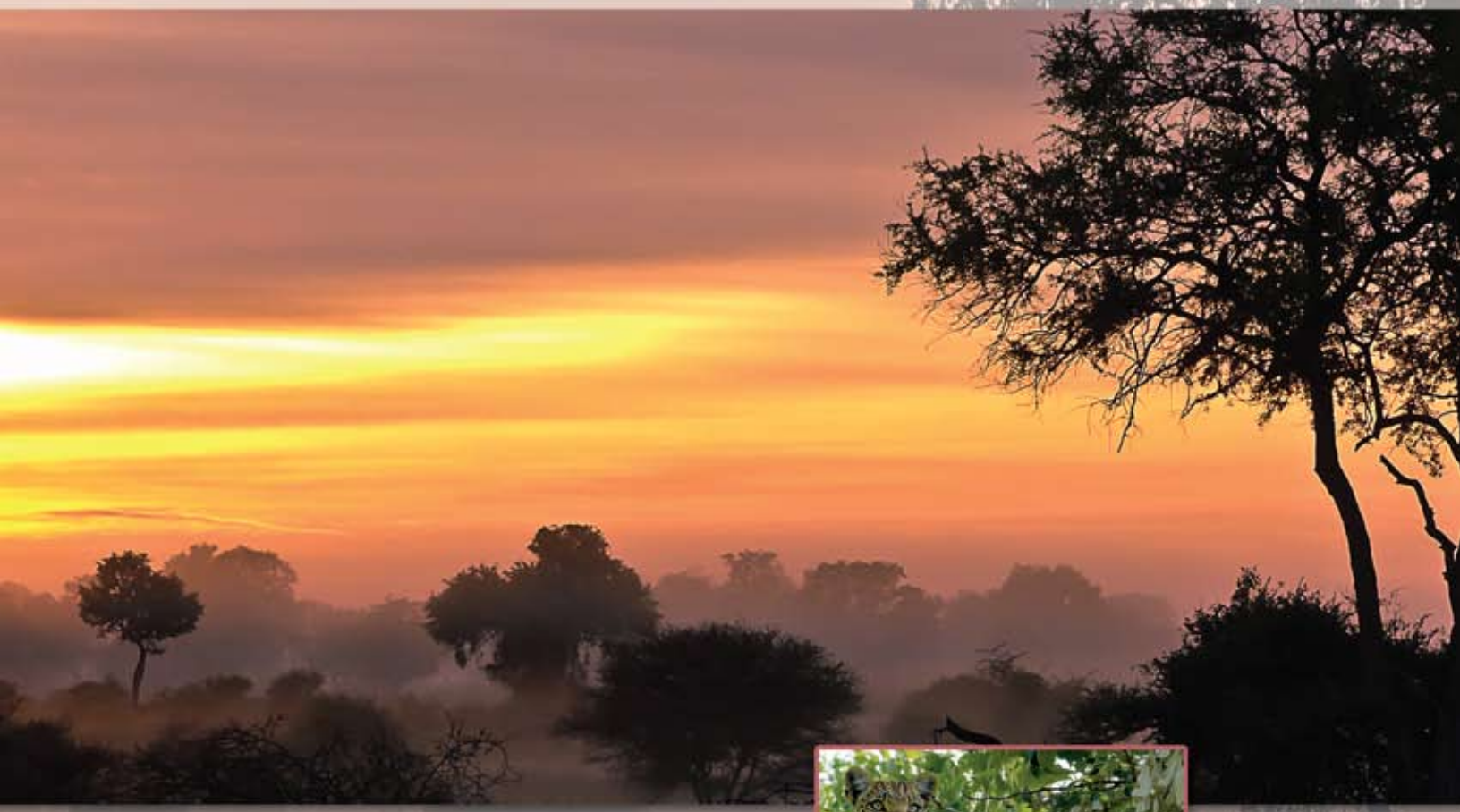
INTERNATIONAL

# Journal of Wilderness



## In This Issue

- Spiritual Value of Wilderness
- IUCN Definition of Wilderness
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APRIL 2012 VOLUME 18, NUMBER 1

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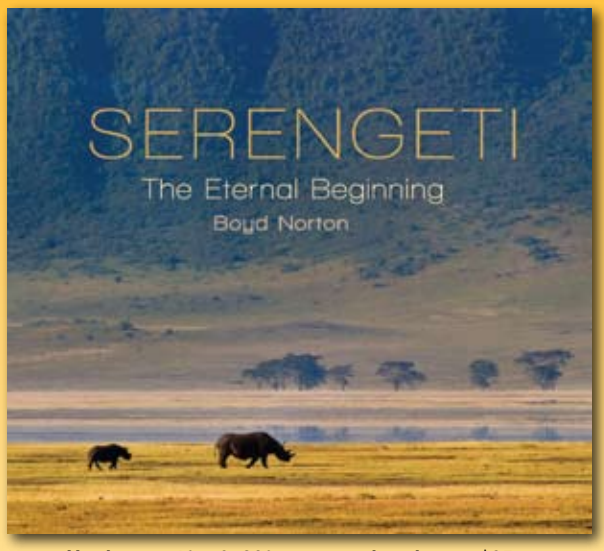


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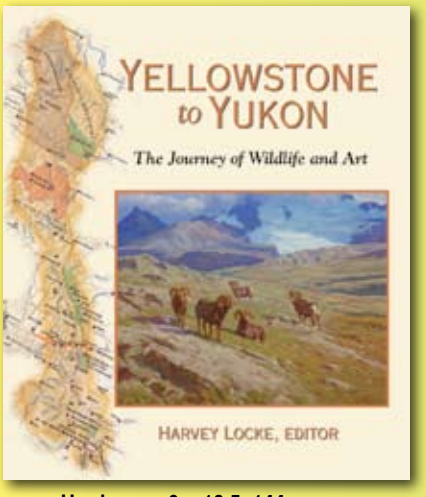


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INTERNATIONAL

# Journal of Wilderness

APRIL 2012 VOLUME 18, NUMBER 1

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***On the Cover***

**Main image**: The Oakvango Delta in Northern Botswana—the world's largest inland river delta and an amazing showcase of biodiversity, is currently under consideration for World Heritage Status.

**Inset**: African leopard (*panthera pardus*) is found in the Oakavango Delta region.

Both photos © Vance G. Martin

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

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

# International Journal of Wilderness

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EDITORIAL PERSPECTIVES

# Wilderness Spirituality

BY TINA TIN

Wilderness spirituality is not a concept that we use often in our day-to-day work of wilderness management or wilderness advocacy. Yet, Sigurd Olson had his wilderness theology; Howard Zahniser's ideas of untrammeled wilderness had been steeped in his Christian sensibilities.

Where wilderness is most often managed and advocated for – in the offices and corridors of many government buildings – the language and units used are mostly rational and Cartesian. We find ourselves defending, managing that which can be counted and measured: number of birds, fish, species, hectares, jobs, and so forth. In order to be able to communicate with others we try to put monetary value on ecosystem services.

Ethics, intrinsic values, intergenerational equity: these are often considered too abstract, philosophical, impractical, or irrelevant. In a world where church and state are purportedly separate, personal and professional priorities, spirituality and reality are also considered as irreconcilable dichotomies. It leaves us in a position where our job is like that of a space shuttle salesperson who is only allowed to talk about the shuttle's gas mileage, comfortable leather seats, powerful air-conditioning system, stylish interior design, incredible spaciousness, and has to deliberately omit the shuttle's one most unique feature: that it can take you to the moon and give you a perspective on your life that you could never have imagined. True, it is certainly not easy to sell an unimaginable product, but then, many advertising companies continue to be very successful in that endeavor.

It is true, too, that wilderness experiences vary and are not always easy to describe. It took me years after my first experiences of humility and awe in front of the grandeur, immensity, and profound silence of the Alaskan wilderness before being able to find the words that could describe and help me understand it (see Figure 1). As such, it becomes an intimate experience that we do not quite know how to articulate and know even less how to communicate or share with others. Just because it is intimate, it takes a very special place in our lives, in our motivations. Just because it is intimate, it remains hidden, behind the curtains, underneath the bed, in the closet. We try not to bring it with us to the office, to the corridors of the many government buildings – perhaps because we are afraid it would affect our effectiveness or credibility at work.

**Figure 1 – The Alaskan wilderness inspires humility and awe. Photo by Tina Tin.**

There are many nature writers who are extremely talented in describing the transcendental in wilderness. Perhaps we are sharing tasks: writers fight for wilderness on the front of the indescribable and the uncountable and managers and advocates fight on the front of what is measurable and scientific. I cannot help but wonder, though, if we could unleash that most unique feature of wilderness in our everyday management and advocacy work – that wilderness is an opportunity and invitation to each one of us to open up to what is grander than ourselves – whether it would make our work, our fights, easier, just because then, it becomes so obvious that wilderness is invaluable, immeasurable, and irreplaceable.

***Continued on page 24***

SOUL OF THE WILDERNESS

# Confirming the Spiritual Value of Wilderness

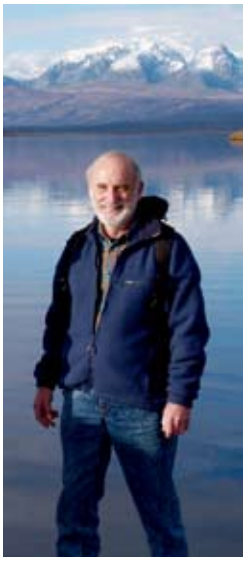
BY PETER ASHLEY

> Wilderness is both a place and a system of belief and feeling about our role in the larger scheme of things. Geographically, wilderness is a remnant of our world that is still natural, wild, and free. Spiritually, it is a refuge for that part of ourselves that seeks connection, belonging, and rootedness within that world. (Kaye 2006, p. 7).
>
> Among the highest of human needs is the spiritual value of wilderness. (Baron 2006, p. 32).

Recognition of the spiritual dimension of wilderness has a long history, especially in the last 150 years or so. Following in the footsteps of the Romantics were a number of authors in the United States such as transcendentalists Henry David Thoreau (1817–1862) and John Muir (1838–1914). Both Thoreau and Muir were among the early naturalists and pioneers of environmentalism in that country who recognized that experience of nature could cause spiritual revelation, Thoreau's and Muir's writings becoming "something of a bible for the spiritual side of environmentalism," – at least in North America (Timmerman 2000, p. 362). Other prominent wilderness writers such as Wallace Stegner and Sigurd Olson have also extolled the spiritual benefits of the wilderness experience (Hendee and Dawson 2002).

Further, acknowledgment of the spiritual quality of nature via photography may well have originated from the deeply evocative pictorial representations of wilderness portrayed by Ansel Adams (1902–1984), whose images so captured the imagination of the American public (Mittermeier 2005). Adams was cognizant of the spiritual-emotional aspects of the visitor experience (Stillman and Turnage 1992), recognizing the "spiritual potential" of wilderness national parks in America in the early 1950s (Adams 1952), although "at one time Adams denied or apologized for the spiritual quality of his photographs" (Graber 1976. p. 111).

And 40 years ago in Australia, Sharland (1972, p. 71), in writing about national parks in the small island state of Tasmania, said: "These refuges [for protection of wildlife, but also as refuges for human life] are essential to maintain the mental and spiritual balance of the people" (see Figure 1). Later, Davis (1980, p. 9), delivering an academic address in Hobart in 1979, confirmed that perhaps the most important purpose of national parks are "as oases of spiritual and aesthetic refreshment." However, in the recent past, the spiritual benefits obtained from or the spiritual relationship with nature by outdoor and adventure recreators have been disputed and labeled as a myth (Morgan 1994).



**Peter Ashley at Swan Lake, Mt. McKinley in background, Denali National Park, Alaska. Photo by William Abbas.**

But it was perhaps American geographer Linda Graber (1976) who first enunciated that wilderness was possessed of a sacred or spiritual dimension in her *Wilderness as Sacred Space*. Graber's sacred carries a religious context, a traditional geographical connotation; such meaning supervened by the emergence of a "non-traditional postmodernist type of sacred space" involving wilderness and concomitant "pilgrimages" opined Canadian geographer J. Douglas Porteous (1991, p. 99). Earlier, psychologist Abraham

Maslow (1970, p. 4) not only affirmed that "sacred space" is a misnomer should it be deemed to be possessed only within a traditional religious construct, because it, as well as spiritual values themselves, have naturalistic meaning – they are real, not abstract or ideal – and "well within the jurisdiction of a suitably enlarged science and …, therefore, they are the general responsibility of *all* mankind" (emphasis in original). Later, David Cumes (1998a) supported the notion that the archetype of sacred space can be part and parcel of the wilderness journey, it being mystical and numinous (see Figure 2), nature and wilderness being nondenominational, accepting anyone who cares to enter. None of this is to suggest, however, that some visitors who extract spiritual meaning from their wilderness visit would place it other than firmly within a religious realm.

## But a Concern …

Notwithstanding the established historical narrative on the spiritual aspect of wilderness, accounted for very briefly above, and studies confirming that the spiritual dimension exists for many wilderness visitors (e.g., Stringer and McAvoy 1992; Fredrickson and Anderson 1999; Heintzman 2002), or that spiritual values are included in many wilderness value typologies (e.g., Bergstrom et al. 2005; Dawson and Hendee 2009), Joseph Roggenbuck expressed concern in the *IJW* (2009) that wilderness spiritual experiences are not given the press that he thinks they deserve, going so far as to suggest that they are endangered experiences (i.e., in imminent danger of extinction). More specifically, Roggenbuck (2009, p. 6) said: "The experiences of transcendence, of awe, of happiness in wilderness, anchored in our very biology as humans, are the very ones I'm calling endangered."

**Figure 1 – A walker taking it all in, Western Arthur Range, Southwest National Park, Tasmanian Wilderness World Heritage Area. Photo by Grant Dixon.**

If there is one wilderness devotee who was thinking along these lines, there may well be others, not only in 2009 when the Roggenbuck paper was published, but possibly now as well? And if these experiences are imperiled, and taken that "*IJW* is the information tool of choice for wilderness managers and advocates" (Dawson, 2010, p. 3), what part, if any, has the *IJW* played in their suggested threatened standing via publication or not of relevant articles?

## … and a Response

To find out what *IJW* authors have had to say on the spiritual value of wilderness, a review of the *IJW* was undertaken with the aim to identify substantive articles on wilderness spirituality. Articles were deemed substantive if the principal theme was wilderness spirituality. Fifty issues of the *IJW* were reviewed, from the inaugural September 1995 issue to August 2011, inclusive. Seven papers were discovered (see Table 1), equating to a paper about every seven issues, or about every two years on average.

Although wilderness activists were not the exclusive focus of Barbara McDonald's study (Table 1, item 5), most of the 18 activists interviewed confirmed they had had soul-fulfilling experiences in natural areas such as wilderness, and thus the article was included for completeness. Although some may consider the number of articles in Table 1 minimal, there were many other acknowledgments of wilderness spirituality in the *IJW* issues, mainly articulated as a value within a suite of wilderness values.

**We need wilderness more than ever, as a counter or antidote to the non-nature colonization currently sweeping the globe.**

The seven articles (Table 1) provide valuable insights into the spiritual dimension of wilderness, confirming not only the existence of this phenomenon and its multifaceted character, but also amply covering the theoretical aspects of wilderness spirituality. However, there are two major limiting

**Figure 2 – Morning light on Little Horn, Cradle Mountain-Lake St. Clair National Park, Tasmanian Wilderness World Heritage Area. Photo by the late Peter Dombrovskis, courtesy of Liz Dombrovskis.**

factors for *IJW* readers of a more practical nature that were revealed in the review. First, no working definition of wilderness spirituality has been proposed, and second, there has been no research published that specifically investigates wilderness spirituality among visitors. I address the former but not the latter here, because I believe it is important for wilderness practitioners, including managers and advocates, to be aware of the nature of the spiritual value of wilderness. Otherwise there is a risk that wilderness spirituality may remain in the mystical domain, with managers feeling "squeamish" about the topic because of the possibility of it being associated with something supernatural or paranormal (Kaye 2006, p. 4) (Table 1, item 6). On the other hand, there may be good reasons for this circumstance: "Spiritual development as a wilderness benefit has received little attention and study, in part because spiritual experiences are intensely personal and often inexpressible, and because of the varied personal meanings of spirituality that make it difficult to define them operationally" (Dawson and Hendee 2009, p. 10).

## Toward a Definition of the Spiritual Value of Wilderness

Based on the meanings of what wilderness spirituality meant to respondents in a questionnaire-based study of the spiritual value of the Tasmanian Wilderness World Heritage Area (TWWHA), Ashley (2009, p. 207) found that the defining characteristics of wilderness spirituality could be identified (see Table 2). These characteristics were derived from written responses to the sole open-ended question in the otherwise quantitative research, for which 290 respondents wrote some 12,700 words, an average of more than 40 words per respondent.

