prespill monitoring established clearly that the effluent had no immediate negative effect on the fifteen vital sign taxa monitored. Closing the tide pool area to visitation during those two months, in order to protect visitors from potential health hazards in the effluent, actually relieved trampling and other visitor-related disturbances, which was reflected by increased abundance in most vital sign taxa.

The Vital Signs program in this case saved unnecessary expensive litigation that often occurs without actual knowledge and with a belief that damage is self-evident in such situations.

The two-month closure associated with the effluent spill constituted a large environmental experiment unlikely to be conducted intentionally. Since the Vital Signs program was in place, it was possible to measure the effects of the event and separate the longer-term trends in populations associated with regional environmental events, such as El Niño. For example, the chronic loss of California mussels (*Mytilus californicus*) and feather boa kelp (*Egregia menziesii*) that had been recorded for three years before the effluent spill continued at the same rate during and after the spill, while ground cover of ephemeral algae and sea grass (*Phyllospadix* spp.) increased dramatically (Engle and Davis 2001).

Many fisheries are managed and evaluated largely on the basis of fishery-dependent landings data that may not be related to changes in fished populations. Fishery-independent monitoring provides essential corroborative information for fishery managers (Botsford et al. 1997). Serial depletion of five species of abalone (*Haliotis* spp.) and then a sea urchin (*Strongylocentrotus franciscanus*) to support a commercial diving fleet was obscured by ambiguous landings data in southern California before monitoring data were available (Dugan and Davis 1993). As a result, fishing exhausted abalone populations before fishery management policies could be changed and drove at least one species to the verge of extinction (Davis et al. 1996).

Political systems are frequently frozen into inaction by uncertainty (Wurman 1990). Reliable fishery-independent data from Vital Signs allowed the political process to work by reducing uncertainty regarding

abalone population status. The California Fish and Game Commission and the state legislature closed five abalone fisheries to prevent loss of critical brood stock and to facilitate and reduce the costs of rebuilding depleted populations statewide only after Vital Signs data confirmed imminent abalone population collapses—collapses that were implied by declining fishery landings but contested by fishing interests.

Vital Signs methodologies are currently being used to test a variety of different abalone population restoration techniques at the California Channel Islands (Davis 2000). Ecological monitoring also provided early warning of a black abalone (*H. cracherodii*) population collapse (Richards and Davis 1995). The ultimate population collapse was apparently caused by infectious disease in small, dense, but fragmented populations. Monitoring provided sufficient information, early enough, to protect disease-resistant individuals from fishery harvest and to ensure survival of another generation.

The Channel Islands National Park Vital Signs program has become a prototype for many other national parks and other agencies, and it catalyzed a national Vital Signs program for the U.S. National Park System. This approach has been used successfully in a wide variety of ecological settings with many Delphi experts, including deserts (Organ Pipe Cactus National Park and Lake Mead National Recreation Area), mountains (Great Basin, Lassen Volcanic, and North Cascades national parks), and the New England coast (Acadia National Park). Other U.S. national park units emulating the Channel Islands model include Virgin Islands

(U.S. Virgin Islands), Dry Tortugas (Florida), Denali (Alaska), Great Smoky Mountains (Tennessee–North Carolina), Shenandoah (Virginia), Olympic (Washington), a cluster of small prairie parks in the Midwest, and a cluster of parks on the Colorado Plateau. Based on the experience gained in prototype park programs, the U.S. National Park Service plans to implement Vital Signs programs in

32 networks covering 270 national park system areas with significant natural resources. Only with the information acquired by Vital Signs programs can national parks be adequately understood, restored, maintained, and protected so that current and future generations can enjoy their wonders, receive their inspiration, and reap the values of their unimpaired ecosystems.

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Aesthetic Values and Protected Areas: A Story of Symbol Preservation

No place is a place until it has had a poet.

—Wallace Stegner

Stay on this good fire-mountain and spend the night among the stars. Watch their glorious bloom until the dawn, and get one more baptism of light. Then, with fresh heart, go down to your work, and whatever your fate, under whatever ignorance or knowledge you may afterward chance to suffer, you will remember these fine, wild views, and look back with joy to your wanderings in the blessed old Yellowstone Wonderland.

—John Muir

A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.

—Aldo Leopold



There seems to be agreement that aesthetic factors have been of basic importance in the historical processes of land protection. These factors have had a decisive influence on the selection process itself and subsequently have oriented criteria for management. In the words of Múgica and De Lucio (1996: 229): “Among the traditional reasons for protecting natural areas, landscape features have undoubtedly played a major role. Landscape evokes deep emotions and strong attitudes towards conservation.” Perception-based criteria became so dominant during the initial stages of protection that, in many cases, aesthetic appreciation came to be considered equivalent to the existence of conservation-worthy values, so that places considered aesthetically unattractive were understood as valueless areas not worthy of protection (Múgica and De Lucio 1996). In some cases, even, the social pressure of aesthetics has become so strong as to be included in self-justifying destructive behavior. As Araújo (1996: 230) says, “Nature presents us with spectacles that we often deny ourselves when we cut out that which is natural, not without first devaluing the loss by minimizing the aesthetic value of what we see.”

Because of the importance assigned to them in many countries, aesthetic values have been reflected in federal laws and other legal instruments for the protection of nature, though their

influence has been reduced in more recent times. Spain, for instance, is an example of the chronological evolution of this phenomenon. It was one of the first countries to establish national

parks, with two areas legally declared by 1918. The specific law of 1916 defines national parks as “those exceptionally picturesque places or sites.” Similar words can be found in prominent positions in all the laws, orders, and decrees passed between 1920 and 1960. On the other hand, the 1975 law, the last one signed by General Francisco Franco, mentions the beauty of the landscapes in the last place of the list of reasons for declaring protected areas. Current legislation, the law of 1989, partially modified in 1997, endorses the establishment of a national park for each one of the country’s most representative ecosystems and defines national parks as “natural areas of high ecological and cultural value” that are designated as such because of “the beauty of their landscapes” and “the representativeness of their ecosystems.” Seemingly, aesthetics returns to the position of greatest importance, but the context is now different. Ecological representativeness is systematically considered in selecting and planning new areas.

At a global level, during the 1970s and 1980s, a certain conceptual confusion arises, even in countries where protected areas were first created, such as the United States. This is due to the coincidence of two factors: the great geographical expansion and increasing number of protected areas (and diverse processes of local adaptation) and the “ecologization” of scientific thought. The de-emphasis of aesthetics seems to derive from its supposed role in stimulating over-visitation to the areas. This is in contrast to the much stricter preservation theoretically guaranteed by the ecological approach. As Ackerman (1989: 40) noted with reference to America, “The national park idea has moved away

from its utilitarian, recreational beginnings, but its philosophical foundations remain shaky. If ... we seem to stray from the goals of naturalness and conservation of biological wholeness, it is because we are still torn by the two powerful and opposing drives of the Park Service mandate—to use and yet preserve.”

The Debate

Internationally, the supposedly more scientific criterion of representativeness seems to have prevailed. Protected areas are now selected and managed from an ecological point of view that assigns greatest value to protecting the biological diversity of regions or countries. No doubt this change could be interpreted from the standpoint of aesthetics, as a sort of “maturity” in which perception is modulated by a larger number of other factors and abstractions, including the awareness of belonging to a state. In any event, it is a fact that, thanks to the appreciation born from deeper knowledge, previously unappreciated landscapes, such as dunes, steppes, or scrubs, have become objects of protection under categories that consider both their value in ecosystem protection and their emotional connection with the observer. As Crespo (1992) verified, landscape perception parameters can be successfully used to contrast (and confirm) ecosystem evaluations based on ecological parameters.

Nevertheless, little by little, without explicitly giving up aesthetic considerations, the conservation objectives of protected area systems have focused primarily on representation of ecological diversity. Categories of protected areas have multiplied and diversified around the world, but, save for limited, older exceptions, they all tend to

focus on biological diversity and the relations between the components of such diversity. The human species is considered, in many cases, an integral part of the system, but always in an operational sense, and not as an external observer, capable of perceiving and of making decisions based on such perception.

In spite of the powerful influence that pure attraction continues to exert, there is great reluctance today to publicly defend the protection of an area on aesthetic grounds. As Kimber (1999: 68) puts it:

[T]hese expressions of value, emotion and delight do crop up occasionally in even the most sober and hard-headed gatherings, but they register as little more than road bumps. They lurk on the periphery of the discussion. The communal response is essentially, "Well, yes, that's all very nice but now let's get back to business." And business is the reductionist task of asking science to tell us how little land we need to set aside to preserve existing native species and communities.

This phenomenon has become evident enough for the World Commission for Protected Areas ([WCPA] 2001) to take it up and state in its Web site: "At the international level there has been a reluctance to make explicit, and promote the management of protected areas for, non-material values. This is due, perhaps, to growing globalization of the western way of looking at the world that attaches singular importance to the scientific and technical, at the expense of the human, cultural, and spiritual."

Conscious efforts continue, nevertheless, to reverse this trend and vindi-

cate the real importance of the far-reaching values of landscape. Again, Kimber (1999: 68) shares this point of view in an illustrative way when he says, "[M]y sense is that what matters far more than any wonder drug science may yet discover in the jungles of Borneo are those aesthetic and spiritual values we choose to exclude from public debate." On the other hand, expert voices endure in the realms of artistic analysis that continue to advocate an aesthetic approach to natural areas. Such is the case of Alonso (1988: 8) when she says:

We recognize the limits of perception, but the fact that it has limits does not mean that it is not the best tool we have available. We are well qualified to correctly perceive structural and formal relations, and even to know intuitively and to find the underlying order in the seeming chaos of natural forms. Consequently, I have considered cultivating perception, and basing the study of characters upon it, an adequate approach, and a correct starting point, to take on the study of natural areas.

What, then, is happening? Why have aesthetic values moved from primary to marginal importance, and then back toward primary importance once again? What does it mean today to speak of aesthetic values, to use them in connection with protected areas to which society entrusts more and more complex functions, increasingly linked to bioregional planning? In what follows, we intend to approach these questions, starting from a geohistoric review of the concept of landscape aesthetics and its connections to protected area theory.

The Beginnings

It appears reasonable to suppose that the earliest form of conscious perception of a given portion of territory (thus for the first time turned into "landscape") was probably built on the abstraction born from shared knowledge of different environments with their differing climatic, geomorphological, and ecological elements. Such knowledge would have been very important to the everyday survival of a still-nomadic human group in an unpredictable environment. Bernáldez (1981: vii) expresses it this way:

Man and his predecessors have been immersed for thousands of years in the flow of information which landscape is. We should not wonder at the presence of numerous adaptive responses. Among them, the emotional, sentimental aspects of landscape should be recognized. Are we aware of the importance of the reactions we call "aesthetic," of their adaptive background, of the role they played in survival?

Arsuaga (1999) is probably also right when he links the origin of such emotional responses to the enormous analytical capacity of the human brain and to the subsequent "humanization" of elements of the environment and of the relations between them, which was already present in prehistoric times. The permanent attention to the movements, facial expressions, and other signals coming from the other members of human society probably resulted in abstractions that led to the assignment of "personalities," of souls, to elements of nature. Geomorphic and topographical characteristics and atmospheric dynamics

were interpreted to have human qualities. High cliffs and storm clouds started sending out the same menacing message as a person standing up straight, arms in the air, while the calm mouths of rivers spoke of loving welcome and pleasure. This peculiar way of treating nonhuman entities as human, and involving them in stories, served as a useful mechanism to understand natural phenomena but also, and above all, as a vehicle to create active sets, perceived systems, geographies, and landscapes. Mountains and other formations (frequently, and not by chance, protected) that bear names of human characters are still plentiful today.

Certain kinds and combinations of these mental constructs were especially effective in giving impressions of safety, abundance, or well-being. They began to be transmitted and embellished through generations, and they turned into cultural artifacts, evocative myths. And once primal needs were satisfied, the impulse continued to protect those areas that exhibited these qualities symbolic of welfare. At the same time, of course, other combinations that transmitted impressions of sterility, helplessness, or aggression were consolidated as inhospitable landscapes from which it was wise to stay away. This kind of process must have happened in similar ways in different bioclimatic zones of the world, giving birth to the different aesthetic conceptions that would much later confront each other. Consequently, these twin perceptual processes, generated in different territories by human communities adapted to them, would have resulted in equivalent but divergent systems of values. These value systems were then reflected in the criteria used for the identification

and prioritization of protected areas.

The inclination to protect certain kinds of areas would thus be a result of the building of the concept of landscape itself. Throughout modern and contemporary history, this inclination has resulted in the protection of less subtle landscapes that are readily appreciated, such as mountain areas with plentiful vegetation and different varieties of still and running water (Figure 1), that respond to what has been called the “Alpine Model” (Múgica and De Lucio 1996). This line of thought has been called the “eco-ethological theory of landscape aesthetics” by Bernáldez (1981: 246), with the statement that “aesthetic preferences for (or rejection of) certain landscapes appear to be instinctive reactions to the symbolic character of certain elements of the scene.”

Obviously, the idea itself of symbol-

ic character can vary according to each individual or collective “user” of the landscape and hence evolve over time with divergent results. Thus, today’s research on the aesthetic preferences of visitors to protected areas confirms that the degree of direct experience and intellectual knowledge of an area clearly influences the appreciation of its aesthetic values. De Lucio and Múgica (1994: 156) arrived at the empirical conclusion that “visitors to the national parks also differ in their landscape preferences depending on their attitudes and environmental behaviour. The more casual and generalist visitors more often choose the prototype landscape, rejecting those of the parks that have other characteristics. Certain more specialised groups tend to choose more often the landscape of the park that they are in, such as wild challenging landscapes. The



Figure 1. The “Alpine Model”: easily decipherable landscapes have been a frequent object of protection in modern history. Big South Fork National River and Recreation Area, Tennessee. *National Park Service photo.*

subjects with more experience of the park also choose landscapes with a lower degree of legibility.”

The Early and Middle Ages

The psychological process underlying the origin of aesthetics seems to be initially connected to the phenomenon of religious experience. The first unmistakably funerary behaviors discovered by current archaeology (Arsuaga 1999) are connected to the careful choosing of a place. Later on, the great civilizations of antiquity (e.g., the Mayas in Tikal; the Aztecs in Tenochtitlán; the Quechuas, or Incas, in Machu Picchu; or the Egyptians in the Valley of the Kings) repeatedly revealed the linkage between the establishment of important religious centers and the perception and appreciation of “promising” landscapes. In the origin itself of Western civilization, the Acropolis of Athens embodies the paradigm of synergy between topographic site and human action to establish a sense of place, of identification, over time creating the need for preservation and protection. Bloomer and Moore (1979: 120) recognize it in their analysis, when they state, “Among all places in the world, this is with no doubt the one that makes any western man tremble the most.... Let us begin saying that the site itself is magnificent to start with.... The buildings of the Acropolis continue to serve as models of exquisite care.”

This synergy of place, siting, and architecture was passed down to the Middle Ages in Europe, but greater importance was progressively acquired by the architectural component, which, from a Christian point of view, is justified because the human being is seen as God’s obedient agent. Sacred buildings were also uncon-

sciously, but carefully, separated from their theoretically optimum locations to avoid trampling on (and competing with) places that were frequently sacred (i.e., geomorphologically, hence aesthetically powerful) in ancient pagan traditions. Temples would then serve as specific instruments of their day. Placed within a time frame that surpassed them, they would act as dissuasive peripheral attractors, comparable in this sense to present-day protected area visitor centers. In some coastal regions of western Europe, for example, a sort of proportion can be detected between the physical and artistic magnitude of the churches, and the ancestral “importance” of the cape landforms as sacred sites, which inspired people with awe based on the force of sea and wind against the rocks. The paradigmatic example is the cathedral of Saint James, in Compostela, Spain, the westernmost goal for millions of European pilgrims throughout the centuries in spite of its not being located exactly on the Cape of Fisterra (literally, “the end of the world”), but somewhat withdrawn, at a distance from it, which is also a sign of its more than geographical value. In any case, what greater protection for a site can be found than that emanating from the concentrated presence of God in it?

Modern Times

Nevertheless, the clearest reference to the “higher powers” is paradoxically furnished at the turning point when medieval theocracy is left behind, and the Modern Age is consolidated. Again, Bernáldez (1981: 181) illustrates this accurately when he states that “the awe, the mixture of terror and exultation, that was previously reserved for God, was transferred dur-

ing the seventeenth century to a wider cosmos ... and to its great objects: mountains, oceans, deserts. The aesthetics of Infinity was founded by travelers who felt amazed, but at the same time captivated, by infinite space.”

The age of the great European explorations and colonization began. The expeditions took place largely because of their value in geopolitical terms where the acquisition of large virgin territories served as testimonies to the power of the State. Nevertheless, the scientific component (and through it the aesthetic questions that filtered into the intellectual discourse) played a remarkable role during this period of expansion. This happened, for instance, through the influence of figures as outstanding as Alexander von Humboldt, author and spreader of the concept of the “scenes of Nature.” In a farewell letter written before leaving for his famous journey and quoted, among others, by Botting (1995: 57), Humboldt confesses his great philosophical (and aesthetical) goal: “I will collect plants and fossils, and will carry out astronomical observations. But this is not the main objective of my expedition. I will try to discover how the forces of Nature interact among each other, and how the geographic environment influences animal and plant life. In other words, I shall search for the unity of Nature.”

The end result of this fundamentally transformative expansion was the generally violent meeting of civilizations, of cultures, and of aesthetics. The tug-of-war began that later affected something as crucial as the selection of the lands to be preserved (or to be kept protected as they were by the first residents); in other words, the fight to get symbols of one’s own tradition included in the small final set

considered worthy of preservation as shared heritage. Even though the initial encounters between civilizations took place in a wide range of settings, over time colonization focused basically on places that confirm the validity of the eco-ethological theory of landscape aesthetics—that is, familiar environments. An accurate description of the process is offered by Crosby (1988: 3–7): “European emigrants and their descendants are all over the place.... They also compose the great majority in the populations of what I shall call the Neo-Europes.... But what was the nature of the Neo-European pull? The attractions were many, of course.... But underlying them all ... were factors perhaps best described as biogeographical.”

The so-called Neo-Europes are geographically scattered but occupy similar latitudes. They therefore enjoy similar, basically temperate, climates and offer opportunities for the existence of vicarious species and ecosystems, and hence the development of twin “families” of observed landscapes. Obvious cases appear, for example, through comparison of Norway, Germany, or Spain with the corresponding regions of Chile or New Zealand. Consequently, destinations chosen for reasons of landscape similarity regenerate the same kind of emotional links to the sites, the same kind of what has been called “sense of place,” and hence parallel paths in natural area preservation concepts. European expansion strongly modified and unified people’s territorial perception, and preservation priorities, all over the world. This line of protection lasted as long as the nineteenth-century concepts of state and international relations held. The process of general review of Western

precepts initiated after World War II, and which deepened from the 1960s on, has also influenced the selection and management of protected areas. A shift took place, which was in tune with what the new society demanded from protected areas, and the need to assert new values. Actually, it has always been that way, both in the periods during which aesthetic reasons were embedded in other arguments and in those when they have prevailed explicitly. This is clearly perceived by Smith (2000: 233) in his historical review of developments in the United States, when he observes that

parks are also one of the most honest reflections of our culture ... of what each generation of Americans has considered important. As sites are added to the system, as chaotic and unpredictable as the process may seem, they are reflections of the people's will, an indication of what the majority considers significant at the moment of the park's establishment.... Our natural parks were primarily established for reasons that cannot be considered ecological. Everglades ... was our first national park that did not contain the tallest trees, the deepest canyons, the highest waterfalls.... This tendency has been characterized by environmental historian Alfred Runte (1982) as 'monumentalism,' putting extraordinary displays of nature inside national park boundaries. These boundaries were almost never designed to follow ecological or topographical features.... Significant components, then, that were absolutely critical to the environments in which these features existed, were left outside the park.

Smith's discourse reflects the rational, scientific argument dominant

in the 1980s. It was then a widespread opinion, even though, in many parts of the world, it still coexisted with a strong consideration of scenic beauty as a criterion for selecting protected areas. At the international level, the importance of both perspectives was clarified and balanced by the establishment of a standard set of definitions for comparable categories of protected areas, and the later fine-tuning of these (IUCN 1994), in correspondence with management objectives. The functional focus of territories is thus stressed, all of which is consistent with the modern aesthetic trend of eclectic but harmonious integration.

Too little time has gone by for the eco-ethological principle to have changed radically. What has changed are the elements of landscape and the reality they symbolize. Aesthetic preferences operate today as they did during the Stone Age, but now they relate to much more sophisticated objects. Thus, the messages of security or comfort, those that can produce aesthetic pleasure, include institutional components, as well as other complex abstractions. And this modern complexity is, of course, applicable to the selection, planning, and management of protected areas as well. Modern societies demand reciprocal linkages between their protected areas and the regions of which they are a part. These linkages facilitate effective and participative management, local inputs into regional planning, and transboundary cooperation. In short, societies today seek protected areas that serve as an important input toward sustainability that ensures both services and values, not only in terms of a continuous stream of material benefits, but also in terms of local pride, and identification with the region. Actually, integrative

sustainability, as an exponent of ecological and social health, is today the ultimate object of protection.

In terms of regional planning, this implies the preservation of untouched core areas around which gradients of human presence are established, interconnected by corridors, the whole matrix being managed with conservation-consistent criteria. Under this concept, protected area systems can be designed to surpass mere ecological representativeness and take into account other properties such as adaptability and connectivity. Awe, onomatopoeic awe, continues to influence our relationship with the core areas, but the sensation of functional health around them, linked with the protection of ecosystem processes, can also be interpreted in new aesthetic terms. The mutual protection agreement between people and landscape is being re-edited in a wider context. As Araújo says (1996: 249), "If Nature has nourished Culture, the time seems to have come for reciprocity, for Culture to begin nourishing Nature: that is the essence of ecological thought."

The signals sent out by the different cultural sources contribute to the new definition of the symbols to be preserved. This new definition corresponds to a landscape understood wholly, as an integration of stage, scenery, and resource. It is not easy to reach an agreement on this definition, but new proposals are beginning to be articulated, with ideas capable of bringing together both scientific and emotional inputs. According to Kimber (1999: 69), "The questions we need to ask are not just how much land do we need ... to preserve representative biotic communities, but how much do we need to leave alone ... if

we want to keep imagination alive, if we want to remain fully human." Perhaps, then, one of the important principles on which the agreement for the new protection should be built is recognition of the integral nature of the realities to be managed. Aesthetics, once identified with areas locked up under a glass bell, pleads today to escape through the cracks. Here, too, there is design: Beauty results from optimizing use (including its absence, when fitting). The urgent need to generalize this perspective is acutely pointed out by Berger (1999: 112): "Yellowstone is a British Museum of natural anomalies. The Tetons are composed as *The Last Supper*. The Grand Canyon is water's consummate sculpture. Our parks provide essentially a ceremonial experience, through which an informed public passes properly awed, and exiled from its own feelings. Park custodians have the same weakness as the rest of us: they love to name, to isolate, to point out, and to enshrine."

The proper common ground, then, for a balanced approach is that of an enriched sense of place, the concept capable of linking aesthetics, culture, peace, and survival through sustainable protection of natural areas. In the words of Lewis (1996: 21, 24, 27): "Identifying and protecting critical natural and cultural resources is the crux ... to [sic] sustainability. These resources are not only the basis of our life-support system and our economic well-being, but are also the basis for quality of life, sense of place, diversity, and options of choice.... Too often ... survival is not regarded as dependent on the land remaining intact, both ecologically and aesthetically."

Finally, none of this can be achieved without social understand-

ing and participation. It is people who have defined the role of aesthetics in landscape protection since the beginning, and this will be even more the case in the future. As Rollins (1993:1, 3) puts it:

Residents of a community have thoughts and ideas about what makes their surroundings and community visually important and attractive.... Citizens should be asked to prioritize each visual resource they identify. This will help in identifying sites; [and in] establish[ing] a ranking or priority list ... of special or distinctive views—[namely,] those that char-

acteristically contribute to the visual quality of the community and area and provide a sense of place and image.