Noteworthy is that the three words *awe*, *happiness*, and *transcendent* in boldface (Table 2) are the same three Joseph Roggenbuck labeled *endangered*,

**Table 1 – Substantive papers on wilderness spirituality published in the *IJW* from September 1995 (inception) to August 2011, in date order**

| No. | *IJW* Reference | [Section] and title | Author/s | Focus |
|---|---|---|---|---|
| 1 | April 1998b<br>4(1): 14–18 | [Education and Communication]<br>Thoughts on the inner journey in wilderness | David Cumes | "Wilderness rapture" as a spiritual phenomenon |
| 2 | July 1998<br>4(2): 4–6 | [Soul of the Wilderness]<br>Consumption gone wild | Rick Clugston | Spiritual ecology or ecospirituality |
| 3 | April 1999<br>5(1): 34–37 | [International Perspectives]<br>Wilderness experience for personal and spiritual growth in Siam (Thailand) | Pracha Hutanuwatr | A Buddhist perspective on wilderness |
| 4 | December 2002<br>8(3): 28–32 | [Education and Communication]<br>On the spiritual benefits of wilderness | Baylor Johnson | Six spiritual benefits of wilderness discussed from a landscape, spiritual, or religious tradition, and psychological perspective |
| 5 | August 2003<br>9(2): 14–17 | [Stewardship]<br>The soul of environmental activists | Barbara McDonald | 'Vital force' and soul-fulfilling experiences among committed environmentalists |
| 6 | December 2006<br>12(3): 4–8 | [Soul of the Wilderness]<br>The spiritual dimension of wilderness: A secular approach for resource agencies | Roger Kaye | Insights from six fields of research facilitate an understanding of wilderness spirituality |
| 7 | December 2008<br>14(3): 29–35. | [International Perspectives]<br>Sacred natural sites of indigenous and traditional peoples in Mexico: A methodology for inventorying | Gonzalo Oviedo and Mercedes Otegui | Sacred natural sites as embodiments of the spiritual connections traditional peoples have with their culture and the (natural) world |

| Table 2 – Defining characteristics of wilderness spirituality, from most to least common (N = 290) |
|---|
| Feelings of inner peace and tranquility contributing to personal contentment |
| Physical, mental, and emotional refreshment thereby life enhancing |
| Connection and relationship with nature and increased understanding taking one beyond or outside the self |
| Feelings of **awe** and wonder about nature and life |
| Feelings of **happiness** and inspiration |
| A respect for and valuing of nature contributing to a change in personal values |
| A feeling of humility and self-forgetting resulting in ego detachment |
| A religious meaning and explanation may be present |
| A heightened sense of awareness and elevated consciousness beyond the everyday and corporeal world conducive to possible **transcendent** experiences |
| Motivation to protect and sustain wilderness areas inducing a sense of personal responsibility for their custodianship and stewardship |

above, disregarding the nuance between *transcendent* (Table 2) and *transcendence* (Roggenbuck). The literature reviewed (Table 1) also showed similarities, except the comparisons were more piecemeal than the constellated characteristic of Table 2. For example, Cumes (1998b) (Table 1, item 1) used words such as *awe*, *wonder*, *transcendence*, *humility*, *connection*, and a sense of renewal and vitality in his "transformations" involved with wilderness rapture, such understandings derived, it would appear, from his experiences leading healing journeys into wilderness; Johnson (2002, p. 28) (Table 1, item 4) referred to a humbling, self-forgetting, and experience of peace, noting that attainment of spiritual benefits is predicated on "having some relation to established religious or spiritual traditions"; and McDonald (2003) (Table 1, item 5) cited connection, interdependence, and environmental responsibility as components of environmental spirituality. This literature, then, helps to validate the legitimacy of the Table 2 expressions, confirming them as components of the wilderness spirituality construct.

In referring to the Ashley (2009) study above, it is incumbent upon me to also refer to the photograph in Figure 2 because it is relevant to this paper and the *IJW*. The photo – "Morning Light on Little Horn," Cradle Mountain-Lake St. Clair National Park, Tasmanian Wilderness World Heritage Area by the late Peter Dombrovskis – was picked not just because it might be considered a "nice" picture. It is developing its own history. To recount, and working backward in time, photographs of the TWWHA were included in the Ashley (2009) study, respondents being asked to rate photographs eliciting a spiritual response. "Morning Light on Little Horn" was adjudged the image having the most spiritual effect, and thus was the archetypal photograph of the 12 used in the study (Figure 1 had the third highest spiritual response). Again in 2009, and coincidently, the Figure 2 photograph appeared in the ultimate edition of the Tasmanian Wilderness Calendar after nearly four decades of publication (West Wind Press, 2008).

Readers might also remember "Morning Light on Little Horn" being featured on the cover of the *IJW* (vol. 12, no. 1, April 2006). A year before, it appeared in *IJW* as a full-page photo (black and white) in Cristina Mittermeier's (2005) paper on conservation photography. Prior to that, it graced the cover of the TWWHA evaluation of management effectiveness report (Tasmanian Parks and Wildlife Service 2004). Clearly there is something special about this photograph, contributing to its almost iconic status. Although Peter Dombrovskis died out there alone in the rugged Tasmanian southwest wilderness, his genius lives on; Timms (2004) perception of Peter's Tasmanian landscapes can be suggestive of transcendence. I think Figure 2 is a case in point.

## Conclusion

Wilderness does not necessarily possess any innate "magical" qualities or properties that through some quirk of nature currently unknown transfers what we might call "benefits" to us as an altruistic service. Putting aside the Gaia hypothesis for a moment (Lovelock 1987), wilderness is not "alive" in the usual sense of the word, possessed of a consciousness to gift something to some but not others, for example. It is only through our human relationship with it do we then bestow certain qualities upon it, such as spiritual value.

Just as the term *wilderness* is a social construct, the benefits or values it is deemed to possess are also constructs. Quite believable constructs, even quantifiable, but constructs just the same. It does seem, however, that we need wild, natural areas to relate to. Through this relating, perhaps part of our evolutionary makeup, when wilderness speaks to us as it were, do we then learn something about ourselves.

But it is us that do the learning. Wilderness does not do the shifting; it does not need to. Thus wilderness may be perceived as a catalyst for change. And I believe its need is great.

There is a risk – that the connection more now with technology and consumption has replaced connection with nature/wild nature, something signaled more than 10 years ago by Rick Clugston (1998) (Table 1). If we accept that, then maybe there is some truth in Joseph Roggenbuck's concerns. On the other hand, this article has demonstrated that experiences of transcendence, awe, and happiness are alive and well, and not endangered, at least not in Tasmania. Might the same be said for other wilderness areas? Further research may confirm this or not, as the case may be.

In the meantime, we need wilderness more than ever, as a counter or antidote to the non-nature colonization currently sweeping the globe. As Michael Frome (2011, p. 33) says: "Wilderness is at the core of a healthy society. Wilderness, above all its definitions, purposes, and uses, is sacred space, with sacred power, the heart of a moral world. Wilderness preservation is not so much a system or a tactic, but a way of understanding the sacred connection with all of life, with people, plants, animals, water, sunlight, and clouds. It's an attitude and way of life with a spiritual ecological dimension."

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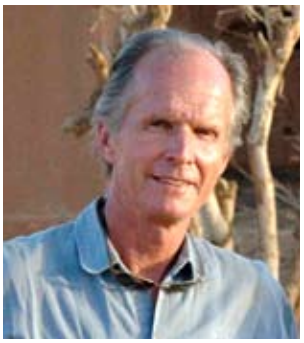
# Defining Wilderness in IUCN

BY NIGEL DUDLEY, CYRIL KORMOS, HARVEY LOCKE, AND VANCE G. MARTIN

Nigel Dudley. Photo by Grazia Borrini.

Cyril Kormos. Photo by Jaime Rojo.

Harvey Locke. Photo by Jaime Rojo.



Vance G. Martin.

The International Union for the Conservation of Nature (IUCN) protected area classification system describes and defines a suite of protected area categories and management approaches suitable for each category, ranging from strictly protected "no-go" reserves to landscape protection and nonindustrial sustainable use areas. Wilderness has its own protected area category under IUCN's classification system, Category Ib, which describes the key objectives of wilderness protection and, more importantly, identifies the limits of what is and is not acceptable in such areas. At the 2008 World Conservation Congress (WCC), a new edition of *Guidelines for Applying Protected Area Management Categories* for the IUCN categories (Dudley 2008) was published following long consultation (see Figure 1). Guidance for wilderness protection is now more detailed and precise than in the 1994 edition, and as a result will help further the application of this category around the world. We describe the revisions to the new guidelines generally, and some of the implications for wilderness protected areas specifically.

## Wilderness Areas and Protected Areas

The term *wilderness* has several dimensions: a biological dimension, because wilderness refers to mainly ecologically intact areas, and a social dimension, because many people – from urban dwellers to indigenous groups – interact with wild nature, and all humans depend on our planet's wilderness resource to varying degrees. A wilderness protected area is an area that is mainly biologically intact, is free of modern, industrial infrastructure, and has been set aside so that humans may continue to have a relationship with wild nature. A number of governments have nationally specific definitions of wilderness protected areas and have enshrined their protection in law (Kormos 2008). Some governments have applied the wilderness designation to marine contexts as well as to terrestrial protected areas.

More and more people value wilderness for its associations with wild nature and physical space, because of its aesthetic and spiritual values, because of its cultural significance, and because they increasingly understand that wilderness areas provide vital ecosystem services. As a result, we are seeing an increase in wilderness laws and policies around the world (Kormos 2008).

However, because of its many dimensions, the word *wilderness* is interpreted in numerous ways and often translates poorly across languages, and sometimes across cultures. There are some critics who continue to see wilderness in a more negative light, viewing it primarily as unproductive land. Some indigenous groups argue that wilderness is a

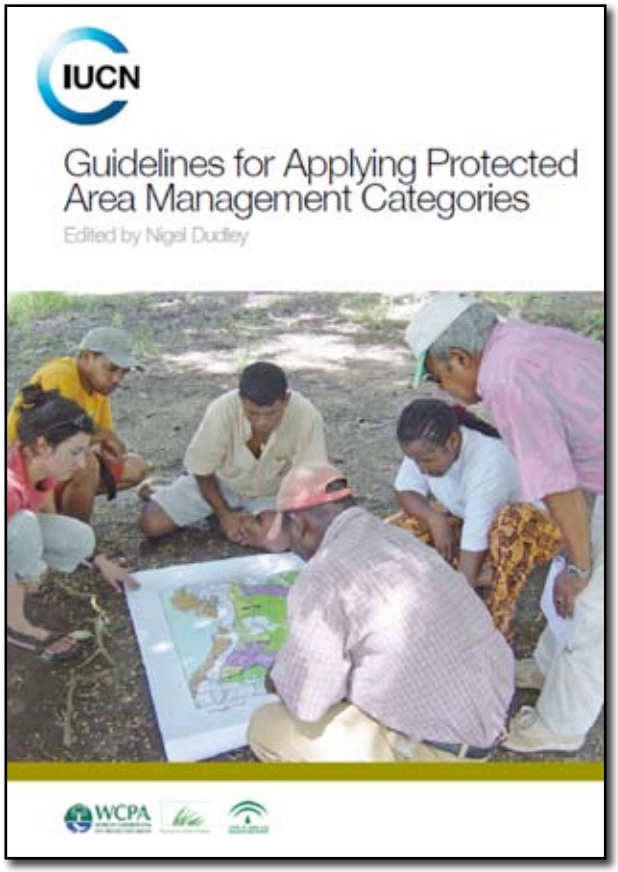



**Figure 1 – The publication of the 2008 *Guidelines* provided a new definition for wilderness areas. Photo by Nigel Dudley.**

foreign and Western social construct because it emphasizes nature as separate from civilization, and underestimates the role that mobile and sedentary tribal groups have played in shaping ecology over millennia. In our view, the conservation community has made important progress in addressing these concerns. Although some of these issues remain in dispute, we believe these differences can, to a large extent, be overcome. One of the important mechanisms for promoting the wilderness concept more effectively is the IUCN, and more specifically its protected area classification system, which is discussed in greater detail below.

## Wilderness and IUCN

IUCN's protected areas classification system includes the full spectrum of protected area types, from strict protection in places so fragile or irreplaceable that human visitation needs to be minimized, to working landscapes and sustainable use areas that often have relatively high levels of permanent human habitation alongside their biodiversity values. Wilderness protected areas are included in this classification system as Category Ib.

Recognition of wilderness within this classification system – just like recognition of the sustainable use areas – has not been without its disagreements (Phillips 2003; Locke and Dearden 2005). Wilderness was not included in the first iteration of IUCN's protected areas categories published in 1962. It took until the publication of the 1994 *Guidelines for Protected Area Management Categories* (IUCN and WCMC 1994), and concerted lobbying from a variety of organizations, including most prominently the Sierra Club and Parks Canada, and advocacy from the 2nd and 3rd World Wilderness Congresses, for wilderness to be recognized as its own category of protected area (Eidsvik 1990). Wilderness was included as Category Ib, one-half of a management type that also includes strict nature reserves. It is the only category to be subdivided in this way, reflecting the long debate within the IUCN World Commission on Protected Areas as to whether strict nature reserves and wilderness are really different.

At the World Conservation Congress in Barcelona in 2008, new IUCN *Guidelines for Applying Protected Area Management Categories* (Dudley 2008) were released, updating the 1994 document and maintaining Category Ib Wilderness. The IUCN's Member's Assembly approved the revised 2008 *Guidelines* through a resolution that affirmed all categories of protected area as important to the global conservation effort, an important milestone in the further development of the global wilderness movement. Before reviewing the changes to Category Ib Wilderness in the 2008 *Guidelines*, a brief discussion of the reevaluation of the protected area categories is included below.

## Reevaluation of Protected Areas Categories

A resolution at the 2004 WCC in Bangkok requested that the IUCN assess and revise its guidance on protected area categories, drawing on a research project on their implementation carried out by the University of Cardiff in Wales (Bishop et al. 2004). The decision to look again at the IUCN's protected areas classification system reignited intense debates about the nature of wilderness protection, questions relating to other protected area categories, and the definition of a protected area itself. Over a three-year period, IUCN members discussed a broad range of issues relating to what defines a protected area and what types of management could and should be permitted inside protected areas. More than 50 discussion papers were written and debated in online discussion groups, workshops were held on four continents, and a major "summit" was convened in Almeria in southern Spain in May 2007, which included more than a hundred specialists from around the world. The guidelines on protected area categories, launched at the 2008 WCC in Barcelona, resulted from this thorough consultation and discussion process, and set out a clear vision for protected areas in the 21st century.

IUCN policies are not binding; protected area definitions or management

strategies are set by national governments and only influenced obliquely by regional or international institutions. Since most governments are members of the IUCN, and because the World Commission on Protected Areas is regarded as the world's major grouping of protected area specialists, decisions from the IUCN inevitably carry much weight. Many governments have based their protected area legislation on IUCN policy.

## 2008 Guidelines Emphasize Conservation of Nature

The new *Guidelines* reflect a subtle realignment rather than a revolution as compared with the 1994 edition. Although there are, as before, six categories defined by management objective, the guidance for each is more detailed and precise and there are some changes in emphasis. Most significantly, there have been some important changes in the definition of a protected area.

The new definition of a protected area is: **"A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values."** This packs a lot into a short sentence, and the *Guidelines* interpret each word and phrase in more detail.

The protected areas definition must be applied according to the principles outlined in the *Guidelines*, the most significant of which is: "For IUCN, only those areas where the main objective is conserving nature can be considered protected areas." Protected areas can include a range of management objectives in addition to nature conservation, and these other objectives may even be considered equally important. However, in the case of conflict between nature conservation and other management objectives, nature conservation objectives must take precedence in a protected area. The *Guidelines* also state that all protected areas should "conserve the composition, structure, function, and evolutionary potential of biodiversity; contribute to regional conservation strategies; be large enough to fulfill their conservation aims; maintain values in perpetuity; and have a functional and equitable management structure and governance system."

This marks some important changes, which, if governments take them seriously, will alter what some countries recognize as a protected area. The change in definition from "biological diversity" in 1994 to "nature conservation" in 2008, recognizes that protected areas also include aspects of geodiversity (geology and geomorphology), and brings the phrasing closer to that of IUCN's own name. However, although the wording is a little more general, the emphasis on nature conservation increases significantly: some argued that the 1994 language was ambiguous about whether biodiversity conservation always took precedence over "natural and associated cultural resources," and there was widespread disagreement about the interpretation even within the IUCN. Contributing to the confusion was a matrix of objectives within the 1994 *Guidelines*, in which biological diversity was not always identified as the major aim for each protected area category (including in wilderness areas where it was placed second to "wilderness values"). The 2008 *Guidelines* wording, agreed to at the summit in Almeria, Spain, and in subsequent discussion within WCPA and by the WCPA steering committee, and finally supported by motions at the World Conservation Congress, now puts the emphasis firmly and unequivocally on conservation.

Another significant change in the 2008 *Guidelines* is the use of the phrase "*achieve* long-term conservation" (emphasis added). This language was designed to ensure that protected areas are managed in accordance with their stated objectives, with the understanding that management should be improved if it is substandard. However, this language opens the possibility that countries will choose to assign protected area categories based on a protected area's actual management effectiveness, rather than their stated management objective. This could lead to a perverse result, which is that governments will simply downgrade poorly managed protected areas, or even cease to recognize them as such, rather than taking added measures to improve management. Recognizing this risk, linking the choice of category to effectiveness was overwhelmingly supported by most protected area managers, though with the explicit acknowledgment that vigilance will be required to ensure that this wording is not used as a pretext for eliminating protection for areas that are not effectively managed (something that extractive industries have been seeking for years).

## Refined Categories of Protected Areas

There are, as before, six categories of protected area recognized by the IUCN, with one subdivided that includes wilderness:

Category Ia: strict nature reserve, set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use, and impacts are strictly controlled and limited to ensure protection of the conservation values.

Category Ib: wilderness areas, usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition (see Figure 2).

Category 2: national park, large natural/near natural areas protecting major ecological processes, along with characteristic species and ecosystems, which also provide environmentally and culturally compatible spiritual, scientific, educational, recreational, and visitor opportunities (see Figure 3).

Category III: natural monument or feature, set up to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave, or even a living feature such as an ancient grove.

Category IV: habitat/species management area, to protect particular species or habitats with management reflecting this priority. Many but not all such areas will need regular, active interventions to meet the requirements of particular species or to maintain habitats (but this is a change from the 1994 *Guidelines* in which all Category IV protected areas were assumed to need active habitat manipulation to maintain biodiversity, and this was part of the definition).