Human beings will continue to evolve together with the landscape they inhabit, use, modify, and admire. We will continue to respond to the symbolic power of scenic elements, whatever those happen to be at any given time. Protecting areas today, and tomorrow, will mean ensuring the continuity of what is essential, materially and emotionally, in that relationship. It will always be a story of preserving the sense of place.

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Battling Religions in Parks and Forest Reserves: Facing Religion in Conflicts over Protected Places

Public servants responsible for protected areas face many pressures. Caught in battles between representatives of competing and often incompatible interests, land managers understandably strive for clear guidelines to simplify decision-making. So do jurists dragged in afterward. In the United States, the Forest Service's "multiple use" mandates to facilitate commodity extraction and recreation while maintaining ecosystem integrity, as well as the National Park Service's mission to preserve native ecosystems for future generations, provide benchmarks for decision-making. Calls for cost-benefit analysis or for the "best available science" to shape decisions also reflect a desire to find solid ground for land-use or legal decisions. The last thing those responsible for protected areas may want is to find themselves wedged between competing and incompatible *religious* claims over what constitutes proper behavior there. Their jobs are already difficult enough, they might justifiably feel, and few of them are equipped to deal with the religious dimensions of the conflicts over which they must preside.

There is no escaping religion, however, which enters into such conflicts whenever people perceive places to be sacred or believe that sacred values are at stake in place-based behavior. This is, arguably, most of the time. As religion scholar David Chidester asserts, what people hold to be sacred has to do with experiences of "ultimate meaning and transcendent power" (Chidester 1987: 4). We would add to this definition of sacredness experiences of *transformative power*, to underscore that an encounter with something holy is not always about something otherworldly and to remind that transformational religious experiences often take place in natural places such as mountains, forests, deserts, and wildernesses. This has certainly been true for America's aboriginal inhabitants and many of their

contemporary progeny. But it is also true for many European Americans, for whom perceptions of the sublime in nature, often influenced by Jewish and Christian sources and diverse streams of European and American Romanticism, are also deeply rooted.

Today, nature-based spiritualities seem as strong as ever in America. Although great diversity exists, nature religion practitioners speak in kindred ways of belonging to, and feeling connected within, a sacred, natural world (Taylor 2001a, 2001b). We should not, therefore, be surprised by calls to protect the places where people find spiritual meaning, nor should we be surprised by hostility or indifference to such calls by those who do not share such spiritual perceptions.

Some of the difficulties that differing spiritual perceptions present to

those attempting to resolve land disputes will be illustrated by examining battles over the construction of telescopes on a mountain in Arizona, logging in Minnesota, and rock-climbing in Wyoming. These cases provide common ground for summarizing the ways governmental officials respond to land conflicts and their religious dimensions and for suggesting which approaches are most likely to protect both ecological and cultural diversity.

The Battle for Mount Graham

Mount Graham, *Dzil nchaa si an* to the region's Apache Indians, is located in the Coronado National Forest of southeastern Arizona. Many Apache consider it sacred: as a place to procure medicinal plants, a burial grounds for their medicine people, a pilgrimage and ceremonial site, and the home of spiritual beings known as *Gaahn*, Lightning People or Crown Dancers, to whom prayers are offered for life-giving water (Basso 1992).

A fierce conflict erupted over Mount Graham in the mid-1980s, when members of the San Carlos Apache initiated a campaign to halt the construction of the Mount Graham International Observatory. An international group of researchers led by University of Arizona astronomers envisioned a complex of fifteen advanced-technology telescopes, including one sponsored by the Vatican Observatory. Apache medicine man Franklin Stanley characterized the telescopes as a desecration that would block his people's prayers from traveling to the heavens via Mount Graham. He considered the project to be a form of cultural genocide: "The mountain is holy," he asserted. "If you take Mt. Graham from us, you will take our culture....

[Desecrating] Mt. Graham ... is like cutting off an arm or a leg of the Apache people" (in Taylor 1995: 146).

Environmental activists helped form the Apache Survival Coalition, subsequently filing lawsuits and mounting a public relations offensive. Many of these environmentalists, and the coalition's most radical participants, were members of the radical environmental Earth First! movement, which asserts that all life forms have an intrinsic value, a right to exist, even when they are not obviously useful to humans. These activists shared Franklin's belief that the mountain was sacred, although they seemed to understand this differently. Relying on a relatively new theory, island biogeography, which endeavors to explain why unique flora and fauna tends to evolve on islands, they contended that Mount Graham's isolation by the surrounding desert made it much like an island, and they complained that the telescopes might well destroy this unique and fragile "sacred island ecosystem" (Taylor 1995: 119).

Consequently, the environmental radicals, animated by such spiritual perceptions, tried to thwart the construction through "direct action," initiating illegal road blockades on the mountain, and through rowdy invasions of university offices. Never apprehended were activist saboteurs who stole or destroyed equipment intended for the scopes. At some of the protests, Indians from the region (and a number of American Indian Movement activists known in the United States for their militant defense of Native American interests since the 1960s) joined the direct action resistance.

It was difficult to build coalitions of

resistance, however. Even though they shared a conviction that Mount Graham was sacred, there were disagreements over what this meant, and corresponding disputes arose regarding what constituted appropriate, venerating behavior. Disputes erupted between American Indian Movement members and some radical environmentalists—for example, during strategy sessions on Mount Graham. These activists, despite their desire to mutually defend Mount Graham, could not all agree about whether it was permissible to consume alcohol or engage in sweat lodge ceremonies borrowed from Native American cultures (Taylor 1997).

Despite internal disagreements, the coalition's resistance put the university and the Vatican Observatory on the defensive. The university responded by highlighting the divisions within the Apache communities, arguing that not all of them considered the mountain sacred and that some of those who did believed that the telescopes could be constructed in a way that would be compatible with their religion. The university employed anthropologists and public relations firms to help it make its case.

The Vatican Observatory's astronomers faced a special conundrum. They would either have to withdraw from the project or reject claims they were promoting cultural genocide. The observatory's response was led by two Jesuits, George V. Coyne, the director, and Charles W. Polzer, curator of ethnohistory at the Arizona State Museum in Tucson, Arizona. Both stated that they respected Native American religion and acknowledged that some Apache consider the mountain to be sacred. But they argued there was no "credible evidence" from

"authentic Apache" proving the telescopes would violate Apache religious freedom. And Coyne and Polzer regularly spoke in ways revealing the worldview differences underlying the dispute. They asserted, for example, that because no shrines had been found on the mountain, that it could not have been an important ceremonial site, and they concluded as a result that Apache religious practice must not be dependent on access to the mountain or precluded by telescopes upon it.

Moreover, both Coyne and Polzer expressed antipathy to the religious perceptions animating their opponents. Coyne's comments were especially noteworthy. Although he once stated, "We wish ... to preserve the sacred character of Mt. Graham by assuring that ... the Observatory will not contribute to the degradation of the mountain," he declared on another occasion that neither the Earth nor non-human life can be sacred because, unlike human beings, neither have souls or are eternal. But his most ardent opponents viewed all life as intrinsically valuable and Mount Graham as sacred. Coyne knew this and urged his religious peers to recognize that his opponents were promoting an environmentalism and pagan religion that is pernicious and "must be suppressed with all the force that we can muster." For Coyne, the sacred is beyond this world and the Vatican's telescope is part of an otherworldly religious mission to help humans to "know where ... civilization came from" and to find God, or at least to deepen human understanding of God's creation and character. For Coyne, the proposed observatories were also justifiable because the evangelical mission of the Church could be

enhanced through the sub-millimeter radio frequency technology being built on Mount Graham. It might enable earthly Christians to communicate and evangelize extraterrestrials (Taylor 1995: 126).

This brief case study (for details, see Taylor 1995) reveals that differences regarding where the sacred is located—above the world somewhere, or specifically here or there on Earth—can lead to irreconcilable disagreements over what constitutes one's religious obligations here (or there) and now. For the present purpose, we should note that the Forest Service strongly supported the telescope project, and in most ways so did the courts that took up the environmental and religious liberty-based lawsuits opposing it, sometimes aided by timely exemptions to existing environmental laws provided by the U.S. Congress. By 2002, the first three of the originally envisioned 15 telescopes were completed (Figures 1 and 2), but the resistance had succeeded in paring signifi-

cantly the number of planned telescopes.

Establishing Green Religion

In October 1999, an association of loggers filed a civil lawsuit, *Associated Contract Loggers v. United States Forest Service*. Ironically, the lawsuit was filed not just against the Forest Service but also against two environmental groups who had regularly filed lawsuits against the Forest Service in their efforts to prevent logging. The plaintiffs alleged that the environmentalists were inspired by “deep ecology religion” that, like Native American religions and various forms of Paganism, considers nature sacred and environmental destruction a desecrating act. It moreover contended that these environmentalists, with the complicity of the Forest Service, had violated the First Amendment of the United States Constitution and its establishment clause, which enjoins the government from “establishing” (privileging and supporting) one reli-



Figure 1. An aerial view of the telescope complex on Mount Graham, July 1999. Photo by Rick Teachout courtesy of Large Binocular Telescope Project.



Figure 2. An aerial view of the LBT (Large Binocular Telescope) enclosure erected on Mount Graham during December 1999. As of April 2004, construction was continuing on the telescope itself. *Photo by Stephen Criswell courtesy of Large Binocular Telescope Project.*

gion over another. The logger plaintiffs claimed that the Forest Service and the defendant environmentalists had privileged deep ecology religion through management decisions reducing logging, while insisting that their own concern was to overturn government-supported religion, not to suppress any particular religion.

The environmentalist defendants and their supporters (including the environmental activist Julia Butterfly Hill and leaders of various deep ecology institutes) responded that deep ecology was not a religion but a philosophy or, alternately, that they were not motivated by deep ecology religion. The defendants also argued that even if they were so motivated, the First Amendment guarantees the right of citizens to petition the government. The defendant environmentalists also

claimed that their own lawsuits against the Forest Service were based on science and law and that their legal victories demonstrate a valid, secular basis for their litigation. They concluded that, given their adversarial relationship with the Forest Service, it was absurd to contend they were in cahoots with it to establish deep ecology religion. The Forest Service agreed and denied being influenced by any religious interest group.

A U.S. District Court judge dismissed the lawsuit in February 2000, holding that the environmentalist defendants had not taken state action, a prerequisite to finding a constitutional violation. He also held that there was no compelling evidence that the Forest Service had been influenced by the environmental activists who were, in any case, entitled to try to

influence government forest practices, whatever their religious motivations.

Given the case law and facts presented, this was an appropriate ruling. The concerns expressed by the logger lawsuit, however, were not implausible, for the religiosity of their adversaries is obvious to any who know them, read their literature, or are aware of scholarly studies about their religious dimensions (see, e.g., Taylor 1994, 1995, 2001a, 2001b). Despite defensive disclaimers by some movement participants, deep ecology and kindred movements certainly qualify as religion (Taylor 1994, 1996, 1999, 2000, 2001a, 2001b). The loggers could have made a stronger argument than they did, however, that the Forest Service, or at least some of its employees, are motivated by deep ecology or kindred nature spiritualities.

Indeed, many Forest Service (and Park Service) luminaries have been motivated by nature-based religion. John Muir, whose preservationist ethics live on as an important part of the Park Service's mission, was motivated by both pantheistic and animistic perceptions of the holy in nature (Fox 1981; Cohen 1984). Bob Marshall, a pantheist and mountaineer who served in several important interior department posts, was the driving force behind the establishment of the Forest Service's first wilderness reserves (Fox 1981: 208; see also Graber 1976). Aldo Leopold, who with Marshall helped create the Wilderness Society, also championed wilderness during his own Forest Service career. In his writings, Leopold eloquently fused science with nature spirituality, while expressing privately his pantheistic spirituality (Fox 1981: 367; Meine 1988: 506-507; Callicott 1994: 42-43; on

Muir, Marshall, and Leopold, see also Taylor 1995).

Leopold's nature spirituality is especially important, for many consider him to be the twentieth century's most influential ecologist. Certainly, his views are influential within the Forest Service. And they permeate a recently published book produced by scholars affiliated with it, entitled *Nature and the Human Spirit* (Driver et al. 1996). Jack Ward Thomas, chief of the Forest Service during much of the 1990s, wrote its foreword. In it, he describes and endorses what Dan Deudney calls "civic earth religion" (Deudney 1995, 1996) while trying to delicately avoid the constitutional problem of how to deal with religion in managing public lands:

The introductory chapter cautions readers against assigning a narrow, sectarian, religious, or mystical meaning to the words 'spirit' and 'spiritual' because the words are used in a much broader sense throughout the text. Much care is taken not to imply actions or ideas that would violate the doctrine of the separation of church and state.... [Jennifer] Friesen [one of the authors in the book] proposes that purposeful management of the public lands, in part to renew the human spirit as the concept is developed in the text, has nothing to do with the causes of the First Amendment to the Constitution.... *Friesen's position is that nature-based spiritual beliefs are generic to all users, whether holders or nonholders of sectarian religious beliefs. Friesen's position is supported strongly in the Describing Diverse Perspectives section of the text, [which] clearly shows that the types of nature-based spirit-renewing benefits defined by the editors ... are common across all types of users, whether a timber cutter, a hunter, a member of an environmental organization, a hiker, or a Native American.*

Indeed, the purpose of this text is to articulate clearly these commonly held values and to explore how they can be integrated into the practice of multiple-use sustainable ecosystems management. This is in line with the Policy of the ... Forest Service that '... ecosystem management must include consideration of the physical, emotional, mental, spiritual, social, and economic well-being of people and communities'.... This text is timely because it is clear that a growing number of people recognize and deliberately seek the spiritual benefits the public lands can provide ... to renew their spirit away from the city, and to learn about natural processes. This text should help elected officials and administrators and managers of natural areas better understand the complex intangible benefits those areas provide and how they enrich the lives of all Americans (Thomas 1996: xxiii-xxiv; emphasis added).

Such sentiments may not be equivalent to deep ecology spirituality, but neither are they religiously neutral. They may not prove that the Forest Service decision-making has been shaped by "civic earth religion," but they do suggest that nature spirituality is finding fertile ground in the agency and that the loggers' perceptions that such religion may influence its decision-making are not irrational. Again, it seems difficult to escape religion when exploring contested, protected lands.

Devils Tower/Mato Tipila

Perhaps best known from the motion picture *Close Encounters of the Third Kind*, Devils Tower is a granitic column rising roughly 1,300 feet above the lowlands of the Belle Fourche River floodplain in northeastern Wyoming (Figure 3). The tower

proper emerges from a rocky prominence located above the floodplain, extending 867 feet further skyward (Beaumont 1981: 27). Many Native Americans consider it sacred. Its striking features led to its designation in 1906 as America's first national monument. Today it is considered one of the world's premier rock-climbing sites. Known to the region's native peoples as *Mato Tipila* or Bear's Lodge (McLeod and Maynor 2001), the tower has long figured significantly in Plains Indian religion. Lakota, Eastern Shoshone, Kiowa, Kiowa-Apache, Comanche, Crow, Cheyenne, and Arapaho peoples have all lived near it, but between 1860 and 1910, the federal government made it difficult for them to use the site (Hanson and Moore 1999: 53).

In 1893, two local ranchers made the first recorded ascent, a pastime that subsequently increased in popularity. Ten groups ascended to the summit between 1938 and 1950. Ascents increased nearly five-fold over the following twenty years, and by the end of the 1970s, about 500 parties annually made the climb (Hanson and Moore 1999: 54).

In 1978, changing course after generations during which hostility to American Indian cultures and religions was usually (but not always) official policy, the federal government passed the American Indian Religious Freedom Act. It did not establish new rights or mandate access to or protections of sacred sites, for the act was a procedural one with no enforcement mechanisms (Linge 2000: 320). It did, however, require government agencies to evaluate and reduce the negative impacts of their activities on American Indian religion. At Mato Tipila, native peoples responded to the act by infus-

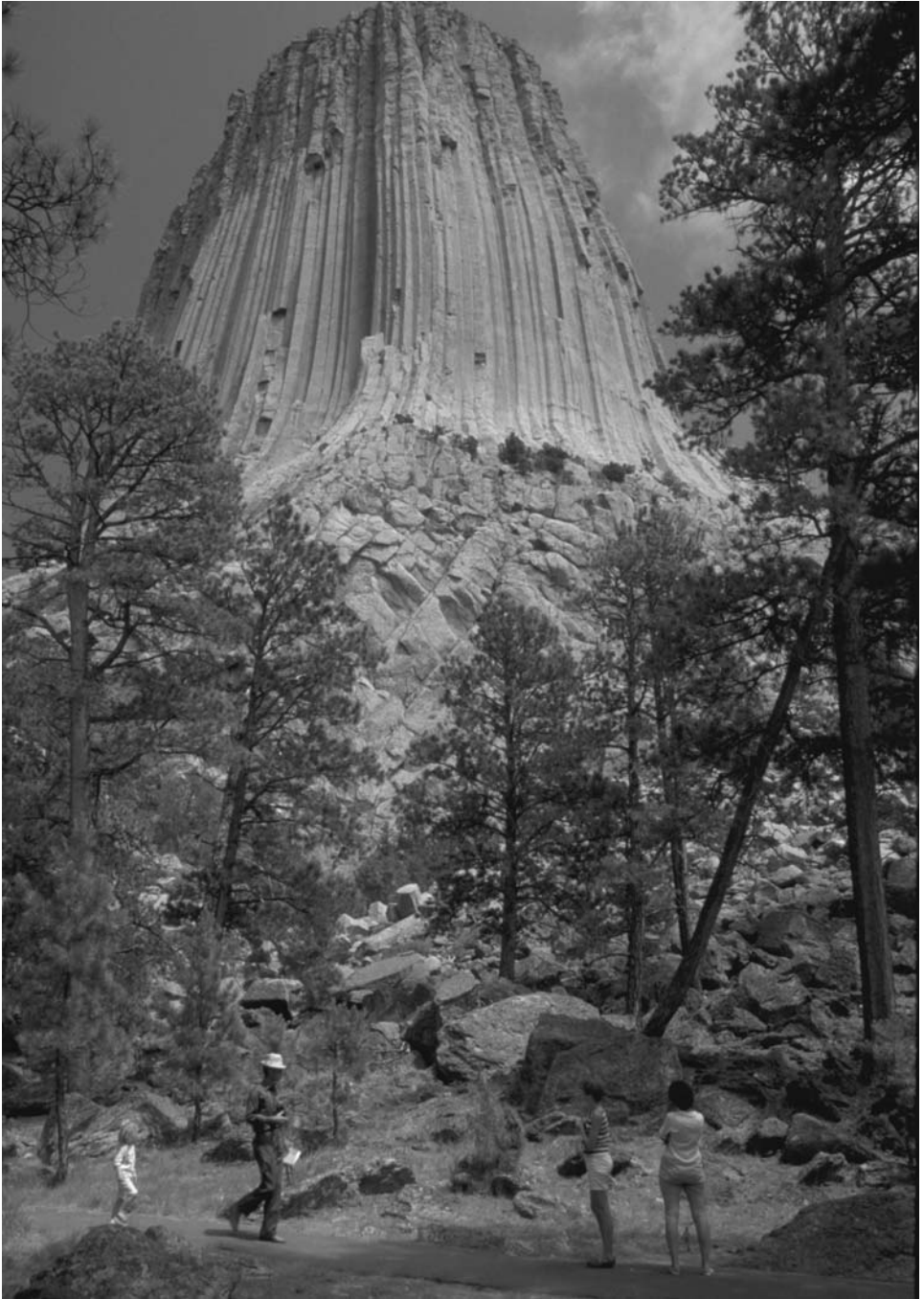


Figure 3. Devils Tower (Mato Tipila) in northeastern Wyoming. The national monument includes over 1,300 acres around the monolith. *National Park Service photo.*

ing a new energy into their rituals, leading to a flourishing and revival of sun dances and vision quests, among other cultural practices (Latimer 2000: 116).

Meanwhile, by the early 1990s, 5,000 people were climbing there each year (Hanson and Moore 1999: 54), precipitating increased religion-related tensions between Indians and climbers. Many Indians took offense at the behavior of climbers who left climbing hardware in the rock, disturbed ceremonies by yelling, or even removed Indian prayer bundles (Koehl and Van Boven 1996). Such behavior was seen as a threat to the efficacy of the ceremonies (McLeod and Maynor 2001).

Some climbers were unsympathetic to such complaints. "As far as I'm concerned," one contended, "prayer bundles are ... trash, and I'm very offended to have them hanging around the monument.... [T]he Indians don't climb that rock which I own as an American citizen" (Dustin and Schneider 2001: 82). "I don't care how many taxes anybody pays," said an Arapaho Indian in a typical response, noting that climbing upon a Christian church would never be tolerated, asserting neither should it be here, for "this place was dedicated when the ancient people found it ... and since then it's been a sacred place" (Hanson and Moore 1999: 57-58).

Hoping to prevent the dispute from boiling over into violence, the National Park Service began drafting a climbing management plan in 1992 to cohere with the newly amended National Historic Preservation Act, which for the first time required federal agencies to "accommodate access to and ceremonial use of Indian sacred

sites ... and [to] avoid adversely affecting the physical integrity of such sacred sites" (Latimer 2000: 117). The Park Service invited Native Americans, climbers, environmentalists, and local citizens to work together with Park Service representatives. A final climbing management plan was produced in 1995. Its key provision was a voluntary ban on climbing during June, the most important month on the Indian ceremonial calendar. If the voluntary approach failed, the plan indicated, a mandatory ban would be considered (Dussias 1999: para. 26-29).

About 85% of the climbers complied willingly. But in a lawsuit known as *Bear Lodge Multiple Use Association v. Babbitt*, a user's group representing several climbers, including commercial climbing guide Andy Petefish, sued the government, arguing that any ban violated the U.S. Constitution's establishment clause (Hamilton 1996; see *Bear Lodge v. Babbitt* 1996). Petefish opposed special consideration for Native American religion, arguing that the tower was a sacred place for him, too, for "rock climbing is my spiritual activity" (Coates 1996). Other climbers agreed. Responding to criticism that he was desecrating somebody's church, Frank Sanders stated, "I don't mean to offend anybody, but if there's a climbing ban ... then I'm locked out of my church. I think the church ought to be open" (McLeod and Maynor 2001).

In 1996, the U.S. District Court judge hearing the case ruled that a mandatory ban would raise constitutional problems, but that the Park Service could avoid improper entanglement with religion if the ban were completely voluntary (*Bear Lodge v. Babbitt* 1996). The plaintiffs appealed

this ruling even though the ban was made unambiguously voluntary in the subsequently amended plan. The judge rejected this appeal in 1998.

The Park Service's judicially endorsed compromise has not satisfied some of the protagonists, who say it violates their religious freedom. Charlotte Black Elk of the Oglala Lakota, for example, still opposes any climbing as a desecration. Some climbers insist that even a voluntary ban is disrespectful of their religious practice and unduly privileges Indian religion. Climber Paul Piana asserts, for example, that he gets as much spiritual satisfaction from climbing as Indians do from their rituals: "All of the things you are supposed to divine from religion, I get from climbing.... There is this awe that is there, and this respect that is there, all of these mushy, groovy emotions you might come up with to describe the better parts of spirituality" (Hughes 1998). Clearly at Mato Tipila/Devils Tower, there is no way for those vested with management responsibility to fully accommodate both points of view.

Conclusion

As the world's wilder places become scarcer and thus more precious, efforts to protect them are intensifying. But such efforts can precipitate conflict as stakeholders fight over place-dependent resources, livelihoods, and lifeways. As an important element of human culture, religious perceptions and practices often become intertwined within such disputes. Perhaps especially when religious feelings are strong, such conflicts can become violent (Taylor 1998). One lesson from all of this is that government officials, who increasingly must manage disputes over pro-

tected areas, ignore religion at their peril. Those who do will be less likely to succeed, whether in their environmental protection efforts or in ameliorating conflicts over livelihoods or cultural values that such efforts may precipitate.

Another lesson of the preceding cases (which, with more space, could be multiplied with many other examples) is that principles or laws affirming religious freedom do not magically liberate officials from taking sides in religion-related disputes. There are no easy answers and there is no way to avoid making controversial decisions. Officials must face religion forthrightly and strive to reduce religion-related conflicts over protected places. The preceding cases signal three alternative governmental responses that are available when incompatible religious claims are asserted over lands designated or slated for protection. Thinking critically about these responses may provide guidance for dealing with such cases.