Category V: protected landscape/seascape, where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural, and scenic value, and where safeguarding the integrity of this interaction is vital to protecting and sustaining the associated values.

Category VI: protected areas with sustainable use of natural resources, generally large areas, mostly in a natural condition, where a proportion is under sustainable natural resource management and where low-level nonindustrial use of natural resources compatible with nature conservation is seen as one of the main aims.

**Figure 2 – Several reserves within Pirin National Park in Bulgaria are classified as IUCN Category Ib. Photo by Sue Stolton.**

Categorization is driven primarily by objective rather than by status; so, for example, a cultural landscape that is intended to be restored to a natural condition might be defined as Category Ib, whereas a cultural landscape where the same management will continue might be defined as Category V. The divisions are inevitably approximate, and there will continue to be disagreements about where a particular protected area "resides" in the system.

## What Defines a Wilderness Area?

The primary objective of a wilderness area is now agreed as being **"To protect the long-term ecological integrity of natural areas that are undisturbed by significant human activity, free of modern infrastructure and where natural forces and processes predominate, so that current and future generations have the opportunity to experience such areas."** Other objectives, implemented at levels compatible with maintaining wilderness values, include provision of public access; enabling indigenous communities to maintain traditional wilderness-based lifestyle and customs; protecting relevant cultural and spiritual values and nonmaterial benefits; and allowing low-impact minimally invasive educational and scientific research activities.

Such wilderness areas are distinguished by being:

- free of modern infrastructure, development, and industrial extractive activity, including but not limited to roads, pipelines, power lines, cell phone towers, oil and gas platforms, offshore gas terminals, mining, hydropower development, oil and gas extraction, agriculture including intensive livestock grazing, commercial fishing, low-flying aircraft, etc., preferably with highly restricted or no motorized access;
- characterized by a high degree of intactness: containing a large percentage of the original ecosystem, native faunal and floral assemblages, and intact predator-prey systems;
  - of sufficient size to protect biodiversity, ecological processes, and ecosystem services; buffer against climate change; and maintain evolutionary processes;
- capable of offering outstanding opportunities for solitude, enjoyed once the area has been reached by simple, quiet, and nonintrusive means of travel; and
- free of inappropriate or excessive human use or presence (however, human presence need not be the determining factor in deciding whether to establish a Category Ib area).

**Figure 3 – The Ruaha National Park in Tanzania is classified as IUCN Category II. Photo by Nigel Dudley.**

In addition, somewhat disturbed areas may be defined as Category Ib if they are capable of restoration to a wilderness state, and smaller areas that might be expanded or could play an important role in a larger wilderness protection strategy may also be defined as Category Ib.

This marks some important steps in defining and distinguishing wilderness areas, particularly from areas listed in Category I strict nature reserves. The latter category, generally set aside mainly for scientific research can have only very limited human visitation. In some cases, as in some sacred sites that faith groups have requested be categorized under Ia, no person is allowed to enter. In contrast to Ib, Category Ia areas are often relatively small, although large Ia reserves exist, for example, in Australia. There would usually not be human inhabitants in Category Ia, whereas use by indigenous and local communities takes place in many Ib protected areas. In some ways wilderness areas play similar roles to Category II national parks in protecting large, functioning ecosystems where evolution, provision of ecosystem services, and responses to climate change (including possibly biome shift) can

**The improved definition of wilderness in the new 2008 *Guidelines* will help reframe the global understanding of wilderness, and will help grow support for wilderness protection around the world.**

continue. However, unlike national parks, which often place an emphasis on tourism, sometimes at very intense levels supported by roads and other infrastructure, wilderness areas are only generally accessible to those limited number of people who are prepared to make the effort of traveling under their own power for long distances and camping without facilities or infrastructure.

## Next Steps

The 2008 *Guidelines* emphasize the importance and usefulness of all the protected area categories in balanced conservation strategies, and this perspective was reinforced by a resolution passed by the membership at the IUCN's 2008 WCC. This recognition, as well as the improved definition of wilderness in the new 2008 *Guidelines*, will help reframe the global understanding of wilderness, and will help grow support for wilderness protection around the world.

The 2008 *Guidelines* provide a necessary updated framework for Category Ib Wilderness. However, with the new framework agreed on, much work still remains to be done in developing the individual elements. The WCPA Wilderness Task Force, founded and cochaired by Vance Martin of The WILD Foundation, played a key role in the debates around the revision of the categories and in shaping the final guidance on wilderness areas. The Task Force has also published *A Handbook on International Wilderness Law and Policy* (Kormos 2008) that describes the elements of wilderness legislation and the various approaches many countries have taken. The Task Force's next activity is to develop detailed guidelines on management of wilderness areas to supplement existing works that tend to be country specific (e.g., Dawson and Hendee 2009).

Interest in wilderness is growing around the world. Latin America hosted the 9th World Wilderness Congress (WILD 9) in Merida, Mexico, in 2009, and Mexico itself is developing a wilderness protection system. Even in Europe where some have regarded the concept of wilderness protection as impossible to achieve, there is now significant progress. A formal resolution was passed by the European Parliament (2008) calling for recognition and protection of wilderness values, and the European Union Presidency has hosted two subsequent and substantive conferences in Prague (2009) and Brussels (2010). With such momentum growing for wilderness protection around the world, additional guidance for protected area authorities on the maintenance and management of wilderness values would be very timely.

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# What Future for Wildness within a Climate-Changing National Wildlife Refuge System?

BY ROGER KAYE

## Introduction

Wildness, that primal and evocative, elusive and unquantifiable quality of wilderness – can it persist in the face of accelerating climate change? Can it continue to contribute to the diversity of values held by the National Wildlife Refuge System?

Yes … *if* the U.S. Fish and Wildlife Service (USFWS) recognizes wildness as a distinct resource encompassing multiple values and benefits, and specifically prescribes its preservation in some areas – and, thus, forgoes management interventions intended to perpetuate current or prescribed conditions, including numbers and assemblages of preferred species and existing habitats. Whether wildness will be diminished, lost, or perpetuated within the Refuge System ultimately depends on whether or to what degree the agency allows some ecosystems to find their own solution to changing conditions, to adapt and evolve as they will.

## What Is Wildness?

Quite unlike the resources the refuge system was established to protect, wildness is intangible, immeasurable, and non-utilitarian. It is, first, a condition of a landscape characterized by its freedom from the human intent to alter, control, or manipulate its components and ecological and evolutionary processes. Wild is not synonymous with pristine or virgin. No place on Earth remains so. Rather, it is the state wherein those processes of an area's genesis, free from human purpose, utility, or design, are allowed to shape its future. Thus, wildness is not the absence of all human effect; it can persist in environments that have been altered or continue to be influenced by external human factors such as climate change as long as we refrain from interfering with nature's autonomous response.

Roger Kaye. Photo by James Barker.

Wildness prevailed through the 200,000 years of Homo sapien history, until the recent advent of herding and agriculture, some 15,000 years ago. Environmental historian Roderick Nash (1982) describes this Neolithic Revolution as the "central turning point in the human *relationship* to the natural world" (p. xiii, emphasis added). True, precontact peoples had effects on the environment, including use of fire in some areas. But until the Neolithic era, our hunting-gathering species was physically and psychologically embedded within the flow of natural processes. The notion of wildness only

Figure 1 – Bluffs at Rivers Bend Arctic Refuge. Photo © 2010 Jeff Jones.

became conceivable through the development of its antithesis, human control and domestication of the environment. Its root word – *wil* – reflects the emergent dichotomy between lands that are self-willed and those subject to human will. Thus, as a condition dependent upon human intent, defined by our willingness to leave an area's functioning outside the realm of our volition, wildness also embodies, inherently and inseparably, a distinctive human-landscape relationship.

## Wildness and Wilderness

With roots in Old World philosophies, the Renaissance, Enlightenment, romanticism, and the scientific revolution, the American conception of wildness evolved through the 19th and 20th centuries, attaining statutory protection with the U.S. Wilderness Act of 1964. The act's core definition of wilderness, as an area "where the earth and its community of life are untrammeled by man" essentially defines the wild condition. Howard Zahniser (1959), chief author of and advocate for the act, purposely chose the key word *untrammeled*, which he defined as "not being subject to human controls and manipulations that hamper the free play of natural forces." Thus, in *The Need for Wilderness Areas* (1956), his canonical essay explaining the intent of his pending wilderness bill, Zahniser explained the "need" to preserve some areas "that are so managed as to be left unmanaged" (p. 37).

This need went beyond protection of the aesthetic, recreational, ecological, and scientific values of special areas from the increasing environmental degradations accompanying the post–World War II march of progress. Needed also was an antidote to the underlying threat Zahniser saw as human hubris arising from misuse of our growing science and technology-based power over nature. Our underlying need, he said, was to cultivate "the humility to know ourselves as the dependent members of a great community of life … to sense dependence and interdependence, indebtedness, and responsibility" (Zahniser 1956, p. 40). Areas set apart from our dominance, where we yield our power to manage and control to nature's primacy, are touchstones to this way of knowing ourselves. Their wild presence serves as a symbol of our capacity for humility and restraint in relating to the larger biosphere we jointly inhabit.

"Perhaps, indeed, this is the *distinctive* ministration of wilderness to modern man," Zahniser (1956) concluded, "the characteristic effect of an area which we most deeply need to provide for in our preservation programs" (p. 40, emphasis his). Perhaps ministration, meaning to minister to, to serve the human need for meaning and connection in the larger scheme of things, best describes this dimension of wildness as a human-landscape relationship.

Beyond this symbolic function, its ancestral resonance and connection to origins, wildness also holds an appealing mystique because, unlike tangible resources, it cannot be counted, measured, or weighed. But this elusiveness also makes it vulnerable, difficult to provide for within the dominant resource management paradigm. And as Bill McKibben (1989) reminds us, as both a landscape condition and as a kind of relationship, wildness can go extinct as surely as an endangered species.

## The Emerging Conflict

Wilderness status has been quite successful in protecting both the resources and wildness of designated areas from development, resource exploitation, harmful public uses, and the like – the focal threats at the time the 1964 act was passed. However, the law did not anticipate global-scale external threats; its framers did not foresee the emerging conflict, brought to the fore by climate change, between perpetuating an area's wildness and managing for its wildlife and other resources. The problem lies in the fact that the act specifies that a wilderness be managed to perpetuate its untrammeled conditions and also "so as to preserve its natural conditions" (Sec. 2[c]). Although the act did not define "natural conditions," testimony from the bill's 18 congressional hearings reveals that proponents intended that wilderness would perpetuate resource conditions such as wildlife species, their habitats, ecosystems, and other components "unimpaired" (Sec. 2[a]); that is, essentially as they were at the time of designation. The recently described "dilemma of wilderness management" posits that in many wilderness areas, focal species and certain other resource conditions will not be so perpetuated without management interventions that

**Figure 2 – Creek at midnight in June in the Arctic Refuge. Photo © 2010 Jeff Jones.**

would compromise or be antithetical to preserving the landscape's wild, untrammeled condition (Cole and Yung 2010).

## Refuges and Climate Change

Some authorities deny this potential incongruity within the stated purposes of the act. In McCloskey's analysis (1999), the act's definition section referring to "natural conditions" follows the first and key point about being untrammeled. Thus, he argues that any meaning given to the phrase "natural conditions" needs to be consistent with the idea of not "trammeling" wilderness. Noting authorial intent, George Nickas (2011 pers. comm.) points out that Howard Zahniser (1953) warned against allowing management programs to erode wild character. "We must always remember," Zahniser stated, "that the essential quality of the wilderness is its wildness" (p. 11).

Nevertheless, the potential for conflict between the act's untrammeled-wildness purpose and some refuge purposes is more apparent. The problem is twofold. First, most refuges have statutory purposes or other mandates to protect certain species that, in some cases, would require management interventions to enable them to resist or adapt to climate change impacts. Some refuges were proposed or supported for wilderness designation because this status was seen as an effective "tool" for protecting high-interest species and their habitats from traditional threats.

Contributing to this potential conflict among purposes is the fact that the Wilderness Act specifies that its purposes are to be "within and supplemental" to unit (refuge) purposes (Sec. 4[a] and [b]). The current Service Wilderness Stewardship Policy (2008) describes wilderness purposes as "additional purposes of the area" and interprets them as being of lower priority than the wildlife-focused refuge purposes. Consistent with this priority of purposes, the unofficial Refuge System motto, "wildlife comes first," also applies to refuge wilderness.

**Accelerating climate change will increasingly threaten some species that wildlife refuges are mandated to "conserve" and will result in calls for management interventions to protect them.**

Recognizing that accelerating climate change confronts refuge resources with serious and unprecedented threats, the USFWS has come to officially acknowledge that "the historical concept of refuges as fixed islands of safe haven for species is no longer viable" (Scott and Griffith 2008, p. 3), and that "some populations and species may decline or be lost, and some will only survive in the wild through our direct and continuous intervention" (USFWS 2010, p. 5).

Some potential means the USFWS has identified for confronting climate change on refuges include use of prescribed fire; fire suppression; assisted migration and dispersal of animals and plants; facilitating growth of plant species more adapted to future climate conditions; habitat manipulation to promote connectivity; food propagation and supplemental feeding to compensate for phenological shifts; construction of seawalls and levees; placement of watering structures; and reducing other stressors on conservation targets, including predator control.

Although their potential unintended consequences are little known, most such interventions could serve to perpetuate focal species and habitats in environments becoming less suitable for them, or at least forestall their decline or loss. However, to varying degrees, use of each of these tools would diminish the untrammeled, wild condition of wilderness. Their use would diminish the scientific value of wilderness as a baseline for understanding how unmanaged ecological systems respond to climate change, and as a "control" for assessing the effectiveness of interventions and restoration efforts implemented elsewhere. Such interventions would lessen the aesthetic value inherent in a landscape's unhindered connection to the processes of its origin. Further, they would conflict with the function of wildness as a symbol of humility, restraint, and respect for what remains of the world we do not control.

Following current USFWS policies, climate change responses in wilderness would be decided primarily on a case-by-case basis at the refuge level. Reactive more than proactive, this ad hoc approach would determine whether or how much wildness will be perpetuated in Refuge System Wilderness without a comprehensive and deliberate determination, primarily through local decisions, mostly small, but incremental, and cumulative. In his recent proposal for "planned diversity" within the Wilderness System, David Cole (2011) argues that this common agency approach is "a recipe for a homogenized wilderness system in which all values are compromised and none are optimized" (p. 14).

**Figure 3 – Pyramid Hills from valley floor in the Arctic Refuge. Photo © 2010 Jeff Jones.**

Thus, in view of the central focus on wildlife populations and the intervention efforts being considered to perpetuate them in the face of climate change, it is the author's opinion that without specific provisions to prioritize and fully perpetuate it in some areas, wildness – the landscape condition and the relationship it subsumes – could be significantly diminished or lost in the Refuge System Wilderness.

## Recommendations for Perpetuating Wildness

The following recommendations call for the USFWS to proactively address the issue of perpetuating the wildness of designated wilderness in the face of accelerating climate change.

### *Recommendation 1*

USFWS policy needs to prescribe a procedure for deciding whether, where, or to what degree each area's Wilderness Act wildness purpose or its refuge wildlife purposes will have primacy, where maintaining one would compromise the other. Each refuge would follow the procedure during revision of its Comprehensive Conservation Plan, which would be the primary vehicle for translating policy guidance into refuge-specific programs.

Cole (2000) summarizes this approach as "allocating separate lands to each opposing value and embracing diversity" (p. 8). Going further, Peter Landres (2009) proposes that "policies could state what types of wildernesses would be most appropriate to resist climate changes by any and all means necessary to preserve elements of naturalness, and what types of areas would be most appropriate for accepting the changes that occur to preserve the untrammeled quality of wilderness." In "Let It Be: A Hands-Off Approach to Preserving Wildness in Protected Areas," Landres (2010) offers a number of factors, including an area's legislation, size, and remoteness, for determining where wildness primacy would be feasible and preferable, and where it would not. A comprehensive and systematic process, recognizing the role wildness plays in perpetuating the Refuge System's diversity of values, would be needed to make such a determination. A key component would be a vulnerability assessment indicating the likelihood of an area's being resistant or vulnerable to significant ecological regime shifts. In general, areas that are determined to be most resistant to vegetation shifts are best suited to serve as "climate change refugia" and be managed for wildness primacy.

### *Recommendation 2*

The USFWS's mandate to maintain refuge biological diversity should be revised to include the range of unfettered ecological system responses to global change as an element of the Refuge System's biological diversity. The USFWS's Biological Integrity, Diversity, and Environmental Health Policy (USFWS 2001) defines biological diversity as "the variety of life and its processes" and directs refuges to "first and foremost" maintain existing levels at the refuge scale. It prescribes assessment of biological diversity in relation to "historic conditions," defined as conditions resulting from "natural processes" that were "present prior to substantial human related changes to the landscape." The USFW's Wilderness Stewardship Policy (USFWS 2008) further provides for interfering with "natural" processes when they become "unnatural." But in an ecosphere increasingly being altered by climate change (human-caused, to an unknown degree), when do these processes become "unnatural" and thus at what point is intervention justified?

A recent USFWS reinterpretation describes historic conditions more as a frame of reference for understanding change than as a condition to sustain or return to (Scott and Griffith 2008, p. 13). USFWS policy should adopt this interpretation and further, should define maintaining "the variety of life and its processes" to explicitly include the various ways life processes respond to changing climatic conditions when left free from intervention, left wild.

For those wilderness areas where the landscape's autonomous adaptation to change is unhindered and accepted as a component of the Refuge System's biological diversity, the current need for a number of problematic distinctions would be alleviated. Their stewardship would not require determining whether conditions and processes are natural or unnatural, historical or within a known historic range of variability (HRV), or the degree to which their climate change effects are anthropogenic.