On Mount Graham, for example, despite the American Indian Religious Freedom Act, governmental, university, and church officials did little to anticipate or seriously consider the religious objections to the envisioned telescopes, responding defensively and aggressively when these objections did emerge. From the Forest Service to the Congress, government officials acted not as neutral arbiters between the competing secular and religious interests but rather as telescope champions. Indeed, the religious sensibilities of the Indians and environmentalists seemed to remain incomprehensible, if not distasteful, to the telescope's key proponents. The possibility of accommodation was not seriously explored or undertaken.

The Contract Loggers' lawsuit raises another possibility: Government decision-makers could capitulate or convert to a nature-revering spirituality of one sort or another. Under such a scenario, they might well privilege environmental preservation or place-dependent ceremony and reject, for example, the preferences of those who consider it a sacred duty to extract God-given resources to benefit humans who were created in God's image and who alone have souls. U.S. resource agencies have not, of course, embraced nature religion with a corresponding intrinsic value theory, implementing exclusively the prescriptions of those who consider nature sacred. As this case study and the emergence of organizations such as the Forest Service Employees for Environmental Ethics suggest, there is, despite the strong utilitarian ethos that tends to guide American resource agencies (Geffen 2002), a struggle for their hearts and minds. It is possible to imagine that these agencies (or, more likely, various employees within them) will increasingly ground their prescriptions on a reverence for nature, rather than relying primarily on utilitarian premises.

A third way is suggested by the conflict over Devils Tower/Mato Tipila. Here, with recent statutes encouraging respect for American Indian religion well in mind, government officials took seriously the nature-related religious perceptions of the region's American Indian communities. They also arranged for and encouraged dialogue among people with competing religious perceptions regarding proper behavior at this site, and educated the wider public with what they learned. The resulting management plan did not satisfy everyone,

but thus far it seems that the majority of Indians and climbers are willing to live with the compromise now endorsed by the court.

The best possible outcomes in difficult cases such as these will probably begin with an approach that most resembles the third one, with dialogue among contending parties. If solid majorities of the contending parties do not support the outcome, it is unlikely that any land protection scheme will succeed. It is equally unlikely that the decision will guarantee free religious practice or promote tolerance or respect for religious diversity.

Nevertheless, it is also clear that there is no avoiding controversy, so careful deliberation over the values that will guide decisions in difficult cases is indispensable. Put simply: What values are decisive? Put differently: Which values are trumps? Although this is no place for a detailed argument, a foundation for one can be articulated: *Decision-making now ought not foreclose the opportunity to pursue and protect morally important values later.* This expresses the precautionary principle, which is increasingly recognized as a cornerstone for any environmental ethics. Indeed, the precautionary principle is a pillar of the "Earth Charter," which claims that preventing harm is "the best method of environmental protection" and insists that "when knowledge is limited" we should "apply a precautionary approach." The Earth Charter, which also lists the protection of biological diversity and cultural diversity, and the quest for economic justice and democratic decision-making, as its core values, was submitted for ratification by the United Nations General Assembly on the occasion of the Earth Summit in Johannesburg in 2002, and will no

doubt be passionately promoted, and perhaps even ratified, sometime in the future (see Earth Charter Initiative 2002).

Applied to the present and similar cases, such principles place a moral burden of proof on those who would dramatically alter ecosystems when the available evidence indicates that doing so could seriously erode biological or cultural diversity, including religious diversity. All of these are core

values of the Earth Charter, which moreover urges "special attention to the rights of indigenous peoples and minorities." In the case of both biological and cultural diversity, when such diversity is gone, all too often it is gone forever. This underscores the importance of applying the precautionary principle when considering and contesting whether a place, or place-based practice, might merit protection.

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Life and the Nature of Life—in Parks

Parks are places for recreation, and that suggests play, leisure, sport. Many parks are of exactly that kind, and fortunately so; we need our city parks for softball games, our state parks for a family reunion. Recreation re-creates, rejuvenates people when they are worn from work. But outdoor, natural parks are much more, and more fortunately so. These grander parks in the greater outdoors provide dimensions of depth belied by their vacation and recreational settings. Parks are places so protected that we can simultaneously get “away from it all,” away from the workaday week, from the labors of town, factory, farm, and “back to it all,” encountering the park-protected reserves of elemental nature.

This is recreation, if you like, but this recreation is set within creation. Some of the recreation is relaxation, unwinding from daily labors; deeper down the re-creation is restoration of perspective on the nature of life, reencounter with the creation. Parks recreation preserves human life by re-creating it. We figure out who we are and where we are. The last part of that question must be answered in culture, for human life is “by nature” cultural. But the first part, the fundamental ground, is answered in nature. “By nature,” too, we are embodied creatures, residents on landscapes, earthlings, placed in a more inclusive, more comprehensive community of life and life support. In that sense, parks protect a full answer to the question of human identity.

Parks are philosophical places; let’s play with that idea. “Know thyself.” Socrates insisted: “An unexamined life is not worth living” (Plato, *Apology*: 38). On that score he was quite right. Socrates also said, “You see, I am fond of learning. Now the country places and trees won’t teach me anything, and the people in the city do” (Plato, *Phaedrus*: 230d). So he loved his Athens, and we indeed ought to be good citizens. But Socrates was quite

wrong about learning nothing in nature. We correct him: “Life in an unexamined world is not worthy living, either.” Socrates could have used visits to national parks, to wilderness areas, and that would have protected him from such error. He missed too much of value; missing what parks have to offer, he did not have life as fully figured out as he thought. To know himself, he needed, a biologist would say, a better adapted fit. A philosopher might say: a more inclusive identity.

Life and Death

Life and death is serious business. Living and dying is the business of life; and now, in contrast with the daily business workplace, in parks one is immediately confronted with life persisting in the midst of its perpetual perishing. True, one is on vacation; one doesn’t want to be too somber. But the seasons are evident: spring with its flowering, fall with its dieback. I am at leisure, but the struggle out there is perennial—eating and being eaten, survival through adapted fit. That is the ultimate “dialectic,” if we may use Socrates’ philosophical word: Life is a search with opposites in conflict becoming complements in resolu-

tion. Wild nature is a vast scene of sprouting, budding, flowering, fruiting, passing away, passing life on. Birth, death, rebirth, life forever regenerated—that is the law, the nature of life.

Of course—especially if this is ultimately the way the world is made—we cannot escape this in town. There also people age and perish, and reproduce and prosper, generation after generation. But something about taking “time out” on vacation or the weekend and immersing oneself in a “nature reserve” confronts us more directly and intensely than usual with this life struggle and life support in primordial nature. This is baseline nature. The trip starts out social, even political: We head for the park shown on the map as a legally mandated, legally designated area for preserving original nature. We pass the gate and pay the admission fee; we are inside the park’s official boundaries. But politics and society soon fade, and the natural history commands the scene. And the first commandment is: Survive. Adapt. Eat or be eaten. Life or death. Our first observation is: Life goes on—protected in the parks but on its own, wild and free.

Sources and Resources

Parks are for recreation. Strip away the human presence, and there is no recreation in the wilderness. So it might seem that any associated value lies entirely in these human recreational experiences, no matter how greatly natural features in the park contribute to them. Perspectives shift, however, when the recreation turns to re-encounter the creation. Perhaps people in parks generate new levels of valued experiences—enjoying the sunset, for example, or bird watching—but

these are superimposed on spontaneous natural values, some kinds of which are not experiential. After all, the life-supporting ecosystems and the genetic information coding the know-how organisms in their species lines use to cope in these ecosystems operate in the wild regardless of whether humans are present or aware of these things. The life and death and life renewed were already going on, before we came as visitors. The trees were photosynthesizing, capturing solar energy, and the birds were feeding their nestlings, capturing caterpillars.

Forests and soil, sunshine and rain, rivers and sky, the everlasting hills, the rolling prairies, the cycling seasons—these are superficially just pleasant scenes in which to recreate. At depth they are the surrounding creation that supports life. If one insists on the word, they are *resources*, but now it seems inadequate to call them recreational resources. They are the *sources* that define life. They are the life support system, the ecosystems that humans inhabit. Here is life close to its origins.

Humans depend on air flow, water cycles, sunshine, photosynthesis, nitrogen fixation, decomposition bacteria, fungi, the ozone layer, food chains, insect pollination, soils, earthworms, climates, oceans, and genetic materials. These ecological values contribute positively to human experiences. But they also seem to be there apart from humans being here. Nature is an evolutionary ecosystem, with humans a late add-on.

True, the back-to nature ritual is largely symbolic: A camper’s groceries still come from the supermarket. But for precisely that reason many need at least the symbolism of the cook-out, the fish fry from the day’s catch, the

drink of water dipped from the spring, the dried bones strewn beside the trail, the warmth of a campfire, an eye on the growing twilight, possibly a thunderstorm, even swatting mosquitoes—all of which immerse persons in the natural order. We know the gutsy feeling that comes with returning to the basics, even if we stutter when we try to put it in words. Life support by the greater outdoors is not symbolism at all but literal and real. The park setting accentuates these touchstones, symbols set off from the everyday life of town and commerce, but quite genuine and authentic, primordially natural.

In that sense parks put people in their place. They take us out of culture into nature; we leave the city behind and go out into the country. The tourist's first impression is that this is not where I live; the whole idea of being a tourist is being somewhere else from where you live. And a tourist in wild nature is even farther from home in the city. But a second, and deeper impression, is that this is where we do live, our cultures superimposed on natural systems. First impressions may be that we have gone rustic, gone "back to" something past; we take the weekend off in a world that is unreal. But second impressions run deeper. We have not gotten away from it all; we have gotten back to it all. "Back to" metaphors, however, are always a little worrisome. We'd better say: "down to" it all. We reach a dimension of depth. We recontact the natural certainties.

We come to see forests, for example, as a characteristic expression of the creative process. In a forest, as on a desert or the tundra, the realities of nature cannot be ignored. This is true in all forests, but intensely true in big,

old forests protected in parks. The forest is both presence and symbol of forces in natural systems that transcend human powers and human utility. Like the sea or the sky, the forest is a kind of archetype of the foundations of the world. The central "goods" of the biosphere—forests and sky, sunshine and rain, rivers and earth, the everlasting hills, the cycling seasons, fauna and flora, hydrologic cycles, photosynthesis, soil fertility, food chains, genetic codes, speciation and reproduction, succession and its resetting, life and death and life renewed—were in place long before humans arrived, though they have lately become human economic and social resources.

Maybe this is a "national" forest, maybe a "state" forest. But the forests were here before the United States was a nation, before California was a state, before there ever was such a thing as a national or state park—and yes, in ancient forests even some of the trees were here before. Yes, we need to set aside these parkland forests, and people ought to visit "their" parks. But the dynamics and structures organizing the forest do not come out of the human mind; a wild forest is something wholly other than civilization. It is presence and symbol of the timeless natural givens that support everything else.

A pristine forest is prime natural history, a relic of the way the world was for almost forever. The forest as a tangible preserve in the midst of a culture contributes to the human sense of duration, antiquity, continuity, and identity. A visit there regenerates the sense of human novelty. We were listening to the latest news on the radio on the way in, but now that we are here, we are rather less convinced that

we need to concern ourselves only with what we human beings have said and done. Although park managers commonly think of nature as “natural resource,” we can soon go astray with this category, if we see nature as merely resource. A forest, a mountain, a prairie is more than resource, instrumental to civilization. It is primeval, wild, creative source—resource for the whole creation, we could say. Such values may be soft. They are also deep.

Order and the Wild

In parks, we recontact the natural certainties? Yes, but, almost paradoxically, we recontact both certainty and uncertainty, the permanent and the changing, the stable and the spontaneous, the predictable and the novel. More philosophically put: We confront order and chaos. We go wild; we go where the Earth is still wild. True, order and chaos could be found had we stayed back in town—but order of a different order, so to speak, and chaos different from that in the wild. The meaning of *wild* in culture is different from the meaning of *wild* in nature. The waterfall will still be there, where we had the picnic five years ago on my birthday, and probably still some Parry’s primrose. But the coyote that made off with the leftovers, while we were lingering by the rocks below the falls—he will be gone. Maybe, if we are lucky, we will see an ouzel again.

The natural processes, confronted in the park, are regular, dependable: Gravity holds, the rains come, and oaks breed in kind. Nature is unified and intelligible, constant enough for life support, including our own. This geomorphological, meteorological, biochemical, ecological constancy is of great value, indeed vital. In the park,

partly because of the leisure, partly because we are taken out of our surroundings of artifacts, we confront this elemental nature.

But there is a polar value. In the park, yes, there are park managers, supervising the visitors, also looking out after the integrity of the park. But these managers are not managing the fauna and flora; this is not a botanical or zoological garden. Life is on its own, wild and free. Or if there is management, it is hands-off, in deliberate effort to let these animals be wild, to let nature take its course. The signs at the trailhead urge us not to feed the chipmunks, beg though they do at the picnic rock below the waterfall. They need to do their thing, get their own food—if they can. Only if on their own can they preserve their own integrity.

Nature in the wild is ever the same and never the same. True, there are the perennial natural givens, even when they are ever-changing. The day moves from dawn to dusk, the seasons pass, plants grow, rivers flow, winds blow, even the rocks erode; change is pervasive. On the scale of deep time, some processes continue on and on, almost forever. Mountains are reliably there generation after generation. The water cycles back, always moving. Parks give us this encounter, more intensely than we are likely to find it in town.

But it is equally true that parks give us nature in its spontaneous novelty. The mountains, reliably there, are just as reliably different in Yosemite and in Yellowstone. By making each location different, wildness makes a favorable difference. It makes each ecosystem historic, the more excellent because no two are alike. Landscapes are never twice the same; indeed, even the aspen leaves in Yellowstone are never twice

the same. In the laboratory, science abstracts out the regularly recurring components to attain predictive control. On the farm, in agricultural fields, science is applied to ensure (so we hope, at least) the farmer a predictable harvest. But in the park, "out in the field" (as we say), nature remains unique and particular, wild. What happens there is always something of a surprise, as whether it will rain before the picnic is over, or the way the ground squirrel evades the coyote, or just when the last of the aspen leaves will be gone.

The seasons come and go and average out. The conflict and resolution is statistically regular, we may say; over the years about one-third of the elk will not survive the winter. But this is rutting season now, and did you see that fight last night, when the new bull took over the harem? I wonder if the old bull had already bred the cows. Probably not, it is still early in the rut. I'll bet that next year the calves will be his.

Yes, acorns make oaks, and oaks breed in kind. And that old giant must have made a million acorns. What a pity that a bolt of lightning destroyed it last summer; it must have been a dry storm, because the old oak burned badly—the bark is off all around the trunk. But the fire didn't spread far. That osprey's nest over there, not forty yards away, doesn't seem to have been disturbed at all.

If we wish to be philosophical about this: There are natural possibilities in excess of what actually comes to pass, and the possible event that does happen can be selected by chance or by animal choice or by some intermediate, partial autonomy for which we hardly yet have an adequate model. Maybe the new bull took over

because he had better genes; good genetic luck, should we say? Maybe he was just lucky when the old one stumbled in the den hole. Maybe the oak got hit because it was a little taller than the others. Or maybe not, since there is another one that is taller still. Maybe it was just unlucky; but lucky for the osprey. Parks are proof that nature elevates law into history, natural history; that life, as it persists in the midst of its perpetual perishing, is always an adventure.

Wildness requires this creative mixing of the stable and the spontaneous or, technically put, the idiographic and the nomothetic. Parks give us direct experience with both these dimensions of nature. *Wild* refers to nature outside human control. Within that domain, the reference continues to nature outside simple lawlike patterns. The park managers do not control these events; neither are they completely controlled naturally. A "wild" place needs life on its own, each life defending its own self, its own kind, with order enough for the support of life, but also turbulence and ferment enough to make each life autonomous and particular.

Many processes may be determinate, but there will be the intersection of causally unrelated lines, producing novelty and unpredicted events. Individual events rattle around in the statistics. Stability is always a dynamic stability that leads to innovative change. The statistical trends develop into ongoing stories. Recent science accentuates genuine contingency, openness mixed with determinate laws. The result, on landscape scales, is idiographic places, beyond lawlike regularity. Yellowstone is not celebrated as a place where the laws of gravity are obeyed without exception or

because meiosis, mitosis, and photosynthesis take place predictably there, as they do everywhere else. Yellowstone is celebrated because it is like no place else on Earth, no place else in the universe.

Parks give us nature with a proper name, nature in its uniqueness. Yes, the waterfall will be reliably there again this year; but that waterfall is especially good in June when the primroses are flowering, tucked in those rocks on the far side. An early settler named Copeland loved these falls, and they are named for him. I have been here half a dozen times; the first time was with Daddy before he died. Parks locate us with embodied presence, mixing our own personal stories with these unique places.

Nature and Culture

It is difficult to visit a large national park and not have a strong sense of “externality,” of my subject self being here, encountering an objective world out there. Yes, the trees were not green until I arrived, nor will they be after I am gone. But yes, more certainly, those trees were there (and photosynthesizing) before I came and will continue to do so after I am gone. It is difficult to be in a large modern city and not have a strong sense of “internality,” of myself emplaced in a world that humans have built—surrounded by artifacts, not here before humans came, and which would not long survive, were we gone. Visiting parks, one goes “outside.” One senses how much in the world was put in place without any human activity. In that sense, parks are the most “outlandish” of our recreational opportunities, or we could even say our most “outstanding” opportunity. There the world “stands out,” over against us, different;

and we cultural animals know we are momentary “stand outs” in the world.

We switch systems, from culture to nature. But then in dialectic we search for nested hierarchy, culture in nature, the nature in culture. Everything survives only with adapted fit—so the biologists insist. But the park visitor has a puzzling “fitness problem” (so to speak): how to fit one’s civilized being to this wild nature. Not only does the park visitor witness the dialectic of conflict and resolution in nature, the park per se has dialectical value. The park puts cultured humans in encounter with spontaneous wild nature. That, too, requires of the visitor conflict and resolution: How am I over against this wild nature? How am I in harmony with these elemental sources? Parks, we promised, confront us with the vital question of human identity.

Half of the answer lies in life support, culture superimposed on nature. Culture remains tethered to the biosystem and the options within built environments, however expanded, provide no release from nature. An ecology always lies in the background of culture, natural givens that support everything else. Some sort of inclusive environmental fitness is required of even the most advanced culture. Whatever their options, however their environments are rebuilt, humans remain residents in ecosystems. This is a truth for rural and urban people, but what better place to learn it than in parks, where we turn aside from our labors and take this wider, more ecological perspective? When we cross the park boundary, we cross over from the cultured environment to baseline nature, to the natural history on which human life is always founded.

The second half of the answer

seems to require a human discontinuity with spontaneous wild nature. Hiking back from the waterfall, I did spot an ouzel, admiring her skill dipping in and out of the cold water and also, beside the stream, a candy wrapper, which I packed out. The ouzel is natural; the wrapper is an artifact and doesn't belong here. But then my tent is artifact, too, and my cooking pots, and do I belong here? The critical distinguishing factor is the deliberated modification of nature that separates humans in their cultures from wild nature.

Expanding such examples into a metaphor, the whole of civilization is producing artifacts in contrast to the products of wild spontaneous nature. "Man is by nature a political animal" (Aristotle, *Politics*, I: 2.1253a). People are animals who build themselves a *polis*, a city. "Man is the animal for whom it is natural to be artificial" (Garvin 1953: 378). *Homo sapiens* is "the natural alien" (Evernden 1993). The really natural thing for humans to do is not to go natural but to build a culture differentiating (alienating) ourselves from nature.

Wild animals do not form cumulative, transmissible cultures. The determinants of animal and plant activity are never anthropological, political, economic, technological, scientific, philosophical, ethical, or religious. Any transmissible culture, and especially a high-technology culture, does need to be discriminated from nature. The workday week, I sit in an engineering office for Boeing, behind a computer. Boeings fly, as wild geese fly, using the laws of aerodynamics. The flight of wild geese is impressive. But, thinking it over by the campfire, I need insight into the differences between the ways humans fly in their

engineered, financed jets and the ways geese fly with their genetically constructed, metabolically powered wings. Most of their information is genetically coded and transmitted. So much of what I am is by acquired information, culturally transmitted. Figuring this out is all the more forceful a demand because I am building those Boeings within a hundred miles of old-growth forest that I as an environmentalist am concerned about saving.

Especially our moral life does not seem to get any authorizing in nature. Be just. Be charitable. Save the spotted owls, even if loggers lose their jobs—but is this either just or charitable? Also, those loggers cut the timbers for my suburban home—and was I not just thinking that humans by nature build their cities? One moment I seem part of nature and the next I seem apart from it. This question doesn't bother me in town, but in the park I cannot escape it. And maybe I should bother about this question in town, when I return, because I do want a culture in harmony with the nature from which it has also made exodus.

Nature and Spirit

The park is demanding a dialogue between nature and spirit. Parks refresh our contact with life animated and rising up from the ground. That is the perennial "giving birth" at the etymological root of the word *nature* (in our word *native*, also in the cognate *pregnant*). Parks preserve opportunity for people to reconnect with this animating earth. Biologists, especially field biologists such as the park naturalists, are never too comfortable with the phenomenon of life viewed reductively as nothing but matter in motion. There is vitality, animation (recalling

the Latin *anima*: breath, spirit).

This spiritedness is evident in the animals. Animals hunt and howl, find shelter, seek out their habitats and mates, care for their young, flee from threats, grow hungry, thirsty, hot, tired, excited, sleepy. Our gaze is returned by an animal that itself has a concerned outlook. We enjoy organic form in spontaneous locomotion, on the loose. There is a never-ceasing hunt through the environment for food, an ever-alert hiding from predators. Human emotions are stimulated by animal bodily motions and drawn through these into animal emotions, invited to empathize with “somebody there” behind the fur and feathers. Television wildlife programs, art, and photography are hardly substitutes for the real thing. The autonomy and surprise, the spirit is gone.

But the most challenging spiritedness here is right behind my own eyes, my subjective self confronting this world from which I have evolved. I must figure out how and why I belong here; and now it seems that, self that I am, with my inwardness, maybe more intense than that in the animals, I am also some kind of overseer, looking out and maybe further out than the animals. *Humans* are cognate with the *humus*, made of dust, yet unique in their capacity to view the world they inhabit. They rise up from the earth and look over their world (Greek: *anthropos*, to rise up, look up). Animals have the capacity to see only from their niche; humans can take a view from no niche; they can look over the whole. Skeptics and relativists may say that humans just see from another niche; and certainly when humans appraise soil or timber as resources, they see from within their niche. But humans can do more, and the proof of

this is in parks.

Roger DiSilvestro finds something radically novel about humans setting aside their wildland parks:

Territorial boundaries are ancient; they are artifacts dating from a primordial world. They are, in essence, established for the exploitation of the earth.... Only in the past century has humanity begun to set the protection of wildlands as a broad social goal, creating national parks, national forests, wildlife refuges, even protected wilderness areas. This is something truly new under the sun, and every protected wild place is a monument to humanity's uniqueness. The greatest qualitative difference between us and nonhuman animals is not that we can change and modify our environment. Practically every living creature does that.... But we are the first living things, as far as we know, to make a choice about the extent to which we will apply our abilities to influence the environment. We not only *can* do, but we can choose *not to do*. Thus, what is unique about the boundaries we place around parks and other sanctuaries is that these boundaries are created to protect a region from our own actions.... No longer can we think of ourselves as masters of the natural world. Rather, we are partners with it (DiSilvestro 1993: xiv–xv).

So the park experience, though it starts recreational, culminates with this re-creating, deepening experience of the human spirit, at once setting ourselves apart from the park, posting these unprecedented territorial boundaries where we resolve to let life be in its spontaneous naturalness, and in so doing become what we uniquely are: *Homo sapiens*, the wise species, knowing ourselves (if we may say so) as “spectacular” (outstanding overseers) in this spectacular world we

inhabit. We are free in this world, free to celebrate it, and glad to be embodied and resident in this wonder-full

creation. In that sense, parks are outstanding opportunities to keep life wonderful.