Using historic conditions as a means of understanding change, but not as a basis for interfering with it, would also allow more options for the future. An area dedicated to accepting and observing change could later be reclassified and manipulated if the benefits of perpetuating or restoring some of its components come to outweigh the benefits of leaving it wild. Once interventions are implemented, however, some of the scientific, aesthetic, and symbolic value of this wild condition, and thus some Refuge System diversity, would be irrevocably diminished.

**Figure 4 – Ridges in the Arctic Refuge. Photo © 2010 Jeff Jones.**

### *Recommendation 3*

Statutory and policy directives for the USFWS to "conserve" refuge wildlife and habitats need to be reconsidered in light of accelerating climate change. *Conserve* is the cardinal word of the agency's mission statement and is defined as meaning "to sustain and, where appropriate, restore and enhance healthy populations of fish, wildlife, and plants" (16 USC §668dd). As commonly understood, "healthy populations of fish and wildlife" refers to current or desirable numbers of favored species.

Historically, this definition of *conserve* has functioned well, but it needs modification to acknowledge that where habitats become unsuitable for focal species, they can't be sustained without major interventions that would not be appropriate or practicable in some areas. New realities require rethinking this canonical term, along with its assumptions and implied promise to prevent undesirable changes to highly valued resources.

I suggest considering a definition of *conserve* that, at least for wilderness purposes, includes sustaining historic numbers and assemblages of species in habitats that remain suitable for them, and perhaps restoring them where they can be sustained without continuous intervention. Where habitats are changing faster than resident species can adapt, the meaning of the word could be expanded to include protection of evolving habitats for the species that will replace them.

### *Recommendation 4*

The USFWS needs to place greater emphasis on the use of social science research, communications programs, and public engagement in making and gaining support for the difficult decisions that lie ahead. The agency has appropriately responded to climate change by intensifying biological research and monitoring efforts to describe existing effects and by developing predictive models. But although decisions regarding where and how much wildness to preserve must be informed by science, they will ultimately be value-based and made through public process in the social and political arenas.

Research is needed to assess the many socioeconomic consequences of alternative approaches. It is needed to improve understanding of the public's knowledge and perspectives relative to the challenges and to develop the most effective means of informing and engaging various constituencies. Before alternatives are presented, a comprehensive process needs to be in place to inform and facilitate the vigorous discussions that will be necessary and to prepare stakeholders for the difficult choices and trade-offs that, in many areas, will be inevitable.

### *Recommendation 5*

To minimize both future conflicts in wilderness and compromising the importance of its wildness, the likely and potential effects of climate change should be more significant considerations in determining whether wilderness study areas will be recommended for designation. Areas more vulnerable to ecological regime shifts and with high-interest species at risk will be more subject to calls for interventions that would be problematic in wilderness and, if allowed, would lessen its meaning as a place of wildness. More restrictive criteria are needed for determining which areas are suitable for wilderness designation. We must recognize that although climate change increases the importance of the many functions wilderness serves, it will also increase the need for refuge lands

available for hands-on management of wildlife populations and habitats.

## Conclusion

Accelerating climate change will increasingly threaten some species that wildlife refuges are mandated to "conserve" and will result in calls for management interventions to protect them. For wilderness areas, such actions would conflict with the key wildness purpose of the Wilderness Act, and should only be considered where truly necessary to meet other legal obligations.

But to perpetuate the fullest possible degree of wildness within the Refuge System, the USFWS needs to develop a formal procedure for identifying some wilderness refuges as true hands-off, nonintervention areas. Within them, ecological systems would be allowed to adapt and evolve as they will, accepting that the populations of some preferred species will decline or be replaced by others more suited to the changing climate. This would require modification of some refuge purposes and policies and perhaps amendment to some underlying statutory authorities that did not anticipate what the USFWS (2010) now declares "the transformational conservation challenge of our time" (p. 8).

The USFWS's management-focused culture must evolve to better appreciate the diversity of values and benefits wildness contributes to the Refuge System, including the symbolic and existence values Zahniser wrote about. The USFWS did so enlarge its perspective in embracing its nonutilitarian Endangered Species Act (1973) mandates for preserving species "of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people" (Sec. 2[a] [3]). Now the USFWS needs to more fully recognize how wildness also embodies these values, and that it too is endangered and in need of specific provisions to ensure its preservation.

**Figure 5 – Taiga Hills in the Arctic Refuge. Photo © 2010 Jeff Jones.**

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ROGER KAYE is the wilderness specialist and pilot for the Arctic National Wildlife Refuge, USFWS. This article is based on the author's judgment, interpretation, and emphasis, and does not constitute a policy position of the author's agency.

# Marine Wilderness

## *A Conservation Strategy for the Oceans*

BY JULIE ANTON RANDALL

Marine wilderness is the concept of keeping marine environments in a wild state and restoring the structure and function of marine ecosystems under management plans designed to value wilderness character and benefits. A marine wilderness conservation strategy can help eliminate or reduce stressors caused by human activity in threatened marine habitats. To succeed, this strategy must be deployed at three levels: national waters and coastlines; regional transboundary cooperation; and international agreement and coordination for the high seas.

The strategy will require making a valid and irrefutable case for marine wilderness:

- Economically – It is less costly to conserve natural ecosystems than to regenerate them or replace their services to humans; the longer we delay our response, the greater the cost will be, and it will be compounded by multiple factors.
- Biologically – Marine wilderness protection nurtures habitat and species recovery and provides resilience to climate change and other ecological damage.
- Socially – Marine wilderness avoids the permanent loss of marine species and environments that are culturally important to many indigenous people. It also halts the loss of important protein sources, medicinal cures, and other beneficial marine products. It mitigates mass oceanic and coastal change impacting living conditions on coasts and elsewhere.

## An Inspiring Vision and Practical Conservation Approach

Marine wilderness is distinct from other types of marine protected areas (MPAs). Applying terrestrial wilderness concepts in a marine context, marine wilderness

- is intact nature, wild in character and function, that can sustain itself as such;
- visually appears wild;
- is a place where natural processes are dominant, and humans do not retain control;
- is undeveloped by humans and is devoid of built infrastructure and industrial activity; and
- is used for human subsistence, cultural, and recreational purposes – as long as such practices do not permanently alter the wild character of the area.

**Julie Anton Randall.**

*Marine* is a term covering oceans and their depths, coastlines, intertidal zones, lagoons, estuaries and large lakes, and glaciers and ice, as well as coral reefs and other living hard- and soft-bottom habitats, and vegetative resources formed by mangroves, kelp forests, and sea grass meadows, among others.

There are thousands of MPAs, and they vary widely by function and effectiveness. MPAs may be located in the 200-mile (322 km) exclusive economic zone (EEZ) of a given country or on the high seas. They may be no-take reserves or allow commercial fishing. They might be biosphere reserves with zoned protection and use. Or they might be marine sanctuaries designed to stop hunting of whales, cetaceans, or other marine mammals either within an EEZ or on the high seas. In reality, enforcement of MPAs is often not backed by a consensus of stakeholders. As a type of MPA, marine wilderness will require a common definition and management objectives that are adaptable at local, national, transboundary, and international scales.

Marine wilderness as a type of MPA can take several forms: as part of or an extension of a wilderness designation involving land, a subset of a larger (established) MPA, or a new wilderness designation.

## Progress in Defining Marine Wilderness and Setting Management Objectives

The WILD Foundation initiated and has stewarded the topic of marine wilderness within the conservation community for

**Marine wilderness conservation is an understandable concept and a compelling solution to ocean decline – and a vision that offers hope and inspiration.**

several decades, and provided a platform for discussion in successive World Wilderness Congresses. Most recently, WILD established the Marine Wilderness Collaborative (MWC) as a mechanism to engage stakeholders internationally in time for a special workshop at WILD9 (9th World Wilderness Congress) in Merida, Mexico, in October 2009 (WILD/USFWS 2009). There, the MWC considered a draft marine wilderness definition and management objectives prepared by WILD and the U.S. Fish and Wildlife Service, which was considering applying a more formal wilderness concept to certain National Wildlife Refuges (marine national monuments) exhibiting wilderness character.

Initial MWC input resulted in a Conserving Marine Wilderness document that served as a starting place for the Marine Wilderness Working Group (MWWG) of the North American Committee on Cooperation for Wilderness and Protected Areas Conservation (NAWPA Committee). The NAWPA Committee is composed of the heads of six government agencies that oversee wilderness and protected areas in Canada, the United States, and Mexico. It formed under the Memorandum of Understanding (MOU) on Cooperation for Wilderness Conservation signed at WILD9. The MOU is the first international agreement dedicated to wilderness (extended officially to protected areas by the agency heads in Banff in May 2011) (MOU 2009). It sanctions cooperative work that heralds the critical role of protected areas in response to climate change, the extinction crisis, and other environmental decline. With shared values and approaches for conserving wild nature, the hope is that the countries of North America will adopt complementary policies and practices that provide strong protection of common species and habitats spanning the continent.

After more than a year of deliberation, the NAWPA Committee reached consensus on a document encompassing the purpose of marine wilderness and its definition and management objectives in a North American context. One option of the NAWPA Committee will be to share it with IUCN and suggest its adoption or adaptation. The next result could be a marine wilderness definition and set of management objectives with international consensus that is replicable by countries in other regions of the world.

With such a tool in hand, countries could begin by identifying large-scale MPAs in North America with de facto wilderness and protected areas with the provision to protect subsets of marine wilderness in parks, refuges, and MPAs, with the effect of law.

## Implementing an Effective Marine Wilderness Conservation Strategy

**Making a defendable case for marine wilderness** – Certain measures are necessary to convert a consensus marine wilderness concept into an effective conservation tool. Six actions are suggested:

1. Present evidence of the swift decline of our oceans and marine areas in descending order of how marine wilderness protected areas could actually address the problems; mitigate further habitat loss and overexploitation; mark and protect identified swaths of the marine environment from pollution; and provide for ecosystem resilience to climate change.
2. Make a case for marine wilderness protection that recognizes its contribution to repairing and sustaining the food web and interconnections among species. Acknowledge wilderness areas for providing habitat critical to reproduction and maintaining the natural sex and age structure of species.
3. Identify places where legal protection of marine wilderness can call attention to and counteract socioeconomic impacts of marine decline brought on by the crash of fisheries and where offshore foreign commercial interests are stripping local communities of their livelihoods.
4. Showcase the recreational value of marine wilderness, including the rewarding physical challenges, and highlight the special opportunities for spiritual renewal and solitude that only marine wilderness can offer.
5. Use marine wilderness as a natural laboratory and a baseline for the study of climate change effects, such as ocean warming, acidification, and sea-level rise, that compound other ecosystem threats.
6. Make the economic case for marine wilderness protection:

- Account for the value of marine ecosystem services and the cost to restore or replace them.
- Recognize the reliance of poor communities on marine areas for protein sources and income – those human populations that might become welfare/food-aid

**Figure 1. Erich Hoyt, Senior Research Fellow at the Whale and Dolphin Conservation Society has noted (1993) that "In order to be effective, cetacean protected areas must also protect prime fish-rearing habitat and productive upwellings and other important ecosystem processes." Photo © Jaime Rojo.**

dependent without them.

- Make macroeconomic-scale arguments regarding the fluidity of the oceans and damage by one nation impacting the economy of another.

**Deploying a variety of MPA mechanisms that consider location and scale** – To effectively and rapidly counteract marine decline, a marine wilderness conservation strategy might identify and target

- high biodiversity areas and concentrations of species in places that include coral reefs, mangroves, and sea grasses;
- mating, spawning, and nursery areas;
- primary foraging grounds;
- oceanic migratory pathways and critical stopover habitat for migratory species, including birds;
- habitat of deep-sea fish species that take longer to grow, mature, and reproduce; and
- areas particularly key to mitigating climate change effects on the food web (plankton, for example).

Large areas have the advantage of typically being more cost-effective to manage. A larger perimeter usually means penetration of core areas is more difficult. However, the establishment of large areas can generate a perception that the "job is done" (Jones 2011), leaving smaller but usually less remote – and more coveted – sites without protection. These unprotected sites are likely places where fisheries are collapsing, coral reefs are dying, and mangroves are being destroyed.

An effective marine wilderness strategy will also consider the importance of analyzing and protecting the ecological connectivity between land, coastal, and marine areas. Safeguarding certain land- and seascapes through a single strategy can compound conservation benefits. Connected land- and seascapes often cross national boundaries. Regional cooperation can be achieved through initiatives such as the North American MOU on Wilderness and Protected Areas that promulgate a common understanding and commitment.

A marine wilderness strategy can utilize and adopt a variety of MPA mechanisms. Opportunities include the following:

- Examining existing MPAs for marine wilderness qualities and deliberately protecting those qualities within existing jurisdictions – including established terrestrial wilderness and protected areas that extend off the coast or become "marine" areas during high tide.
- Legally designating marine wilderness areas as a distinct type of MPA.
- Addressing the governance of marine wilderness on the High Seas at the level of United Nations (UN) General Assembly and UN Security Council.

## Utilizing Marine Wilderness as a Relevance Strategy

Marine wilderness can be used as a valuable tool for raising public awareness of the ocean's demise. Marine wilderness conservation is an understandable concept and a compelling solution to ocean decline – and a vision that offers hope and inspiration (Marine Conservation 2011).

Case examples can be used to "market" the benefits of marine wilderness conservation – which include species recovery, climate change mitigation, and ecological resilience – to policy makers and the general public, and involve indigenous communities in long-term conservation. Criteria for selecting the examples might include geographic representation and the presence of charismatic species, plus consideration of major fish spawning/nursery grounds, migratory pathways, and connectivity between land- and seascapes providing corridors of wildlife habitat and allowing for adaptation to climate change. Important examples might also include coral reefs and mangroves that illustrate how marine wilderness conservation can be used to stabilize productivity by the balance of nature.

There must also be a realistic understanding of what marine wilderness protected areas cannot control – such as the North Pacific Gyre ("the Great Pacific Garbage Patch") in the high seas where marine life also gathers (Rogers and Laffoley 2011), algae blooms in the Gulf of Mexico, and invasive species drift.

In conclusion, gaining traction for ocean conservation is difficult among policy priorities of nations that do not recognize that our "debt" owed to future generations includes the cost to recover the marine environment. A realistic strategy may be to start with easy targets – marine wilderness zones within existing MPAs. However, true reversal of oceanic decline will entail establishing marine wilderness protected areas in contentious but ecologically critical sites and also taking the marine wilderness concept to the high seas.

A North American scale consensus and action plan regarding marine wilderness is real and underway. The 10th World Wilderness Congress (WILD10), proposed for Europe in 2013, can offer a platform for discussion of the North American marine wilderness concept, possibly attracting the attention of the UN Assembly and other international bodies with jurisdiction over the oceans. WILD10 also aims to engage stakeholder communities in a transparent public forum on marine wilderness. Government agencies with responsibility for wilderness and protected areas conservation will assemble in a special forum. WILD10 will raise public awareness of our imperiled oceans, and take steps toward forging a global marine conservation strategy with wilderness as the centerpiece.

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***Continued from WILDERNESS SPIRITUALITY, page 3***


In this issue of *IJW* read about Peter Ashley's inquiry into defining the spiritual aspects of wilderness. Other contributions to this issue of *IJW* define wilderness internationally with IUCN, propose the potential for marine wilderness, report on the ecosystem representation in U.S. wilderness, and explore the experiences of veterans and youth in wilderness.


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ALWRI RESEARCH NOTE

# Mapping Wilderness Character

## *New Tools for New Concepts*

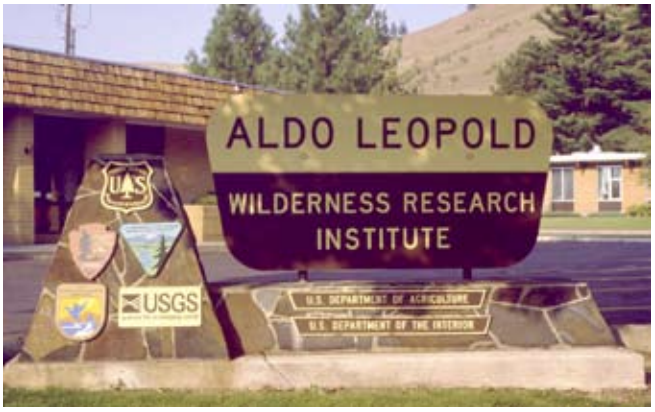
BY JAMES TRICKER

The recent development of an interagency strategy to monitor wilderness character (Landres et al. 2008) allows on-the-ground managers and decision makers to assess whether stewardship actions for an individual wilderness are fulfilling the mandate to "preserve wilderness character." Since nearly all wilderness monitoring data depict spatial features, a recent Aldo Leopold Wilderness Research Institute study investigated whether these data can be combined to provide a spatially explicit understanding of the changes and trends in wilderness character over time.

Using the 3.1 million acre (1.25 million ha) wilderness in Death Valley National Park (DEVA) as a study area, the goals of this research were to

- show the current overall condition of wilderness character and how it varies across the landscape,
- analyze the effects of different planning alternatives being considered in the forthcoming Wilderness and Backcountry Stewardship Plan on wilderness character, and
- provide a baseline from which future monitoring could show the trend in wilderness character over time.

All major decisions to build this map of wilderness character were based on the knowledge and experience of DEVA staff. Using the indicators from Landres et al. (2008) as a framework, measures were identified to depict where wilderness character has become degraded from a baseline of intactness. Using GIS techniques, spatial data for these measures were processed into grids on a common relative scale. Each measure was then weighted by DEVA staff to reflect its importance in relation to the other measures. Where data for identified measures were unavailable or deemed inadequate by DEVA staff, weighted placeholders were created to allow these measures to be included in the future. Maps were generated for each of the four qualities of wilderness character – natural, untrammeled, undeveloped, and solitude or primitive and unconfined – which were added together to produce an overall wilderness character map.