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Protected Landscapes in Canada: Current Practice and Future Significance

Canada's network of protected areas encompasses the complete spectrum of protected area management categories recognized by the IUCN. Although category V areas, protected landscapes/seascapes, comprise nearly 15% of Canada's protected areas as recorded in the official 1997 United Nations List, this designation and approach to protected area management is not widely known or its relevance fully recognized by many of the country's protected area agencies or Canadians in general. The article reviews the status of category V areas in Canada by providing a national overview that illustrates the diversity of designations included within category V. Notwithstanding some inconsistency in the use of category V in Canada, there is a growing appreciation of the significance of the protected landscape/seascape approach as evidenced through the adoption of bioregional conservation landscape models that involve connected networks and conservation stewardship by local people within working landscapes. In addition, there is increasing recognition of the interdependence of nature and human activity, and specifically the similarities that are found in the management approaches for protected landscapes/seascapes and cultural landscapes.

Canada's network of protected areas originated with the establishment of Banff National Park in 1885. Since then, a complex array of protected areas has evolved that reflects the involvement of federal government agencies and territorial, provincial, and regional levels of government. These commitments have been augmented by more limited participation by local levels of government but a growing involvement by non-governmental organizations (see Dearden and Rollins 2002; Turner, Wiken, and Lopoukhine 1999).

A number of observations can be made about Canada's protected areas that are relevant to the role of category V areas. First, despite considerable progress during the 1990s in the

expansion of Canada's protected area, less than 10% of the country is currently protected (see Boyd 2002; Dearden and Rollins 2002). Second, progress towards completing a representative system of protected areas varies considerably between the respective provinces and territories. Third, for the greater part of the history of protected areas in Canada, the prevailing approach has focused on the protection of pristine environments, wilderness, and wildlife. Canada's continuing commitment to the protection of its biodiversity and ecosystems reflects this perspective and together with the emphasis on public lands shows many similarities to the national park tradition of the United States. A fourth characteristic,

and one which is also similar to the situation that has existed in the United States, is the dilemma demonstrated by national and provincial park agencies in dealing with local people and their imprint on the landscape within protected areas (see Allen 1993; Swinnerton 1999). Finally, there is a recent growing recognition of the need to complement the more traditional approaches to protected area designation and management with what Beresford and Phillips (2000) have referred to as “a new paradigm for protected areas” (see Dearden and Rollins 2002; Swinnerton 2001). Illustrative of this new paradigm are many of the distinguishing characteristics of the IUCN protected area management category V, the protected landscape/seascape.

Protected landscapes are manifestations of the symbiotic relationship between natural and cultural heritage (see Mitchell and Buggey 2000). In these areas, biodiversity protection coincides with sustaining and enhancing the social and economic stability of an area and the quality of life of its residents. As such, category V areas are lived-in landscapes that demonstrate the on-going interaction between people and their means of livelihood that is primarily dependent on the basic resources (natural and cultural) of the area. The protected landscape concept refers not only to a product but also to a landscape management process that accommodates and guides change.

“Linking Protected Areas with Working Landscapes Conserving Biodiversity” was the theme of the Third Science and Management of Protected Areas Association (SAMPA) Conference, that was held in Calgary, Alberta in 1997, and pro-

vides evidence of this broadening approach in Canada (see Munro and Willison 1998). However, Searle’s (2000) subsequent observation that Adrian Phillips’ presentation on working landscapes and protected areas at the conference was an “intriguing idea” provides a cogent reminder of the relative lack of awareness of the category V concept in Canada. More recently, the 2001 Annual General Meeting and Workshop of the Canadian Council on Ecological Areas focused its attention on the IUCN classification of terrestrial and marine protected areas within Canada, and specifically on the application of category V protected landscapes/seascapes and category VI managed resource protected areas.

Protected Landscapes within Canada’s Protected Area System: A National Overview

As a result of the diversity of agencies and functions that protected areas serve in Canada, it is not surprising that consistent and comparable information on Canada’s protected areas is difficult to obtain. Despite this limitation, a number of sources do provide data on Canada’s protected areas in terms of the six IUCN protected area management categories. The Canadian Council on Ecological Areas sponsors the Canadian Conservation Areas Database (CCAD) that provides the most comprehensive record of protected areas in Canada (see Turner, Wiken, and Lopoukhine 1999). More limited in scope is the Parks and Protected Areas Land Base Inventory that is compiled by the former Federal-Provincial Parks Council (now the Canadian Parks Council). To varying degrees, these organizations, as well as individual park and protect-

ed area agencies, provide the basic data that are compiled in the United Nations List of Protected Areas and the World Conservation Monitoring Centre's (WCMC) Protected Area Database.

The following overview of category V areas in Canada is based on information taken from the WCMC Protected Area Database for 1997. Table 1 illustrates the relative importance of category V areas within Canada's total protected area network.

the largest number of areas occurs in Ontario (59.5%), whereas Québec accounts for a very substantial amount of the total area recorded as category V in Canada (83.1%). The large number of sites recorded for Ontario is largely the result of considering conservation authority areas as protected landscapes. In the case of Québec, the large area recorded as category V is primarily due to wildlife management areas and wildlife sanctuaries being included under this category. An indi-

Table 1. Canada's protected areas network.

IUCN category	Number of sites	%	Area (km ²)	%
Ia/1b	630	19.5	32,964	3.5
II	1,046	32.5	400,233	41.9
III	70	2.2	217	<0.1
IV	563	17.5	398,592	41.8
V	772	23.9	93,056	9.8
VI	143	4.4	28,041	2.9
Total	3,224	100.0	953,103	99.9

Source: WCMC Protected Area Database (1997)

Protected areas in Canada recorded as category V protected landscapes/seascapes account for less than one-quarter of the total number of protected areas in the country and less than 10% in terms of the total area protected. By comparison, the 1997 United Nations List, which is restricted to protected areas of at least 1,000 ha, records 127 category V protected areas for Canada with a total area of 9,217 km². This represents 14.8% of the 861 protected areas and 9.7% of the 949,005 km² that comprise the total protected area of Canada (IUCN 1998).

If the 1997 WCMC category V data are broken down on the basis of provincial and territorial distribution,

cation of the diversity of different protected area designations within Canada that are recorded as category V is provided in Table 2. Based on the WCMC database, the 772 individual sites have been assigned to the designations used by the respective agencies and authorities. Conservation authority areas account for the largest number of sites (42.2%), followed by regional district parks (11.3%), wildlife management areas (8.8%), and recreation sites (8.5%). In terms of the actual area within respective designations, wildlife sanctuaries comprise by far the largest area (82.5% of the total) followed by provincial parks (5.5%) and wildlife management areas (4.9%).

Table 2. Category V areas in Canada and their protected area designations.

Designation/Description	Number of areas
Agreement Forest	28
Canadian Heritage River	3
Conservation Area	64
Conservation Authority	326
Crown Reserve	1
Ecological Reserve	4
Game Preserve	1
Heritage Area	1
Heritage River	1
National Capital Commission Area	13
National Historic Park	3
National Park	1
National Wildlife Area	1
Natural Area	1
Nature Park	27
Nature Reserve	1
Provincial Historic Site	1
Provincial Park	43
Recreation Area	2
Recreation Site	66
Regional District Park	87
Wilderness Area	1
Wildlife Area	1
Wildlife Management Area	68
Wildlife Protection Area	1
Wildlife Sanctuary	26
Total	772

Source: WCMC Database 1997

Although the numerical data presented in Table 1 and 2 provide an overview of the relative importance and composition of category V areas in Canada, caution should be exercised in assigning too much significance to specific figures. Some inconsistency and discrepancies exist, not

least because individual agencies include different protected area designations under category V. For example, although Québec accounts for 83.1% of the total area of category V protected lands in Canada, a more recent analysis of the province's protected areas system indicated that

there were no designations used within the province that currently equate to category V (Québec Ministry of the Environment 2000).

On-going research by Swinnerton (2001) involving field verification of selected category V sites across Canada and discussions with relevant agency personnel suggests that more careful attention needs to be given to identifying protected areas as category V. Such an undertaking will inevitably enhance the accuracy and credibility of the resultant data that are assembled, but more importantly, the process should result in a clearer articulation of the relevance of the category V to protected areas in Canada. A substantial number of the areas that are currently recorded under category V would likely be assigned to a more appropriate IUCN protected area management category or in some instances deleted from the list where

adequate consideration for the protection of biodiversity is not the intent.

Examples of Category V Protected Areas

Many of the protected areas across Canada that are recognized as category V on the CCAD and WCMC lists provide very good working examples of the different circumstances within which the category V approach to protected area management is appropriate (Swinnerton 2001).

The Cooking Lake–Blackfoot Grazing, Wildlife and Provincial Recreation Area in Alberta is a 97-km² area that is managed in an integrated fashion to accommodate cattle grazing, wildlife management, trapping, natural gas extraction, and a wide range of year-round recreation pursuits (Figure 1). Limited-season recreational hunting and year-round Aboriginal hunting also occurs. Cattle



Figure 1. One of the improved meadows for cattle grazing in the Cooking Lake–Blackfoot Grazing, Wildlife and Provincial Recreation Area. This picture was taken soon after seeding of the meadows. Photo by Guy S. Swinnerton.

grazing within the area demonstrates the interdependence between the protected area and the adjacent agricultural landscape. One of the key features of this category V area is the importance of the multi-stakeholder process that was followed in the preparation of the management plan and its subsequent successful implementation.

A very different type of category V area is represented by the National Capital (Ottawa) Greenbelt. This area comprises 20,000 ha of green space and rural landscape that surrounds Canada's capital to the south of the Ottawa River (Figure 2). The greenbelt is publicly owned, and a master plan outlines a commitment to maintaining the natural environment and supporting a vibrant rural community. In practice, this commitment requires partnerships between the National Capital Commission, other levels and departments of government, local communities, and tenant farmers.

Through this approach, it is intended to protect the significant natural and cultural resources of the area, safeguard the working rural landscape found within the greenbelt, and provide opportunities for outdoor recreation.

Hecla/Grindstone Provincial Park is located on Lake Winnipeg in Manitoba. Approximately 2% (2,200 ha) of the park is assigned to a heritage land use category. This designation applies to sites that are of significance to Icelandic and Aboriginal cultures. The Icelandic village of Hecla is experiencing a period of revitalization with descendents of the original Icelandic settlers returning to the village to live. An advisory committee comprising former landowners and provincial parks staff has established guidelines to ensure that any development fits in with the essential character of the original Icelandic fishing village. The harbor at Hecla Village (Figure 3) continues to support commercial fishing,



Figure 2. Productive agricultural land and woodland within the National Capital Greenbelt.
Photo by Guy S. Swinnerton.



Figure 3. The harbor at Hecla on Lake Winnipeg with the Icelandic Village in the background.
Photo by Guy S. Swinnerton.

and bed-and-breakfast accommodation has been established in a number of homes.

Potential for Expanding the Application of the Category V Concept

The potential exists for justifiably adding a variety of areas to the category V list. The Great Sand Hills in Saskatchewan provide just one example. This area includes the largest native prairie remaining in the province and the current land use plan provides for both habitat protection and sustainable use within the working landscape. Other examples include appropriate sections of a number of the rivers in the Canadian Heritage Rivers System such as the Grand, the Humber, and the Thames in Ontario. The buffer zones of some of Canada's biosphere reserves exhibit many of the characteristics and planning and management approaches that are associated with category V areas (see Swinnerton 1999). Examples include Redberry Lake in Saskatch-

ewan, Mount Arrowsmith in British Columbia, Charlevoix in Québec, Riding Mountain in Manitoba, and the Niagara Escarpment in Ontario. Relevance of the category V concept to coastal and marine protected areas should not be dismissed either. The Saguenay-St. Lawrence Marine Park and the proposed Lake Superior Marine Conservation Areas are just two examples.

There is also evidence that the category V concept will become increasingly relevant if completion of representative protected area systems and protection of their associated biodiversity are to be achieved. In Alberta for example, the inclusion of a "heritage rangeland" category within the proposed new Parks and Protected Areas Act has been necessary in order to provide the legislative basis for protecting representative areas of the province's Grassland Natural Region (see Swinnerton 1999).

Another situation where the category V approach is relevant to biodiversity protection involves establish-

ing connecting corridors between core protected areas. The Algonquin–Adirondack corridor along the Frontenac Axis and the Thousand Islands–Frontenac Arch Biosphere Reserve will require the continuation of small-scale agriculture and woodland management together with appropriate forms of rural-based sustainable tourism. This approach will reflect many of the underlying principles of protected landscapes. The applicability of the biosphere reserve concept and the category V approach to protecting the landscape of the Beaver Hills–Cooking Lake Moraine Area in Alberta has been suggested (Burak and Swinnerton 1998). At the present time, a “Beaver Hills Sustainable Community Initiative” is being actively pursued in order to protect this disjunct portion of the Dry Mixedwood Subregion of the Boreal Forest Natural Region of Alberta while supporting a high quality of life for local residents and adjacent communities. The initiative involves Parks Canada, provincial agencies, municipalities, industry, non-government organizations, and landowners. Finally, there are numerous opportunities in Canada to demonstrate the relationship between the category V concept and cultural landscapes.

Cultural Landscapes and Protected Landscapes/Seascapes

Conventionally, natural and cultural heritage have been widely separated in North American society. Rooted in distinct academic spheres of the sciences and the arts, the divide has been reinforced by many program administrative structures. This disjunction has long obscured the common ground shared by natural and cultural her-

itage. The recent emergence of protected landscapes/seascapes in the natural heritage protection movement, and of cultural landscapes in the historic preservation movement, has built awareness of mutual interest: places where human interaction with the environment over time has shaped the distinctive character of the landscape. The sphere of protection differs for protected landscapes/seascapes and cultural landscapes: protected landscapes/seascapes focus primarily on a harmonious relationship between human activity and nature, biological diversity, and ecosystem integrity, while cultural landscapes emphasize a societal interaction with nature, continuing historical processes, and cultural meaning. Nonetheless, protected landscapes/seascapes and cultural landscapes often have much in common, particularly the involvement of local people and communities in safeguarding social and cultural continuity related to place.

Like protected landscapes/seascapes, cultural landscapes center on human interrelationships with the natural environment, “a diversity of manifestations of the interaction between humankind and its natural environment,” to use UNESCO’s language in the World Heritage Convention’s Operational Guidelines. Cultural landscapes often encompass evolved techniques of sustainable land use, which have been developed in response to the characteristics and limitations of the natural environment and which support biological diversity; many embody a specific spiritual relation to nature. Many protected landscapes/seascapes are characterized by elements similar to those identifying evolved, continuing cultural landscapes: they “exhibit significant

material evidence of ... evolution over time,” they “retain an active social role in contemporary society closely associated with the traditional way of life,” and “the evolutionary process is still in progress.” In other protected landscapes/seascapes, the material evidence is much more limited, likening these areas more closely to associative cultural landscapes, where “powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence” define the essential character (UNESCO 1999, cl. 37–39; Mitchell and Buggey 2000). The cultural processes of these landscapes, whether hunting and gathering, agricultural, or maritime, are steeped in knowledge and understanding of the natural environment. They have evolved over centuries in response to its opportunities and constraints as well as a society’s experiences. Scenic quality, diverse habitats, traditional land use patterns, and local customs, livelihoods, and beliefs, which are all significant to protected landscapes/seascapes, are also frequent characteristics of cultural landscapes. Management approaches for protected landscapes/seascapes and cultural landscapes may have many similarities.

The Rideau Canal, connecting Ottawa, Canada’s capital, and Kingston, on Lake Ontario, is an excellent example of the common ground between protected landscapes and cultural landscapes. Designated as both a national historic site and a Canadian heritage river and also listed as a category V protected landscape, the waterway is the central feature of a 202-km evolved, continuing cultural landscape in eastern Ontario. Constructed through remote wilderness between 1826 and 1832 as part of

Britain’s strategy for the defence of the Canadas, the canal joined the watersheds of two major river systems and opened the Rideau corridor to settlement and economic development. It utilizes a series of excavated channels, masonry locks, dams, weirs, and embankments to link existing natural wetlands into a through waterway. Extensive drowned lands resulted from the slack water system that engineers used to raise shallow waters to navigable levels and to regulate water flow. While this activity significantly altered the regional ecosystem, it also created new wetlands, including new or substantially enlarged lakes (Parks Canada 2000). Along the corridor, agricultural settlements, strategically sited villages, mills located to capitalize on water power resources, and field and circulation patterns that shaped the 19th-century rural landscape all have evolved economically, socially, and technologically in response to the natural and cultural environment over nearly two centuries. “Cottage country” emerged in response to the region’s scenic and recreational attractions. Now an active recreational waterway owned and operated by Parks Canada, the canal remains fully operational along its original course and is integrated through federal and municipal planning processes with its 26 adjacent heritage communities. Woodlands, wetlands, and islands of the corridor ecosystem, comprising a wide range of habitats for flora and fauna, are valued for their historical connection as well as their ecological importance (Figure 4). The canal’s commemorative integrity statement, which focuses on historical values and guides planning and management, recognizes a significant environmental stewardship role for the canal



Figure 4. Settlement pattern, wetlands, and woodlands at Burritt's Rapids on the Rideau Canal, Ontario. Photo by Paul Couture.

“because the waterway and the corridor’s ecosystem are inextricably joined” (Parks Canada 2000).

Many cultural landscapes associated with First Nations people may also qualify equally as category V protected landscapes/seascapes, although few have been listed as such to date. Even their identification as cultural heritage has been recent. The 1990s saw a significant shift in the recognition of values in places associated with the history of Aboriginal peoples from a focus on archeological resources and material culture analysis, to ethno-archeology, and then to cultural landscapes. The new direction underlines the involvement of local people, particularly elders, and their long and intimate connection with the land. A core principle accords respect and weight in decision-making to traditional knowledge related to the land, including traditional ecological knowledge, that incorporates Aboriginal world

views, oral narrative traditions, and the inseparability of cultural and natural values. Many indigenous peoples identify traditional knowledge closely tied to place at the heart of their cultural identity. This focus recognizes that many people conceive landscape fundamentally in spiritual rather than material terms, and that they regard the land as sacred and see themselves as an integral part of this holistic and living landscape, whose spirits, resources, and accommodation of them they respect (Buggey 1999). The approach shares considerable ground with the principles and guidelines with regard to indigenous and traditional peoples laid out in the World Commission on Protected Area’s series on best practices for protected areas (Beltrán 2000).

The Fall Caribou Crossing National Historic Site on the lower Kazan River (Harvaqtuuq) in Nunavut is a cultural landscape which com-

memorates the importance of the fall caribou hunt to the inland Inuit and to their survival through the long, harsh winter in the eastern Arctic. It is “an example of the cultural meaning of the arctic landscape to the Inuit whose application and adaptation of their cultural knowledge allowed them to survive for centuries...” (Harvaqtuuq 1997). Flowing through a series of lakes across tundra barren lands to its mouth at Baker Lake (Qaman’tuaq), the Kazan lies on the migration route of the Kaminuriak caribou herd. Estimated at 320,000 strong, the herd moves north across the river in June/July and then in August/September crosses south again for the winter, reportedly the “largest movement of land mammals in the world” (Canadian Heritage Rivers System, n.d.). The herd’s calving grounds are not far away, and caribou trails criss-cross the area (Figure 5). For centuries

the Inuit have frequented this river north of the treeline, where spring and fall caribou hunts shaped their seasonal rounds. Downwind of where the caribou crossed the river, the Inuit established camps to await the animals’ crossing. Traditional beliefs and practices guided preparation and behavior for the hunt. Tent rings, hearths, hunting blinds, and food caches, especially in rocky areas, speak to the long Inuit presence. Inuksuit mark the landscape; the meaning of each can be interpreted only by those who hold the traditional knowledge related to it. Songs composed primarily of series of place names tell their journeys (Keith 1995).

Conservation planning and presentation undertaken for the cultural landscape, which lies on Inuit-owned lands in the traditional territory of the Harvaqtuurmiut people, have been designed to safeguard the integrity of



Figure 5. Caribou trails near Piqqiq, the fall hunting camp on the Kazan River, Nunavut. *Photo by Archaeological Services Branch, Parks Canada.*

the traditional relationship of the inland Inuit to the fall caribou crossing place. In the absence of legal protection, the Harvaqtuuq Historic Site Committee of Baker Lake and Parks Canada developed a conservation and presentation report with indicators for measuring the “health” of the site. Its implementation plan addresses low-impact land use, future land use policy, developments affecting water quality and water levels of the river, and the health of the caribou herd, as well as recording Inuktitut place names, oral traditions, and archeological sites into a GIS. Items in the implementation plan are linked with various Nunavut planning and resource management authorities. A community guardian monitoring program relies on member observations of significant changes, threats, or looting. Traditional Inuit values and beliefs give direction for

proper conduct in visitation, operation, protection, and interpretation at the site (Harvaqtuuq 1997). The Kazan is also a designated Canadian heritage river, in part to help in preserving the traditional Inuit way of life and in part for its outstanding wilderness recreation values.

Sahyoue/Edacho in the Northwest Territories are sacred sites of the Sahtu Dene people, which they have used since time immemorial. The two peninsulas comprise nearly 6,000 km² known as Grizzly Bear Mountain and Scented Grass Hills at the western end of Great Bear Lake. Open boreal forest leading up from beach ridges (Figure 6) provides woodland caribou winter habitat. Moose, caribou, beaver, marten, ducks, fish, and other resources have sustained Sahtu Dene traditional land uses and lifestyles based on hunting, trapping, fishing,



Figure 6. The beach at Sahyoue/Edacho, Northwest Territories. *Photo by John McCormick.*

camping, gathering medicinal plants, and knowing the land. While the physical resources of the peninsulas are largely natural, cultural values transform these places from natural to associative cultural landscapes.

The fundamental relationship of the Sahtu Dene with Sahyoue/Edacho is expressed in the continuing cultural meaning, ecological integrity, and biological diversity of the landscape. While Western science has long viewed culture and nature as separate spheres, Aboriginal world views see a holistic universe in which the cosmological, geographic, ecological, cultural, and spiritual are intimately intertwined. Ancient narratives of the Sahtu Dene related to Sahyoue/Edacho tell of giant animals whose bodies comprise specific features of the landscape as well as ancestral spirit beings and shamans whose heroic actions made the earth safer and sustaining for those who continue to practise behavior respectful of the spirits. Other stories guide them in land use and relations with animals; still others warn of dangers and direct behavior. Through shapes, names, spirits, and behavior, places act as mnemonic devices for recalling the narratives that instruct the people from generation to generation in knowing and living with this complex landscape. Protection of these sacred sites and the associated telling of the stories are therefore essential to the continuity of Sahtu Dene culture and livelihood (Hanks 1996). While designation as a national historic site (1996) carries no legal protection, interim land withdrawal in accordance with the Northwest Territories Protected Areas Strategy (2001) provides such protection while stakeholders apply its framework to work towards long-term

safeguards and management consistent with its ecological and cultural values.

As these case studies illustrate, cultural landscapes often share common ground with protected landscapes/seascapes, where human interaction with the natural environment has resulted over time in a distinctive landscape. In evolved, continuing cultural landscapes such as the Rideau Canal corridor, the ecosystem is an integral part of the historic canal landscape, from construction to settlement to recreation. In Aboriginal cultural landscapes, biological diversity and ecosystem integrity are intimately bound up with cosmological, social, cultural, and spiritual relationships of the people long associated with the land. Further explorations of this emerging common ground in natural and cultural heritage as represented by protected landscapes/seascapes and cultural landscapes can continue to contribute to better understanding of their values, resources, and effective protection mechanisms.

Conclusion

This article has demonstrated the relevance and applicability of IUCN protected area management category V, protected landscapes/seascapes, to Canada's protected areas network and heritage conservation in general. The perspective confirms that protected landscapes should no longer be considered solely as a Eurocentric concept. Consequently, an on-going task is to convince protected area agencies across Canada and Canadians in general of this reality.

[Author's note: The 2003 United Nations List of protected areas reveals that the 765 category V sites in

Canada account for 16.9% of the total number of sites assigned to one of the six IUCN management categories, and that their combined area of 1,191,307

ha represents 1.2% of the country's protected area assigned to a specific IUCN category (Chape et al. 2003).]

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