The wilderness character map, reclassified into 10 equal categories (see Figure 1), shows the range in quality of wilderness character across the wilderness. A majority of the wilderness character in DEVA is of high quality, with the top 10% areas located in the northern section of the park. The small areas of low quality wilderness character are largely the result of overlapping types of degradation occurring near a particular feature; for example, noise and viewshed impacts, invasive plants, and higher visitor use all occur along road corridors.

Major limitations and cautions about this effort include the following:

- The map only records areas where wilderness character has been degraded, and does not incorporate features that enhance wilderness character.
- The map may facilitate the inappropriate creation of "sacrifice zones" within the wilderness, directly contravening congressional and agency mandates to preserve wilderness character across the entire wilderness.

***Continued on page 40***

# Veterans Expeditions to Wilderness and Regaining Health

BY STACY BARE

Returning home from war or military service, veterans should have a first option of experiencing the great American wilderness to help heal any trauma associated with combat and overseas service. Even before we send in the psychiatrists and doctors, unless they're needed to get an individual mobile again, a supported trip to the wilderness should be offered, if not mandated, within the first two to four weeks of a serviceperson coming home.

Success or failure not withstanding, war is a bloody, messy, difficult experience.

In the last 10 years, combat increasingly has occurred in urban and suburban settings similar in many ways to the built environment of the United States … but with a difference. Tires may explode on the side of a road and kill a teammate in the vehicle in front or behind you. Sniper fire from a high rise could disable your best friend. Helicopters hover overhead or come crashing down, raining hellfire onto the enemy or signaling an extraction of your team out of, or an insertion in to, a combat zone.

War is also technological. Machines, computers, logistical systems, and so forth are omnipresent in war (see Figure 1). Even during combat, computer jocks and analysts way behind the lines produce endless reams of dreary reports, Excel spreadsheets, and PowerPoint presentations, trying to capture the reality of the war by requesting data through endless radio calls to those in the field. Infused with technological demands, war can be decidedly unwild, or not natural.

Meanwhile, as war proceeds, those at home are largely unattached to it, or to the men and women who serve on their behalf. Many citizens may not even be able to locate the war on a map. While I was at war, I perceived most noncombatants back home as enjoying a soft life making inconsequential decisions such as which television show to watch, which outfit to wear, or where to go out on the weekend. A nonveteran may even think they understand the realities of war after hours of playing one of the many video games modeled on combat.

**Stacy Bare ice climbing in Ouray, Colorado. Photo by Lourdes Izziray.**

Society at large, enjoying its softness, thinks that it's the comforts of civilization and the great advances in medical and psychological practices that will help our veterans move forward from military experiences. Our country has responded as if this were the case: We have gleaming hospitals, mounds of prescription medications to choose from, and a host of events designed to make welcome the military veteran, including free restaurant meals or new wardrobes, deep discounts in higher education, free tickets to sporting events, and even discounts to amusement parks.

These "thank you's" are not unwelcome. It's only that, by themselves, they are not effective because the experience of war from which the veteran is emerging is so very different. Consider the following:

- How different is driving to and from work from driving in convoy into a firefight or an improvised explosive device?
- How different is waiting in an airport to visit your in-laws from waiting in an airport to see the caskets of your

**Figure 1 – Stacy Bare with his military team in Baghdad. Photo courtesy of Stacy Bare.**

platoon mates loaded onto a plane and flown home?

- How different is sitting in a classroom from sitting in a mission brief?
- How different is shopping in a mall from chasing an insurgent through a crowded market full of strangers?

Unimpressed with the softness of the civilization at home, many veterans are not willing to, or even wanting to, assimilate back into society. Although the war experience may have left a significant traumatic impact, it also led many to an extreme sense of camaraderie, focus of mission, and physicality that is simply lacking in the day-to-day American experience (see Figure 2). Life outside of war is boring. Uninspiring.

## Returning Home

A marine sergeant tells the story of questioning why he fought while sitting inside a large chain restaurant two weeks after he returned from deployment. Had he really fought for cheap, gimmicky cocktails and two-for-one appetizers? Why was it that no one around him seemed to know that thousands of men and women were at that very moment fighting ill-defined wars in strange countries? Why was it that someone was bitching that their steak was overdone?

I was no different from other veterans when I came home in 2007, but I did all I could to fit back in and start churning along with the rest of America anyway. However, before I really settled in to try and do the "right thing" by going to graduate school and, I hoped, setting myself up to be accepted into the ranks of the upper-middle class, I spent three weeks surfing in South Africa. The waves abused me, knocked me down. and gave me bruises. Every morning, my shoulders ached from paddling out past the violent shore break, only to get knocked off my board by powerful waves on uneasy feet.

I loved it, and while the next few years would be full of cocaine, broken relationships, suicidal ideations, and failed attempts at traditional therapy – as well as no surfing – those three weeks off the rugged coast in South Africa anchored me to a reality more important than the one I was living in. In my darkest moments, I returned to the tranquility of a hidden bay just east of Cape Town, where it poured down rain as I sat on the beach, surfboard chewed up in pieces, and stared at the raging water and sheltering cliffsides. I was at peace there.

I found myself missing war. Life made sense and I clearly understood my mission, my purpose, and my role. In nonmilitary life, I could not. In

**Figure 2 – A group of children in Iraq playing with Stacy Bare for the camera. Photo courtesy of Stacy Bare.**

**Figure 3 – A Veterans Expedition on top of Longs Peak with Stacy Bare in Colorado. Photo courtesy of Stacy Bare.**

2009, while living in Colorado, a friend of mine got tired of my constant threats of suicide and wanting to end it all or return to war when he said to me, "Well do something about it. Either end it, go back in, or come out rock climbing with me." I went rock climbing, and although I recognize his approach to healing was certainly not a textbook approach, it worked for me, and in his offer of wilderness, I found salvation.

## Wilderness and Reconnection

The wilderness allowed me to be me. I understood my mission, my purpose, and my role. Rocks were not sympathetic when I fell on them, but seemed to always offer a handhold at the right moment and constantly offered yet another chance at success. The trees did not judge me, but from time to time kept me from sliding off the mountain, just as easily as they knocked off my hat.

Ultimately, I was able to meet other people in a setting free from normal social pressures. Bonds of trust were more easily built as I exchanged information with other hikers and climbers about bears we had seen, how best to weather the coming storm, belaying someone on a challenging rock pitch, or discussing around camp fires the beauty of sunsets from different vantage points on a trail. The soft society, which angered me so much, and the hard society which I had left behind, never got mentioned. The focus was simply to get to the base of the next climb, to the overview of the next hidden alpine lake.

Around campfires and after big days in the mountains, I began to open up to others as others opened up to me. I was surprised to meet so many veterans in the wild, and even so many more people who were not veterans, but in some sense, might as well have been. I learned from men and women I had grown to look up to as superior climbers and athletes, that it was okay that I had struggled with drugs; so had they. It was okay that I dealt with depression every day; so did they. It was okay that I had been, am still from time to time, suicidal. They had healed, improved, gotten better, but they never went to the wild expressly to heal, they went into the wild for the wild itself and ended up healing, and ended up rebuilding their trust in others. The wild is enough in and of itself, and the side effects are wonderful.

I learned to sit still in the wilderness, to focus on the task at hand, and let the rest of life fade away. Escaping from the constant hum of civilized life, I had the quiet and time to think or not think as I chose. To quote from a former platoon mate of mine with whom I have climbed in the Rocky Mountains, "I came off the climb and felt guilty that I had not thought of those who had died all day long … then I realized they were right next to me all day. At the end of the day, their faces and laughter became easy to remember again."

From here, I jumped off into a number of different directions, including more traditional forms of therapy and a willingness to engage the Veterans Administration (VA) with my issues in hand. The VA still gives me the heebie-jeebies, but I know that if others have survived it, so can I. For me, a former commissioned officer in the United States Army, I knew that there were others, like me, who had not yet been shown the way into the wilderness.

## Veterans Expeditions

Since I did not know much beyond what veterans wanted, wilderness was a way to continue the adventure, the mission, and to be part of a team with a higher cause. I founded Veterans Expeditions with army veteran and former ranger Nick Watson in 2010 (see Figure 3). Nick left the military in 1995 and soon after lost the fingers on his right hand and severely injured his hip while working in oil fields. He went on to become a forest ranger and wilderness guide. The wilderness gave

him a sense of anonymity and purpose he could not find elsewhere that allowed him freedom to deal, or not deal, with his issues as he saw fit.

We quickly realized we were not alone in our attempts to get people outside and into the wilderness, but we wanted to push the envelope further and help move people beyond a one-week or once-in-a-lifetime experience so that the wilderness and outdoors would become a day-to-day part of their life. Early on, hiking up over Arapahoe Pass in Colorado, the same young marine who questioned in a chain restaurant what he had fought for, stared over the pass, turned to Nick and me and said, "This is what I fought for!"

Later that year, snowshoeing through the same area, we had another young marine exclaim to us that his time in the mountains was "freedom – ain't no other way to explain it! How do we get others to understand?"

In both situations, if we had advertised the trips as therapeutic, as something other than adventure, I doubt that we would have heard either man speak as he did. Although there is certainly a need for more traditional forms of therapy, and wilderness therapy itself has proved very useful, the wilderness – all by itself – is often enough, at least to sustain the individual until they are ready to take the next step. I have been accused of selling the wilderness and outdoors as a "silver bullet" that will solve all of our problems. I do not refute that accusation.

I have heard from hundreds of veterans that the wilderness, the outdoors – whether it's fly-fishing underneath an old railway bridge, surfing, climbing, or sitting in a duck blind – has helped bring them back from the brink of disappearing entirely from society. This could mean suicide or shutting down completely from the rest of the world. The wilderness helps to bring them back. From time to time, there are those who get lost in the wilderness and don't come back in from the trail. They're out there and finding joy in life. Isn't that enough?

**They went into the wild for the wild itself and ended up healing, and ended up rebuilding their trust in others.**

The movement to get military service members, veterans, families, and their children is coalescing in exciting ways (see Figure 4). Nick is still running Veterans Expeditions, while I have moved on to work as the national representative for Military Families and Veterans at the Sierra Club. Led by the Sierra Club, a number of other organizations as diverse as the YMCA, the Wounded Warrior Project, and a number of environmental education institutions and adaptive sports programs are coming together to determine a more coherent spectrum of care as it relates to the outdoors.

The idea is that any returning veteran, military family, or youth, should be able to experience everything from an afternoon in the front country or city park, to a week in the backcountry, wilderness therapy if they so chose, and ultimately, leadership training so he or she can help someone else begin to move through the spectrum at their own pace.

Surfing may not be for everyone, or even a multiday backpacking trip, but in the outdoors, in the wilderness, there is something for everyone, of this I am 100% certain. We are also discussing more and more about the importance of protecting and defending the wilderness, and what better advocates than veterans?

After all, as the marine sergeant said of the wilderness, "we fought for this," not for the chain restaurant. What better expression of our national democracy than public lands and protected wilderness? So, we're working hard to show veterans and the military community firsthand the threats to the

**Figure 4 – U.S. Marine Corps Sergeant Dean Sanchez resting on Longs Peak, Colorado. Photo by Stacy Bare.**

**Figure 5 – Veteran Service Project on the Yampa River. Photo by Stacy Bare.**

wilderness by taking them to the places where climate change is most noticeable. To that end, we are partnering with Jim Balog and the Extreme Ice Survey to take a group of veterans out to Glacier National Park in August of 2012 and allow them to see what all the climate change fuss is about and make up their own minds. This will turn into a national tour of participants, with multimedia images taken on the trip and shown to audiences nationwide. Veterans and the military still hold a certain moral authority in the minds of many Americans. We hope to encourage a new sort of patriotism that shows you can support the troops by getting outside and supporting public lands and protecting wild places. The wilderness can, and should be, a sort of living monument to the sacrifices of all of our troops, their families, and communities.

## Getting Outside

It's a message we're finding resonates with many veterans and military communities: You fought for it, now use it, and keep it safe … again. Many traditional veteran service organizations, such as the Wounded Warrior Project, Iraq and Afghanistan Veterans of America, the USO, the American Legion, and even the Department of Defense's own Morale, Welfare, and Recreation Division, recognize the value of the wilderness and outdoor recreation and are partnering with the Sierra Club to ensure more and more military families, veterans, and service members are getting outside.

Five years from now, we'll know we've been successful if all outdoor conservation and recreation groups are deliberately reaching out to the military and veteran community for membership and participation. Additional successes would include a formalized program for all returning combat veterans and their families to receive the hard-skills training required to survive in the wilderness, as well as ensuring they have opportunities to spend extended amounts of time in the backcountry in either formalized recreation or conservation programs, or simply with support from others in the area. Simply put, the formalized transition process from military to civilian should take place outdoors, not in a classroom.

Finally, the wilderness could, and should, be used as a key component to future peacebuilding and international reconciliation efforts. What better way to build trust and understanding than by allowing former combatants and future potential agitators to get to know each other on the opposite end of a rope, miles away from the hum of civilization? In the next few years, I hope to attempt our first climbs and backcountry trips in places such as Angola, northern Iraq, the Caucasus states, and ultimately Afghanistan.

Meanwhile, if you want to say thank you to a soldier, sailor, airman or airwoman, marine, or member of the coast guard, get outside. If you want to move from thanks to support, take one outside with you and just let them be.

STACY BARE served in Iraq from 2006–2007 as a U.S. Army Captain, where he received the Bronze Star for Meritorious Service. An avid rock climber and aspiring mountaineer, he is currently the Military Families and Veterans Representative for the Sierra Club.

# The Outdoor Explorers Mentoring Program

## *Multigenerational Mentors Fostering the Next Generation of Wilderness Stewards*

BY JENNIFER LUTMAN

It's a good thing to learn more about nature in order to share this knowledge with children; it's even better if the adult and child learn about nature together. And it's a lot more fun.

– Richard Louv (2005)

Missoula, Montana, is a university town filled with energy and excitement, surrounded by wild and open space. The Rattlesnake Wilderness lies on the edges of the city limits and the infamous Bob Marshall Wilderness Complex is only a few hours' drive northeast. Missoula is an outdoor person's paradise. However, many Missoula children face the same barriers to getting outdoors as other families across America: limited resources, competing priorities and a general fear among parents of letting children play in the outdoors (Novotney 2008). The Outdoor Explorers Mentoring Program was formed in December 2010 through a partnership between federal land managing agencies and local nonprofit organizations to provide outdoor experiences to underserved children and their adult mentors in the Missoula region. The program provides long-term learning and recreation opportunities in the outdoors, reconnecting children and their mentors with wilderness and other public lands while providing broad land-value and stewardship perspectives.

### A Program Based on National Efforts

The concern that today's children are disconnected from nature has been voiced for many years. In 2005, Richard Louv wrote *Last Child in the Woods*, a book exposing "nature-deficit disorder," a nonmedical term describing the decreased exposure of children to nature, and how this ailment is detrimental to a child's physical and emotional development. The book spurred a movement among the education and environmental communities, causing grassroots groups such as the Children and Nature Network to develop and organize around solutions to children's decreasing appetite for the outdoors (Bruyere et al. 2009).

**Jennifer Lutman.**

A decrease in environmentally literate citizens is not only an unfortunate loss in cultural history through human connection to land, but a condition that is potentially threatening to the support of essential ecological resources and the federal agencies charged with protecting those resources. Peter Kareiva of the Nature Conservancy and Environmental Studies Institute suggests, "If people never experience nature and have negligible understanding of the services that nature provides, it is unlikely people will choose a sustainable future" (Kareiva 2008, p. 2758). As a result of this public and governmental concern over nature-deficit disorder, many federal agency initiatives have focused on getting kids outdoors. Since 2007, the U.S. Forest Service has provided millions of dollars toward a program called More Kids in the Woods. This internal, competitive funding program provides financial resources to Forest Service district offices nationwide in order to "engage children in meaningful and sustained outdoor experiences; increasing awareness and understanding of the

natural world and the benefits of forest and grassland ecosystems, and promoting physical activity as an essential component of healthy lifestyles" (U.S. Forest Service 2011, p. 1). In 2011, the Forest Service made $500,000 available to fund More Kids in the Woods projects, one of them being the Outdoor Explorers Mentoring Program. America's Great Outdoors (AGO) is the most recent initiative focused on increasing youth stewardship of the outdoors, among other priorities. Spearheaded by the Obama Administration in 2010, AGO was tasked to "develop a 21st Century conservation and recreation agenda" (Council on Environmental Quality 2011, p. 1). After 51 listening sessions across America, AGO released its report filled with public concerns and recommendations regarding America's great outdoors. The following is one observation, collected from those sessions:

> The outdoor experience has lost its currency for many Americans because of busy schedules, shifting cultural norms, financial barriers, and the lure of new technology. AGO listening session participants spoke about the need to make the outdoors desirable and relevant to America's young people, and to redefine the "great outdoors" to include not just iconic places but neighborhood and city parks, community gardens, and school yards as well. (Council on Environmental Quality 2011, p. 7)

For a new outdoor education program to be successful and meaningful among today's youth it is clear that wilderness cannot be the only topic addressed. Wilderness does not exist in a vacuum; it affects and is affected by all elements surrounding the area. Therefore, the Outdoor Explorers Mentoring Program is inclusive of all the natural areas around Missoula – from the banks of an urban river to the wilderness. All landscapes must be addressed in order for children to develop a strong land stewardship ethic that will build upon itself and include wilderness over time.

## The Mentor Factor

One important difference between the Outdoor Explorers Mentoring Program and other outdoor education programs is the inclusion of adult mentors with children during outdoor learning experiences (see Figure 1). Research shows that at-risk youth benefit most from mentor relationships by "improving educational achievement; health and safety; and social and emotional development" (Jekielek et al. 2002, p. 2). Children's outdoor comfort level and confidence in outdoor abilities greatly improves when their mentor participates in the experience with them simultaneously. As a result, the Outdoor Explorers Mentoring Program is structured to provide outdoor learning experiences to established mentor relationships between at-risk children and adults.

Additionally, university students with experience and interest in outdoor education provide program leadership and guidance during the outdoor trips. The inclusion of university students in the outdoor learning experience adds another dimension to the mentor relationship, and to the program overall. Students model stewardship behavior and expose possible educational pathways for younger children who may wish to pursue environmental careers. The inclusion of university student leaders to an already established mentor relationship provides an array of role models for young children, all of whom are exhibiting a love of the outdoors.

## Building Partnerships

Exposure to diverse, local outdoor spaces and multigenerational mentorship became the structure for the Outdoor Explorers Mentoring Program, but an implementation strategy still needed to be tackled. As the program began to take shape, it was clear that not all of the target children of Missoula could be reached due to deficits in staff capacity and funding

**Figure 1 – Big and Little participants in the Outdoor Explorers Mentoring Program Tribal Wilderness Workshop using primitive tools to start a fire. Photo by Jennifer Lutman.**

support. The Arthur Carhart National Wilderness Training Center, a federal interagency organization and founder of the Outdoor Explorers Mentoring Program, believed partnerships with local nonprofit organizations would provide valuable resources and increase program potential for success. The Carhart Center has a history of working with various federal and nonprofit organizations, creating collaborative educational materials such as The Wilderness and Land Ethic Curriculum, a K–12 curriculum used by teachers across the nation. (This curriculum can be found at carhart.wilderness.net/index.cfm?fuse=curriculum.) Therefore, partnerships with local organizations with established programs for children and staff committed to the core values of the Outdoor Explorers Mentoring Program became a very important component of the program. The most fruitful partnerships, established with the Missoula chapter of the Big Brothers, Big Sisters organization, Montana Wilderness Association (MWA), and University of Montana Wilderness Association (UMWA), provided the best access to underserved children while involving and empowering university students in outdoor education.

Big Brothers, Big Sisters of Missoula was founded in 1970 with the purpose of mentoring at-risk children ages 6 to 14. Their mission is to help children in need reach their potential through professionally supported, one-on-one mentoring relationships. According to the organization's statistics collected from Missoula County, 63% of current matches involve children and youth who are living in families whose annual household incomes are at or below the federal poverty level; 75% are from single-parent households; 25% have a parent who is incarcerated; 12% are of Native American, Hispanic, or Asian Pacific Islander descent. As a best practice organization, Big Brothers, Big Sisters has been scientifically evaluated and proven to be effective in achieving their mission, and the Missoula chapter staff was eager and excited at the idea of providing more outdoor experiences for their matches of "Bigs" and "Littles" (i.e., adult mentors paired with at-risk children) (Big Brothers, Big Sisters of Missoula – About Us 2011) (see Figure 2).

**Figure 2 – A Big Brother, UMWA student, and Little Brother at an Outdoor Explorers Mentoring Program event identifying animal tracks near the Clark Fork River in Missoula. Photo by Jennifer Lutman.**

UMWA is the student group on the University of Montana campus associated with MWA. This group of bright and dedicated wilderness stewards became an instrumental part of the Outdoor Explorers Mentoring Program. Home to one of the top forestry and wilderness studies programs in the nation, students flock to the University of Montana to study natural resources and work on pressing environmental issues, making the student body one that is generally passionate and educated on all topics concerning the outdoors. Even though UMWA is newly formed on campus, their members have proven themselves to be motivated and ambitious through successful events such as wilderness hikes and community organizing around local public land issues. UMWA's small group of dedicated students embraced the Outdoor Explorers Mentoring Program by taking on the leadership role of guiding trips and becoming land stewardship role models to younger children in the community. In addition to serving youth, the program offered students an opportunity to gain practical experience in informal outdoor education, explore possible career opportunities, and increase competiveness for natural resource jobs.

## Program Overview

The Outdoor Explorers Mentoring Program provides one outdoor trip per month for Bigs and Littles, planned and led by UMWA students and the Carhart Center. Trips have included snowshoeing in the Rattlesnake Recreation Area (near the Rattlesnake Wilderness), a visit to the National

**Figure 3 – A group of Outdoor Explorers Mentoring Program participants hiking in the National Bison Range Wildlife Refuge near Moiese, Montana. Photo by Jennifer Lutman.**

Bison Range Wildlife Refuge (see Figure 3), white-water rafting near the Alberton Gorge, winter animal track identification, and participation in the Clark Fork River Cleanup. An average of 10 to 20 people participates in each event, and effectiveness surveys are conducted among Bigs after each trip.

## Implications and Recommendations

With less than a year of program implementation, the success of the Outdoor Explorers Mentoring Program cannot yet be fully measured. However, preliminary surveys show an abundance of positive feedback from participants. For example, preliminary data indicate overwhelming support for the program, increased knowledge about the outdoors, and a desire to continue participating. The survey asks trip participants to provide their opinions about the Outdoor Explorers Mentoring Program. About 93% of people surveyed agreed or strongly agreed that they "found an appreciation (new or renewed) for the world of nature and learning opportunities in a natural setting" through their participation in the program, and 89% of participants would recommend the Outdoor Explorers Mentoring Program to others.

The Outdoor Explorers Mentoring Program is a community-based initiative that can be easily replicated across the nation. With a focus on use of local outdoor spaces and community partnerships, the program is grassroots in nature and meant to be adaptable to individual community's needs and available resources. However, the program is intentionally designed around three key elements, which has proven to be a successful model through survey evidence and Missoula partnership feedback. The elements include the following:

- Federal Agency Champion – At least one dedicated staff person must have sufficient time and interest in running the program. That person will act as program manager, keeping all partners and volunteers informed, updated, and accountable. A significant amount of time will be spent forming partnerships and recruiting volunteers, in addition to conducting outdoor trips.
- Local, Nonfederal Partners – Big Brothers, Big Sisters is a widely recognized organization with a track record of fostering successful mentor relationships. Big Brother, Big Sister staff interest and commitment as a formal partner will vary greatly among various communities. However, the mentor relationship is an essential component of the program.
- Committed Group of Young Land Stewards – Finding the right group of students or young adults will be the most challenging part of replicating the program. The goal is to have a small group of young land stewards (ages 18 to 26) who continually participate in outdoor trips, building relationships with Bigs and Littles while gaining experience in informal outdoor education. Choose a few individuals with a strong interest in the program and empower them to take ownership of their involvement and contributions.

**Outdoor Explorers Mentoring Program Trip Example: Tribal Wilderness Workshop:** On June 11, 2011, the Outdoor Explorers Mentoring Program visited the Mission Reservoir near the Mission Mountains Wilderness and Tribal Wilderness (see Figure 4), an area jointly managed by the Forest Service and the Confederated Salish and Kootenai Tribes. Tim Ryan, a Salish-Kootenai Tribe member and educator, led discussions and activities for the day centered on tribal wilderness, wilderness survival, and traditional tools of the tribe. Bigs and Littles were able to make traditional cordage from the dogbane plant, start a fire with primitive tools, and identify local plants surrounding the area. This

interactive, hands-on workshop allowed participants to learn more about Montana's culture history and traditional land uses while enjoying the great outdoors. To learn more about specific outdoor trips and view trip photos visit, outdoorexplorers.wordpress.com.

## Conclusion

There is a growing concern that wilderness is irrelevant to today's youth. Providing holistic outdoor education programming that includes wilderness will help bridge this gap because wild elements can be found in any natural area. By highlighting wild elements and building recreational experiences over time, wilderness not only becomes relevant to children, but an important resource they wish to continue discovering.

In times of tight budgets and limited staff, the Outdoor Explorers Mentoring Program provides an opportunity for federal agencies and nonprofit organizations to pool their resources and provide meaningful, long-term outdoor experiences to local youth and communities. The program brings multiple generations together, sharing experiences in the outdoors and building relationships with both the natural environment and each other.

The future growth and expansion of the Outdoor Explorers Mentoring Program to areas outside of Missoula will depend on individual agency champions who seek to tackle the growing issue of children becoming disconnected with nature and wish to build a unique community program from the ground up. Although the foundations of this program have been laid in Missoula, each replication will look different in order to fit the needs, abilities, and desires of a specific community. To learn more about the Outdoor Explorers Mentoring Program and find resources to replicate the program in your area, visit www.wilderness.net. Together agencies and nonprofits can build strong local partnerships, provide outdoor education opportunities for underserved populations, and ensure wilderness remains a relevant resource for generations to come.

**Figure 4 – A child with a traditional tool at a Tribal Wilderness Workshop near the Mission Mountains Wilderness, Montana. Photo by Jennifer Lutman.**

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JENNIFER LUTMAN was the wilderness education and outreach intern with the Arthur Carhart National Wilderness Training Center and founder of the Outdoor Explorers Mentoring Program at the time of writing this article; email: jennlutman@gmail.com.

# Wilderness under Threat

## *Ndumo Game Reserve, South Africa*

BY PAUL DUTTON

### *Quo Vadis* (Where Are We Going?)

The Ndumo Game Reserve (NGR) in South Africa's eastern KwaZulu-Natal province shares a riverine border with Mozambique. It is one small protected gem of 12,000 ha (4,858 acres), once part of a biodiversity-rich and beautiful wetland ecosystem of meandering river floodplain and – until recently – home to the country's only floodplain hunter-gatherers, the AmaThonga people. Today, despite its protected status, it faces a growing series of threats that are already diminishing its unique ecological integrity and the sustainable ecosystem services it provides for people from near and far.

Maputaland – the cultural and biological region in which NGR is located – is a world treasure, a mixture of marine and terrestrial nature of great allure and importance (see Figure 1). Mine is a professional history and a personal love affair with this incredible area. I started my game ranger career with the Natal Provincial conservation authority, the Natal Parks Game and Fish Preservation, in 1958. My first game reserve station was at Lake St. Lucia, or Cwebeni as it's known by the AmaThonga. The Lake St. Lucia was one of those exceptionally unique African ecosystems where hippos, crocodiles, Zambezi sharks, and freshwater and marine fish species shared the same water and wetland habitat. South Africa's largest nesting colony of white pelicans (numbering more than 3,000) was on an island in the lake's wilderness area.

My fellow game rangers and I were then young, occasionally angry, and very dedicated frontline conservationists, working with our local Zulu game guards who, although disenfranchised by apartheid, were nonetheless as committed as we were. We'd often had to lock horns with government authorities to fend off threats of deproclamation of protected areas, and to replace them with exotic tree plantations and pineapple cultivation. On one occasion during the early 1960s during the era of communist obsession, I wrote a personal letter to our country's prime minister questioning the logic of developing a missile testing facility in the heart of the Lake St. Lucia's wilderness area.

**Paul Dutton.**

Shortly thereafter, in 1962, by coincidence (or intention) I was hastily transferred (or banished) 120 km (74 miles) north to the NGR on the border with neighboring Mozambique. I missed Lake St. Lucia, but I soon fell under the spell of this wilderness wetland at the confluence of the Pongolo and Usuthu Rivers. The AmaThonga hunter-gatherers applied their age-old traditional skills using a variety of harvesting methods (see Figure 2), such as guide fences (*umtamana*) set with basket traps (*umona*), and community fish drives (*isifonya*), and harvesting tilapia and catfish from floodplain lakes fertilized by defecating hippos. Corms from the water lily (*Nymphaea* species) were harvested and boiled to provide starch, which together with water chestnuts (*Trapa natans*) added relish to their piscivorous diet.

As an occasional treat of red meat, brave warriors would position themselves in an overhanging riverine fig tree to impale hippos with a spear as the animals lumbered up from the Pongolo River for a night's repast of grass. Living in a mosquito- and malaria-plagued area provided them with a natural barrier from the expansionist forces (*impi*) of the

**Figure 1 – Young girl carrying her sister in Tongaland. Photo by Vance G. Martin.**

neighboring AmaZulu, located further inland in malaria-free areas. Even the traditional music melded with the floodplain's snorting hippos and haunting cries of the fishing owl. On most nights, skin drums (*izigubhu*) and reverberating reed drums (*ingulule*) accompanied singing and dancing, with the men enlivened by libations of local wine fermented from palm sap.

The reserve's two feeder rivers, the Pongolo and Usuthu, ran swift and clean from their upland catchments, unimpeded by dams or weirs until they spilled over into floodplain lakes (pans) during annual summer floods (see Figure 3). This ancient flooding regime acted as a well-timed biological trigger for spawning fish. In the dry winter months, receding water levels in the pans provided the AmaThonga the opportunity to plant their maize and other crops in well-drenched alluvial silt. Some of the lakes were saline from ancient marine salt deposits leaching into the water, which the locals collected and dehydrated to form crystalline salt for cooking. They satisfied their sweet tooth by chewing sugarcane.

The sustainable lifestyle of these wetland hunter-gatherers, with no equal in KwaZulu-Natal, was first disrupted in 1964 by a new dam 70 km (43 miles) south of Ndumo that captured the entire Pongolo River where it cleft through the Lubombo Mountains. The industrial disruption of the timeless and regular flooding regime changed forever the ecological, social, and spiritual integrity of a unique and diverse floodplain and its wilderness people. Traditional music gradually disappeared and communities dissipated. Farming of chemically drenched cotton, requiring winter flooding, replaced the abundance of freshwater fish and plants. What comes to mind is the paradox posed in James Merrill's *Divine Comedies*: "Lost, is it, buried? One more missing piece? But nothing's lost. Or else: all is translation. And every bit of us is lost in it."

The NGR fortunately managed to partially survive the anthropogenic onslaught on its hydrology through being fed by the free-running Usuthu River. The NGR became the last remnant, like a witness area, of South Africa's only hunter-gatherer people and their cornucopian, floodplain ecosystem. One of the oldest game reserves in South Africa, NGR had been proclaimed in 1924 by Denys Reitz, then South Africa's minister of lands, who said at the signing inauguration, "I've done my duty to God and the Hippo." Maybe he should have added "and to the AmaThonga hunter-gatherers," who had "managed" the reserve for millennia.

I became senior ranger of the NGR in 1965 at a time when, as a result of the nonseasonal flooding regime, the first signs of wetland degradation became evident. Most of the hunter-gatherers who had been displaced when the NGR was proclaimed were employed by the reserve as field rangers and tourist guides, and their traditional knowledge was put to good use. Two notable staff in this regard, Sigiya Gumede and Span Gumede, had previously lived in the NGR and subsequently utilized their profound knowledge of the reserve's fauna and flora as guides for the many local and international tourists wishing to learn about the NGR's rich natural history. Sigiya and Span were also traditional musicians, naturally carrying on this ancient and dying tradition as they conducted their field duties with their government-issued Lee Enfield rifles

**Figure 2 – Fish traps on Kosi Bay in Tongaland. Photo by Vance G. Martin.**

**Figure 3 – A river pan at Nyamitha. Photo by Paul Dutton.**

slung on their shoulders while strumming on a single-wire string bow (*umakweyana*).

## Biodiversity and NGR

In 1999, the NGR was accorded one of highest ratings as a global biodiversity treasure (and "hot spot") when it was designated a World Heritage Site and Ramsar site (UN Convention on Wetlands of International Importance). This small but prominent reserve has the greatest faunal diversity in South Africa, with 62 species of mammal, such as buffalo, hippopotamus (see Figure 4), black rhino, white rhino (see Figure 5), giraffe, kudu, impala, bushbuck, zebra, and warthog.

One of the main tourist attractions of NGR is its diverse avifauna (420 species), of which 35 species are included in the South African Red Data Book. An additional 120 species are fully associated only with the wetlands and floodplain, of which 19 are Red Data waterbirds, such as the white pelican, pink-backed pelican, black stork, white stork, yellow-billed stork, greater and lesser flamingo, and pygmy goose.

Waterfowl are well represented. The White-faced duck, for example, occurs in large flocks numbering 8,000 at the time when the growth of a specific aquatic plant (*Potamogeton crispus*) is most vigorous. The large flocks, which temporarily invade the floodplain, indicate its importance as a winter feeding ground. The NGR also provides a safe haven for palaearctic wading bird visitors.

The NGR has 43 species of fish, and two of these species, the Mozambique killifish (*Nothobranchius orthonotus*) and the checked goby (*Redigobius dewaali*), are unique to the area. The NGR also includes 76 species of reptiles and amphibians that are subtropical forms at the southern limit of their range, such as the Natal hinged tortoise, African rock python, Forest cobra, and Nile crocodile.

Four of these 76 species are wetland dependent species: the African rock python, Whyte's water snake, forest marsh snake, and Nile crocodile.

## Protracted War in Southern Mozambique

On June 22, 2000, the governments of Mozambique, Swaziland, and South Africa signed five protocols for the establishment of the Lubombo Transfrontier Conservation and Resource Area that together with contiguous terrestrial and marine protected areas in the iSimangaliso Wetland Park (formerly called Lake St. Lucia), which attained World Heritage Status in 2005, covers a total area of 332,000 ha (820,040 acres). NGR is a keystone area within this vast, multinational landscape.

The future of this tripartite transfrontier conservation initiative now hangs in the balance. During the course of the protracted civil war in Mozambique (1978–1994), the South African (SA) government opened up its border with Mozambique to give temporary sanctuary to affected Mozambicans in a corridor between the NGR and Tembe Game Reserve to the east. Most of these immigrants stayed after the war ended. As their numbers grew, mainly as result of an ingress of illegal immigrants, they subsequently

**Figure 4 – Hippos on the river near Nyamitha. Photo by Paul Dutton.**

invaded at least 1,620 ha (4,000 acres), or 14%, of the most ecologically sensitive section of the NGR and, in the process, staked out illegal land claims.

The largesse of the SA government in providing social services, including food security, is the magnet for massive, continuing, and illegal migration into an already densely populated and impoverished rural area. Such intervention by the government may be politically motivated by the need to garner rural votes.

Until recently, the response from the SA environment authority has been weak, and actually aggravated the situation to a point that the area was ungovernable. The ensuing destruction of the NGR may prove irreversible. The area is now characterized by criminal acts such as the removal of the reserve's game fence, allowing cattle to mix with feral buffalo, causing a costly outbreak of foot-and-mouth disease. Field rangers have been taken hostage; the previous border fence is a transit point of stolen vehicles; drugs and firearms are openly smuggled; wildlife is poached, including the two rhino species; and tourism infrastructure is being destroyed. Priceless, towering, widely buttressed, riverine fig trees that have survived 90 years of summer flooding have been felled with chain saws (see Figure 6). Vitally important ecotones separating alluvial floodplain from forest and woodland have been slashed and burned for a handful of maize.

Whereas Mozambican "refugees" wreak havoc on NGR's fragile ecology and special sense of wildness, their country across the Usuthu River border has enormous potential for traditional agriculture. I have heard that the Mozambique government is concerned that there is a dearth of young farmers, with only elderly folk living in this forgotten part of the country where fertile floodplain soil remains fallow.

**Figure 5 – A white rhino near Carnie. Photo by Paul Dutton.**

If NGR remains simply a political football, the game will be lost and along with it an international treasure and a local ecological keystone. Everyone would be a loser. As tensions mount, traditional leaders from the embattled area simply observe, and wonder when they will be consulted in finding an equitable solution for both the reserve and contiguous communities.

Some new initiatives provide flickering signs of hope. Dr. Japhet Ngubane, an environmental economist from the area, is building bridges between the local people and NGR management to prioritize issues and develop sustainable solutions. Criminal elements are being identified and isolated, allowing traditional leadership to formulate a winning scenario for all those affected in an area that has limited agricultural potential, but unlimited opportunities for various forms of sustainability.

In addition, after two years of invasion and degradation at Ndumo, the provincial and national governments appear to have woken up a bit as shown by a recent commitment to providing technical support and funding to finally resolve NGR's ongoing social and environmental malaise. However, the commitment needs to be fast-tracked while there is still an opportunity to achieve a win-win for both conservation and communities … otherwise both will lose.

## My Wish List

My statement of "Long live the weeds and the wilderness!" is part of my wish list for the future of the NGR:

1. As a priority, funds from the Critical Ecosystems Partnership Fund sponsored by Conservation International should support a holistic environmental study for the contentious area.
2. The tourism potential of the NGR should be given the highest priority, to put NGR on the map of unique natural destinations and to underpin long-term, sustainable socioeconomic training and development as an alternative to

**Figure 6 – Riverine forest vandalism in the NGR. Photo by Paul Dutton.**

slash-and-burn cultivation.

3. Negotiate with the Department of Water Affairs to reinstate normal summer flooding regimes from Jozini Dam to reestablish the bio-hydrological integrity of the entire Pongolo floodplain, to restore its once-abundant freshwater fishery.
4. Resuscitate the Lubombo Transfrontier Conservation and Resource Area tripartite protocol, which has the potential to reinforce the importance of the Maputaland biodiversity hot spot and improve the living standards of communities living contiguous to the Mozambique border.

International support is critical to the mitigation and protection efforts in the NGR in addition to the the nascent, local effort to stop destruction in the NGR before it is too late.

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***Continued from ALWRI RESEARCH NOTE, page 25***

- The map may also facilitate inappropriate comparisons of wilderness character among different wildernesses when repeated elsewhere. Each wilderness will have different data and weighting regimes in response to the particular characteristics and qualities of these areas.
- The map is only intended as an estimate of selected aspects of wilderness character and their relative spatial pattern and variability. The map products do not portray the symbolic, intangible, spiritual, or experiential values of wilderness character.

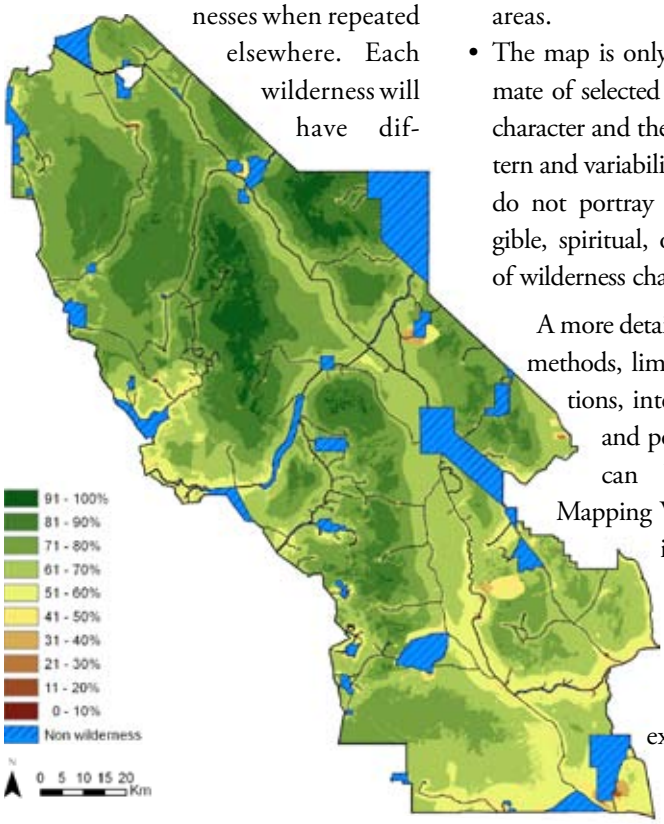


**Figure 1– Map of wilderness character in DEVA.**

A more detailed description of the methods, limitations and assumptions, interpretation of results, and possible improvements can be found in the Mapping Wilderness Character in Death Valley National Park Final Report, available at www.wilderness.net. Although still experimental at this point in time, mapping wilderness character appears to be a viable approach to help management staff gain a better understanding of how wilderness character varies across a landscape and how different factors combine to affect it. The Aldo Leopold Wilderness Research Institute is continuing this work at several other wildernesses, large and small, urban proximate and remote, and a wide variety of landscapes throughout the United States to refine and improve these methods.

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# Wilderness on the World Stage

BY LAWRENCE HAMILTON

It is almost universally acknowledged that "wilderness" as a desired label and category of land condition arose in the United States thanks to the efforts of many dedicated people. Wilderness has also become a recognized international category for a regime of protected areas under a system devised by the World Commission on Protected Areas of the International Union for the Conservation of Nature (IUCN). This is widely accepted, as for instance in the periodic United Nations (UN) List of Global Protected Areas. Wilderness is Category Ib in a system that ranges from Ia Strict Nature Reserves, through National Parks, National Monuments, Habitat/Species Management Areas, Protected Landscapes/Seascapes, and Multiple Use Areas. The latest UN List shows that roughly 14% of the world's terrestrial surface is under one of the IUCN categories of protection. To qualify as Ib Wilderness, the area must be managed mainly for wilderness protection.

Unfortunately, most countries of the world do not have a positive concept of wilderness areas. In fact, in most languages there is no good equivalent translation word. Does *terre sauvage* in French indicate the wonderful spirit-uplifting nuances and nature-self-willed attributes that North Americans and a few other English-speaking nations ascribe to it? In Spanish it is usually translated as *zona selvatica*, but this does not differentiate it from ordinary, as yet not-exploited forest. Wildland in Spanish is *terreno inculto*. Nor does the German *wildnis* convey a desirable state to most Germans.

For most people in the world, wilderness lands are not only unappreciated, but they have a distinctly negative, sometimes even a feared connotation. This is true in most of the developing world, but unfortunately this same connotation has long been historic in the psyche of most Europeans. Perhaps this is a heritage from Brothers Grimm fairy tales and other folktales. Many love hiking in their "wild" mountains, but prefer to have a well-constructed, maintained, and signed trail network, and a friendly inn not too far away. But this is gradually changing as the human footprint and urbanization alters wild landscapes. Let us take a brief look at some positive foreign (non-U.S./Canadian) instances where wilderness has become valued and recognized as a desired form of land use.

**Lawrence (Larry) Hamilton in Regional Nature Park Chartreuse in Haute Savoie Mountains in France. Photo by Linda Hamilton.**

In 2005 at the World Wilderness Congress in Alaska, the announcement was made of the establishment of Mexico's first wilderness – El Carmen, in the Sierra del Carmen – through private purchase.

South Africa, as early as 1968 made provision for legally designating wilderness areas, and there are now 18 such areas, covering 800,000 ha (1,976,000 acres), mostly in the Drakensbergs. Forty-eight percent of the famous uKhahlamba-Drakensberg World Heritage Site is wilderness. An Action Group for Wilderness in Africa has recently been established in Zimbabwe, under guidance from the South African Wilderness Action Group and the IUCN Wilderness Task Force.

New Zealand has land officially gazetted as "Wilderness

Area" under its Conservation Act and National Parks Act, and has some very large areas, especially in its Southern Alps. These areas are highly protected (Category Ib), with special management in approximately 12 areas covering well over 2.5 million ha (1 million acres).

Australia has a very active Wilderness Society that has gradually been changing its legendary "frontier mentality" of taming all undeveloped land, and valuing wildness instead. Large areas are being given protection status, largely for watershed value, in this the "driest continent," and these areas offer wilderness opportunities.

In Europe there exist organizations called Mountain Wilderness, composed of members of the mountaineering community. The most active chapters are in Switzerland, France, Italy, Slovenia, Germany, and Catalonia (Spain). These groups attempt to guard wild mountain areas from threats such as heliports and resorts, conduct mountain cleanup campaigns (such as K2 by the Italians), and provide training for mountain guides in environmental conservation.

Several years ago I participated in a symposium whose title was Wilderness Britain?, and there were scientists, academics, and thoughtful laypersons promoting the idea of rewilding selected modified landscapes, such as Dartmoor, including the reintroduction of now-missing original species of plants and animals (e.g., the beaver). Restoration of the former Caledonian Forest community in Scotland is being undertaken.

Wilderness in Europe has now been recognized by the European Union as playing a significant role in the EU's 2010 Biodiversity Strategy.

An organization in Europe called PAN Parks has a Wilderness Certification Program to encourage sustainable tourism while protecting wilderness values and areas. Eleven national parks in Europe have been certified as being of sufficient size (>10,000 ha/24,711 acres) and free of development. Most of these are in mountains, where the least modified lands are found. In 2010, Borjomi-Kharagauli National Park in Georgia had its certification renewed, and Rila National Park in Bulgaria was recertified due to management improvements after previously losing its certification.

**Roughly 14% of the world's terrestrial surface is under one of the IUCN categories of protection.**

Italy has a number of generally small areas designated mainly by communes within larger protected areas that are recovered from once-extensive human occupation. Large numbers of people moved out of the Italian Alps and Apennines since World War I, and the opportunity was seized to establish parks and reserves of various kinds. Much of the push for wilderness comes from the Wilderness Associazione Italiana, which is using and popularizing the English word *wilderness* rather than *terre salvage*. This Italian Wilderness Association has been designating a network of the "wildest" areas in various kinds of formally protected areas (now numbering 64).

Even a few developing countries, although not employing the term *wilderness*, have set aside for strict protection large chunks of land used only sparingly by small numbers of indigenous people. Brazil in 2003 created the Tumucumaque National Park, the world's largest tropical protected forest, located in the Amazon Basin. Suriname recently set aside 1.6 million ha (3,950,000 acres) in a nature reserve, and they are hoping for ecotourism revenue.

Recognizing the growing preciousness of wilderness worldwide, the World Commission on Protected Areas of the IUCN in 2003 set up a Wilderness Task Force. Vance Martin, President of The WILD Foundation, now in Boulder, Colorado, is the Task Force leader. It is hoped that this will help to counterbalance an increasing trend to have national parks and other protected areas become managed more for so-called sustainable development, rather than for biological diversity and wild nature (see article by Dudley et al. in this issue of *IJW* for an update).

Much encouragement on the international scene is provided through the 17-year-old publication *International Journal of Wilderness*. This is published thrice yearly by a consortium of organizations (mostly U.S.-based, but including two in South Africa), led by The WILD Foundation (U.S.). The WILD Foundation also takes leadership in holding a series of World Wilderness Congresses (WWCs). WWC9 (also called WILD9) was held in 2009 in Mexico, and was one of the best large meetings that this writer has experienced. It even exceeded the 2004 WWC in Alaska, which had been my favorite. It was at WILD9 that a stirring international call and target was issued by Harvey Locke (WILD vice president for conservation strategy) for dedicating "50 Percent for Nature." This has been officially adopted by The WILD Foundation. What a good strategy!

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# Announcements

COMPILED BY GREG KROLL

## Wilderness Loses Three Champions in 2011

The year 2011 saw the loss of three individuals who were pivotal in the management and defense of the Earth's wilderness heritage:

**William (Bill) Worf (1926–2011)** Bill Worf, who died of natural causes at his home in Missoula, Montana, in December 2011, dedicated his life to making certain the ideals expressed in the Wilderness Act would live on in the National Wilderness Preservation System. He was raised on a small ranch in Rosebud County, Montana, during the Great Depression, where he learned the lessons of hard work and perseverance that were hallmarks of his life. He graduated early from Forsythe High School so he could enlist in the U.S. Marines, serving three years during World War II, which included combat at the invasion of Iwo Jima. After the war, he returned home, married Eva Jean Batey in 1946, and earned a bachelor of science degree in forestry from the University of Montana. Bill worked for the U.S. Forest Service for 32 years in four national forests, two regional offices, and the national headquarters. In 1961 he was appointed supervisor of the Bridger National Forest, Wyoming, initiating the forest's first wilderness management program. Bill's advocacy for wilderness led the chief of the Forest Service to select him as one of a small group to write the regulations and policies for implementing the Wilderness Act of 1964. He subsequently led the agency's wilderness program in the Washington office for many years.

Upon his retirement from the Forest Service in 1981, Bill dedicated his life to working for sound stewardship and protection of wilderness. In 1989, he and two colleagues founded Wilderness Watch, the only national citizens' organization dedicated solely to protecting designated wildernesses and wild rivers. Bill remained active with Wilderness Watch and wilderness issues until his death. In Bill's honor, deductible contributions may be made to Wilderness Watch Endowment Fund, P.O. Box 9175 Missoula, Montana 59807, USA, or the Worf Memorial Scholarship Fund at the University of Montana Foundation, P.O. Box 7159, Missoula, Montana 59807, USA. (Sources: www.wilderness-watch.org; *Missoulian*, December 28, 2011)

**Jeffrey L. Jarvis (1953–2011)** Jeff Jarvis, who passed away at home in the company of family and friends in October 2011, dedicated his life to the preservation of America's wildlands and rivers. He was born in Marietta, Ohio, and earned a degree in natural resources from Ohio State University in 1975. He is survived by his wife Donita Cotter and daughter Zoe.

Jeff's federal service spanned 35 years. Early on, he worked for the U.S. Fish and Wildlife Service at the Mark Twain National Wildlife Refuge, Illinois, and for the National Park Service at the Jefferson National Expansion Memorial, St. Louis, Missouri, and Kings Canyon National Park, California. Jeff joined the Bureau of Land Management (BLM) in 1978 in Las Cruces, New Mexico, and then moved on to positions in Shoshone, Idaho; the California State BLM office; and the Arizona State office. He spent the last 11 years of his career in Washington, D.C., working to shape and implement the BLM's National Landscape Conservation System.

Jeff raised sheep, floated rivers, bred registered Texas longhorns, and learned to sail. His curiosity, generosity, and humor entertained folks from all walks of life. The family requests that donations be made in Jeff's name to the Wildlands Network, P.O. Box 5284, Titusville, Florida 32783, USA.

**Dr. Kenton R. Miller (1939– 2011)** An international conservation leader, Dr. Kenton R. Miller, 72, of Mathias, West Virginia, passed away on Monday, May 9, 2011, at Rockingham Memorial Hospital, in Harrisonburg, Virginia. Miller attended the University of Washington College of Forestry, earning a BS in forestry and an MA in Forest Recreation. The New York State College of Forestry at Syracuse awarded him a PhD in Forestry Economics in 1968. He served in various positions for the United Nations

Submit announcements and short news articles to GREG KROLL, *IJW* Wildernss Digest editor. E-mail: wildernessamigo@yahoo.com

Food and Agriculture Organization (FAO), including heading FAO's Latin American Program on Wildland Management. Subsequently, he became a faculty member at the University of Michigan. He was twice elected chair of the World Commission on Protected Areas (WCPA), of the International Union for the Conservation of Nature (IUCN) based in Switzerland, and also served as the director general of the IUCN. He joined the World Resources Institute in Washington, D.C., and led the international cooperative effort to prepare the Global Biodiversity Strategy and played a significant role in the development of the Global Convention for the Conservation of Biological Diversity, a prominent aspect of the World Environment Congress in Rio. Upon his retirement from the World Resources Institute, the IUCN's WCPA established the Kenton Miller Award for Innovation in Protected Areas Management. The award's intent is to inspire a culture of innovation that encourages protected area managers and staff to confront seemingly impossible challenges and become conservation leaders in their own right. The award includes a $5,000 prize and the cost of a trip for the recipient to receive the award. Dr. Miller was successful in raising funds to cover the initial awards, but the WCPA is seeking donations to underwrite future costs. Checks may be made out to IUCN-US, indicating in the memo line that they are for the Kenton Miller Award, and should be sent to IUCN-US, 1630 Connecticut Avenue NW, 3rd Floor, Washington, DC 20009, USA. (Source: Obituary and Nik Lopoukhine, chair, WCPA)

## William Meadows to Vacate TWS Presidency

The Wilderness Society (TWS) president William Meadows has announced that in 2012 he will transition out of his position as president of the organization and will begin to serve in the role of counselor once a new president is chosen. The TWS Governing Council requested that Meadows remain with TWS and fill the counselor position previously held by Senator Gaylord Nelson from 1981 until his death in 2005. TWS is engaging in a national search to find a new president.

TWS was founded in 1935, and Meadows became its president in 1996. Under his leadership, TWS has played a critical role in defending the Arctic National Wildlife Refuge, protecting U.S. Forest Service roadless areas, and winning permanent protection for more than 5 million acres (2 million ha) of wilderness nationwide. According to a TWS press release, Meadows's approach to building new, diverse partnerships and coalitions has extended the reach of TWS and helped to strengthen the entire conservation community. (Source: wilderness.org/content/pr-20111011)

## WILD9 Proceedings Are Now Available

The proceedings of WILD9, the 9th World Wilderness Congress held in Mérida, México, in November 2009, are now available on the web, in print, and as a CD. Entitled *Science and Stewardship to Protect and Sustain Wilderness Values: Ninth World Wilderness Congress Symposium*, all versions are available free of charge. The document may be downloaded at www.fs.fed.us/rm/pubs/rmrs_p064.pdf. Hard copies and CDs can be ordered at www.fs.fed.us/rm/publications.

## WILD10 Date and Venue Confirmed

The WILD Foundation has announced that the 10th World Wilderness Congress (WILD10) will convene in Salamanca, Spain, October 4–10, 2013, focusing on the global and European status of wilderness and human society. Details await final negotiations with Spain's Ministry of Environment and Rural and Marine Affairs. (Source: www.wild.org)

## Planning for the 50th Anniversary of the Wilderness Act Is Underway

America's Wilderness Act will turn 50 in 2014 and planning is underway to commemorate this watershed legislation. Wilderness50, as the celebration will be called, will involve local, regional, and national events and proj-

**The new Spanish and English logos for WILD10—to be held in Salamanca, Spain, October, 2013**

ects specifically designed to elevate the profile of wilderness before the American public.

Wilderness50's goals are to

1. engage the public to better understand and appreciate the many benefits and values of wilderness, ultimately resulting in more people supporting responsible wildlands stewardship;
2. unite the wilderness community (NGOs/agencies/international advocates) to efficiently and consistently steward wilderness for the use, enjoyment, and benefit of the American people; and
3. connect with today's youth and with groups not using wilderness to find the thread that ties their lives to wild places so they can more directly relate to, understand, and value wilderness.

The 50th Anniversary National Planning Team is made up of representatives of federal agencies and nonprofit wilderness organizations who are developing a slate of potential events, including community walks for wilderness, classroom and general public wilderness educational programming, museum and visitor center exhibits, and television and studio-quality movie productions. Individuals interested in actively participating in the celebration planning should contact one of the following team members: Vicky Hoover, Sierra Club (vicky.hoover@sierraclub.org); Greg Hansen, Society for Wilderness Stewardship (redroadone@aol.com); or Lisa Eidson, federal agency liaison (lisa@wilderness.net). (Source: www.wilderness.net/50th)

## Roadless Rule Upheld by the 10th Circuit Court of Appeals

The Clinton-Era Roadless Area Conservation Rule was adopted by the U.S. Forest Service on January 12, 2001, after the most extensive public involvement in the history of federal rule making. The roadless rule generally prohibits road construction and timber cutting in 58.5 million acres (24 million ha) of inventoried roadless areas, covering about 30% of the National Forest System. Since then, the rule has been the subject of numerous legal challenges and administrative attacks seeking to reverse it and open the lands to timber production and other activities.

In a unanimous ruling, a three-judge panel of the U.S. Court of Appeals for the 10th Circuit, in Denver, said a lower court had erred in finding for the State of Wyoming, the plaintiff in the case, and ordered that the rule be put into force nationally. Wyoming had argued that preventing road construction into or on national forests or other lands is a de facto wilderness designation, and that the Forest Service had exceeded its own authority in trying to put the system into effect.

In the 120-page decision, the court said that full wilderness protection was far deeper than the mere banning of roads in certain places and that the Forest Service had broad jurisdiction in setting the balance of uses on the lands that it manages. "The Forest Service did not usurp Congressional authority because the roadless rule did not establish de facto wilderness," the court said in a decision written by Judge Jerome A. Holmes, who was nominated to the court by President George W. Bush. According to the court, unlike wilderness designation, roadless designation "will allow a multitude of activities including motorized uses" and "imposes no prohibition on mining or mineral-development activities."

Currently, the roadless rule is in effect nationwide except in Idaho, where different regulations apply. A lawsuit by The Wilderness Society and other conservation groups challenging the Idaho exemption is pending in a federal appeals court. The State of Alaska also recently challenged the rule in a lawsuit filed in the District of Columbia. (Sources: *The New York Times*, October 21, 2011; wilderness.org/content/tenth-circuit-court-appeals-protects-49-million-acres-national-forests)

## Mine Approved in Nahanni National Park Reserve

A zinc, lead, and silver mine has been approved within Canada's Nahanni National Park Reserve, Northwest Territories, a World Heritage Site since 1978. The mine property was completely surrounded by the park reserve when it was expanded by then-environment minister Jim Prentice in 2009 (*IJW* Digest, December 2009). However, Canadian Zinc Corporation kept its mineral rights to the Prairie Creek Mine. Prairie Creek flows into the Nahanni River, one of Canada's most scenic wilderness rivers and a global destination for canoeists. The area is prime habitat for Dall sheep, woodland caribou, and grizzly bears.

The Mackenzie Environmental Impact and Review Board was not unanimous in approving the mine. Review board chair Richard Edjericon acknowledged the board has issued a divided recommendation only once before. "It's very rare," he said. "We have always strived to work toward consensus. We just didn't reach it this time." The board said the underground mine, which was largely constructed in the 1980s but never operated, wouldn't pose any significant environmental hazard. However, much of the bedrock under the land is highly permeable, which makes it vulnerable to any type of spill or contamination.

Canadian Zinc's president John Kearney stated, "We have designed this with the highest standards and the best protection in mind." However, Kris Brekke of the Canadian Parks and Wilderness Society pointed out that the board didn't ask the company for binding commitments on the 25 pages of promises it made to mitigate environmental concerns. "If a development located upstream of a national park is to proceed, it must be regulated to the highest environmental standard," he said. (Source: *Canadian Business*, December 9, 2011)

## Marine Reserves Proposed for Antarctica

The Antarctic Ocean Alliance (AOA), made up of several conservation groups and campaigns, including Greenpeace, the Antarctic and Southern Ocean Coalition, and Mission Blue, is recommending the creation of the world's largest network of marine reserves in the seas around Antarctica. The proposal calls for the establishment of no-take zones – where activities such as fishing are banned – and the creation of 19 marine protected areas. AOA director Steve Campbell said, "If adopted, the Antarctic Ocean Alliance proposal would add to the land-based protection already in place for Antarctica to include the region's unique ocean habitats. … While still one of the most pristine environments left in the world, the ocean around Antarctica is fast attracting industrial fishing interests, particularly for long-lived toothfish and krill, which could have devastating impacts." The AOA says Antarctica's oceans are home to almost 10,000 species, many of which are unique to the region, including Adelie and emperor penguins, Antarctic petrels, Ross Sea killer whales, and colossal squid. (Source: U.K. Press Association, November 1, 2011)

## KwaZulu-Natal to Train Teachers about Nature Conservation

Formerly known as South Africa's Natal Parks Board, Ezemvelo KZN Wildlife is the government agency responsible for maintaining wildlife conservation areas and biodiversity in KwaZulu-Natal Province. Through an initiative called S'fundimvelo (a Zulu term meaning "we are learning about the environment"), the nature conservation authority will train teachers from 3,000 primary schools within the province regarding nature conservation and its importance in times of climate change. It is expected that the teachers in turn will educate some 300,000 pupils from grades six to eight about their local environment. First to benefit from this program will be schools within the radius of 10 km (6 miles) around protected areas such as game reserves and wetlands. According to Ezemvelo CEO Bandile Mkhize, "We are targeting children because they are the tourists of the future and by introducing them to the wonders of protected areas at a young age, they are more likely to return as tourists in their adult years and expose this legacy to their children." (Sources: *The New Age* [South Africa], November 21, 2011; Wikipedia)

## Facebook and iPhones Accompany Wilderness Climbers

Four thousand fans around the world followed Tommy Caldwell's progress in real time as he scaled the face of El Capitan, in Yosemite National Park's designated wilderness. Charging his iPhone with portable solar panels, Caldwell is an example of what has become an increasingly accepted practice among professional climbers. Up on El Capitan, his camp sat high above Yosemite Valley's busy loop road as thousands of tourists a day scoured the walls for the tiny specks ascending the granite cliffs. Caldwell had cell phone reception: full bars. When he faced a large snowstorm, he posed a question on a climbing message board to see if his hanging camp would be bombarded by falling ice after the storm cleared. After hundreds of responses, he was convinced his camp was unprotected from above and he decided to retreat the next day.

Katie Ives, editor of *Alpinist* magazine, said, "In the last six years, more climbers have started engaging in almost-live updates from the mountains. Instead of actually having the experience be the important part, it's the representation of the experience that becomes the important part – something is lost." Even Caldwell admitted, "It felt like there were a lot of people watching our progress, like a football game. Usually when I climb, it's just me and my partner. It's a very solitary thing. This is a whole new world." (Source: *The New York Times*, December 9, 2011)

## Field Museum Inaugurates "Restoring Earth" Permanent Exhibit

Chicago's Field Museum has created a new permanent exhibit, 15 years in the making: Restoring Earth. Employing dramatic, room-size videos and interactive devices, the exhibit tells the story of the museum's efforts to rescue great swaths of some of the world's most pristine and highly valued wilderness. "Restoring Earth," which covers 6,000 square feet (560 sq. m), is the first major permanent exhibit to open at the museum since 1999.

Concerned about the accelerating pace of habitat destruction around the world, museum biologists have organized rapid inventory teams that are

***Continued on page 48***

# Book Reviews

## *Arguments for Protected Areas: Multiple Benefits for Conservation and Use*

Edited by Sue Stolton and Nigel Dudley. 2010. Earthscan. 296 pages. $39.99 (paperback).

During the last 20 years, protected areas around the world have developed an identity crisis. Originally created in developed nations to protect scenic landscapes and wildlife for tourism purposes, then celebrated for their wilderness properties, protected areas have recently been challenged to serve such additional social and cultural functions as poverty reduction and community development in developing nations. As quickly noted in *Arguments for Protected Areas*, parks are now "simultaneously celebrated and criticized by different social movements, both claiming to occupy the moral high ground" (p. xxi), with the exclusionary and inclusionary paradigms competing for hegemony among the general public, academia, conservation NGOs, and the global conservation bureaucracy.

The editors and contributing authors of this book are mainly drawn from the professional rather than academic ranks – most are active members of international conservation agencies such as IUCN, WCPA, WWF, and so forth – and they acknowledge but choose to avoid this intense and difficult debate. Instead, the book takes a "neutral" position, suggesting that ethical concerns associated with both people and "wild nature" (p. xxii) need to be addressed by protected areas. The editors believe that "a proper understanding of the full range of values available from natural ecosystems ... can result in protected areas that are good for both people and nature" (p. xxii), and warn that "if we do not understand and publicize the full range of benefits from protected areas we risk not only reducing the chances of new protected areas being established but even of seeing some existing protected areas being gazetted and their values lost" (p. 3). However, there is a definite focus on social and cultural rather than ecological or wilderness values, although the preservation of nature is noted as "perhaps the most essential element" (p. 247) in conservation strategies.

Twelve issue-specific chapters examine human health and well-being, water, food security (crops and fish), national security, conflict resolution, spirituality, cultural diversity, recreation and tourism, climate change adaptation, and biodiversity. Each chapter has a similar structure. The authors start with a brief personal reflection or example of the specific topic addressed, introduce and situate the topic, note the current contributions of existing protected areas for that value (often in monetary terms), offer management options to maximize each value, and provide at least one extended case study on the value being discussed (usually from existing WWF case studies). The focus is on highlighting positive evidence and experiences rather than examining each value in a critical manner.

*Arguments for Protected Areas* provides a positive, articulate discussion of the multiple values of protected areas. The provision of numerous case studies and examples of how protected areas generate a suite of both natural and cultural values will be especially valuable to protected area administrators and managers, and will, it is hoped, encourage proponents of conservation to help create new protected areas and more effectively manage existing parks for these multiple values.

Reviewed by John Shultis, ***IJW*** book editor and professor at the University of Northern BC, Prince George, BC, Canada; email: shultis@unbc.ca.

## *Manufacturing National Park Nature: Photography, Ecology, and the Wilderness Industry of Jasper*

By J. Keri Cronin. 2011. University of BC Press. 201 pages. US$94.00 (hardcover)/US$32.95 (paperback).

J. Keri Cronin builds on a growing body of scholarship that examines the social construction of nature. She provides a well-illustrated, critical account of photography's role in shaping visitors' experiences and understandings of wilderness and national parks. Cronin suggests "the visual history of Jasper National Park shaped both the imaginative and the actual landscapes of that region" (p. 15). Her focus on Jasper National Park (JNP) in Alberta, Canada, traces representations of wilderness, recreation, and wildlife

produced by and for tourists, and their expressions in the park's policies and ecology. Cronin uses a range of historic and contemporary photographs, postcards, and advertisements to show a cycle of consumption and production that reifies what she calls "National Park Nature": culturally constructed spaces of supposedly pristine wilderness in which visitors leave their urban lives behind to recreate in harmony with the nonhuman world.

In the first chapter, Cronin introduces an ecocritical approach to photography in shaping National Park Nature as part of Canadian national identity, the international environmental movement, and the physical environments of protected areas. In chapter 2, she shows that government agencies, tourism operators, and environmental activists have used photo imagery as "proof" of wilderness in ways that reinforce, tame, and commodify a nature-culture dichotomy for tourists, while ignoring visitors' own environmental tensions. Chapter 3 examines why, despite large-scale environmental impacts, leisure activities such as golf, sport fishing, skiing, and photography have been portrayed as existing harmoniously with parks. Cronin also notes that environmental advocacy by enthusiasts and clubs such as the Alpine Club of Canada further reinforce and complicate dominant environmental ideologies by assuming their activities are authentic ways of engaging nature. In chapter 4, Cronin traces ideological shifts within wildlife photography from a zoological gaze, through juxtapositions of civilization and wildlife in close encounters, to recent education and conservation efforts. Photography, Cronin shows, has real consequences for the ways animals and landscapes are treated. She characterizes National Park Nature as emphasizing the simultaneous separation and coexistence of nature and culture in the park. These paradoxical themes "play up" the value of wilderness while enabling guilt-free amenities and visitation for tourists. In the fifth chapter, Cronin compares JNP to "fake nature" attractions such as Sea World and museum dioramas.

Cronin's analysis ultimately shows that representations of JNP fail to acknowledge human mediation and environmental degradation, and forestall the recognition of diverse human-nature relationships. Cronin argues that tourists' mode of (dis) engaging with landscapes of JNP have been predominantly visual, although recognition of multisensory mode engagement might further extend (or complicate) her argument. The central problem, as Cronin describes it, is not national parks per se, but accounts of National Park Nature that ignore multiple realities and histories of landscapes, human uses, and ecologies. Focusing on notions of purity, she ultimately concludes, National Park Nature "will not yield adequate ways of reframing human relationships with nature and non-human animals" (p. 150). Cronin encourages agencies, industries, and consumers to visualize the park in ways that "recognize that our presence in it is inextricably linked with the ecological conditions of the region" (p. 144).

*Manufacturing National Park Nature* is highly recommended to scholars and students of environmental studies and history, recreation and tourism, as well as those of media and marketing. It is an accessible way of challenging taken-for-granted conceptions of both wilderness landscapes and photography.

Reviewed by PHILIP M. MULLINS, Ecosystem Science and Management Program, University of Northern BC, Prince George, BC, Canada; email: mullins@unbc.ca.

***Continued from ANNOUNCEMENTS, page 46***

dispatched when an alarm goes out that biologically rich wild areas are being threatened. Composed of a dozen or more scientific specialists, the teams descend on threatened wildlands and spend three weeks cataloging every wild plant and animal species they encounter. With the inventory results in hand, the scientists alert government officials to what would be lost if human development is allowed to continue. According to Field Museum staff, the evidence collected in 24 rapid inventories conducted since 1999 has been compelling enough to convince governments in Bolivia, China, Cuba, Ecuador, and Peru to declare the areas as protected preserves.

John McCarter, president of the Field Museum, says, "It's unique, what we do. Conservation is not the sort of mission that natural history museums normally take on. People keep telling us that we are crazy, that conservation is not our business." Using film, photos, and specimens brought back from expeditions, Restoring Earth shows how this work fits into the museum's more conventional mission of cataloging and preserving the raw materials of life on Earth, and making them available for scientific study. "Conservation is not just gloom and doom and guilt trips," according to Anna Huntley, the museum's exhibition project manager. "Our scientists are real people who are passionate about their work, and we want our visitors to see that, and to see that they can be a positive, active part in this work right here, right where we live." (Source: *Chicago Tribune*, November 4, 2011)

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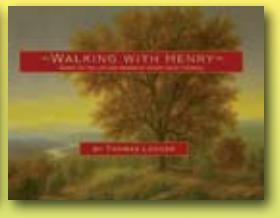


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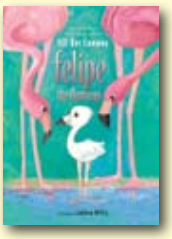


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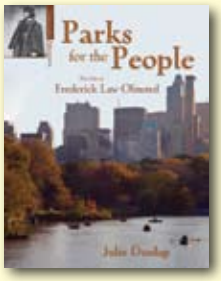


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